

# ISAPS<sup>®</sup> NEWS

OFFICIAL NEWS OF THE INTERNATIONAL  
SOCIETY OF AESTHETIC PLASTIC SURGERY

# 2

Volume 14 | Number 2



## INSIDE ■

New Webinar Series

Global Perspectives:  
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# ISAPS 2

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VOLUME 14

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# MESSAGE FROM the Editor

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Dear Colleagues,

The last three months have been some of the most challenging in the history of medicine and public health, and have affected all of us both personally and professionally. My hope is that you, your families and your staff have been safe and healthy, and that we will all be able to return to a degree of normalcy in the near future. This issue of the newsletter is different as well. As we welcome new designer, Doris Pfifferling in our marketing office in Munich, we have also opted for electronic transmission only as the postal system has been delayed or even suspended in many parts of the world.

Online education isn't available just for our children at this time; the Education Council of ISAPS has been busily creating outstanding content for you. They presented three very timely webinars in March and April focused on how to manage our practices in the midst of the ongoing COVID-19 crisis. They have also launched a series of live, weekly Master Class webinars. These 90-minute sessions are devoted to a single surgical topic. Please see the article by Drs. Kontoes and Sozer for more information about how to join these webinars, and how to view past presentations.

One silver lining in the quarantine many of us have faced is time to devote to writing, and as a result we are presenting you with fifteen articles on breast augmentation from experts around the world, in addition to four marking articles and two case studies on the same subject. The entire spectrum of breast augmentation has been covered, and I hope that you will enjoy this literary Master Class.

As you may know, Dr. Riccardo Mazzola (Italy) is a seasoned historian as well as a plastic surgeon. He organizes and



often writes historical articles for ISAPS News on various aspects of medical history. For this issue, he responded enthusiastically to our request for an article about the history of pandemics. His work, as always, is comprehensive and beautifully illustrated with images from his own collection. He found so much information on this topic, we had to split his article in two.

Our next issue will feature otoplasty and I look forward to receiving your articles on this challenging procedure. In conjunction with our regular series, we will be celebrating the 50th anniversary of ISAPS, and will be featuring articles about the society's history. Please send your submissions to [isaps@isaps.org](mailto:isaps@isaps.org).

On a final note, I would like to briefly mention the tremendous level of social unrest present in the United States as of this writing. Following closely on the heels of the world's most significant COVID-19 outbreak, these events have been simply devastating. The beauty of ISAPS lies in its ability to bring surgeons of all backgrounds and countries together with one aim - that of advancing patient safety and education in plastic surgery. I hope that you are able to appreciate the magnitude of that achievement as you read the current issue, which contains articles of skilled surgeons from all corners of the world. We are ISAPS.

A handwritten signature in black ink that reads "Nina S. Naidu MD FACS". The signature is written in a cursive, flowing style.

Nina S. Naidu, MD, FACS, Editor-in-Chief (United States)  
New York City, June 2, 2020



# MESSAGE FROM the President

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Dear Friends,

One topic has been dominating us for several weeks now: COVID-19. Therefore, my message will deal mainly with this hot topic.

## ISAPS RECOMMENDATIONS ON RESUMING ELECTIVE PROCEDURES

We have intensively searched the world literature about COVID-19 to collect evidence-based facts and give you recommendations regarding how you can protect your patients, your team and yourself, but also how you can start or find your way back to a new normality safely and in the best possible way. For this purpose, we researched 140 articles in the context of a meta-analysis which can now also be read as the article of the week in our journal. You can find this information on our website [www.isaps.org](http://www.isaps.org) under [COVID-19](#) at the top left of the home page.

We have compiled the scientific data for you and summarized it in an evidence-based recommendation so that you can orientate yourself. This is not easy for an international society, because especially in times of COVID-19, the big differences worldwide become apparent. The situation with supplies of protective equipment, tests, and drugs is so different that it is difficult to draft generally valid recommendations. Please use them as a source of information and adapt them to local conditions, legal issues and the supply situation in your community.

## WEBINAR SERIES

In addition, to support you promptly, we conducted three very successful webinars on COVID-19 and economic aspects in this crisis. If you were not able to view these webinars live, no problem, you can view

them on our website at any time – also in the COVID-19 section. We were pleased that this measure was so well accepted by nearly 4,000 viewers from all over the world.

At the moment, there are certainly many webinars available and as soon as we can travel again, the number will probably decrease. Surely, a certain number will stay - and this makes sense. Given this scenario, the Board of Directors has decided to make many of our scientific activities available digitally in the future so that those who don't have the time to travel, or don't have the money, can access this important information.

We have begun providing a 90-minute webinar every Saturday with fantastic speakers: our new Master Class series. On our website, you can check the current schedule under [Webinars](#) on the home page, top left, and mark your calendars. Access is free for ISAPS members and those who have applied for membership. For those who are not yet members, we encourage you to join to take advantage of this benefit.

## BY-LAWS CHANGES

You have probably noticed by now that we have postponed our congress by one year. It stays in Vienna, just one year later. This has caused some organizational problems, because we cannot approve a new board due to the missing general assembly. However, since I am convinced after two years in office that a new, fresh board should be elected, I will end my term as president in September – at the planned handover date – and not continue for another year. In order to ensure that Dr. Nazim Cerkes may properly succeed as the next president with a new Board of Directors,

we would like to have an electronic vote on the slate of the new Board of Directors by our membership. According to our current By-Laws, voting for the board is only possible in person, during a general assembly, at a Congress. Therefore, we will ask you in the next few days to agree to a change in the By-Laws that will allow electronic voting. Also, our new board structure will be explained. After that, we will send you our proposal for the composition of the new board and ask you to vote. As we need a quorum of 20% of voting members (Active and Life members), I would like to ask you to vote in order to achieve a result that is as democratic as possible.

#### VIRTUAL CONGRESS

Finally, I would like to invite you to ISAPS' first ever virtual congress! Although we have had to postpone our face to face Congress in Vienna until next year, we wanted to mark our 50th birthday in a fitting way in our new more digital times. Our state of the art virtual conference technology will showcase our usual high quality scientific program, a ceremonial handover of office to my successor as president Dr. Nazim Cerkes and our General meeting, as well as a full virtual exhibition and the chance to see new products, and meet our industry partners (perhaps for some of you for the first time since lockdown!).

So please save the date and plan to join us: Saturday, September 5th, the same day we would otherwise have

celebrated with you live and with a glass of champagne in Vienna. But we'll make up for that - I promise!

#### WELCOME SARAH JOHNSON

Last but not least, I would like to introduce you to Sarah Johnson. As you may already know, our current Executive Director, Catherine Foss, will be leaving us at the end of the year to begin her well-deserved retirement. After a successful search, we have found Sarah Johnson, who has already assumed her position as Director of Transition. She will become our new Executive Director to succeed Catherine Foss after her more than 22 years with ISAPS. Sarah lives in London and will coordinate her work with our staff from there. She has already settled in wonderfully and feels at home. We are also very happy to have Sarah with us and look forward to a close and fruitful cooperation. Welcome Sarah!

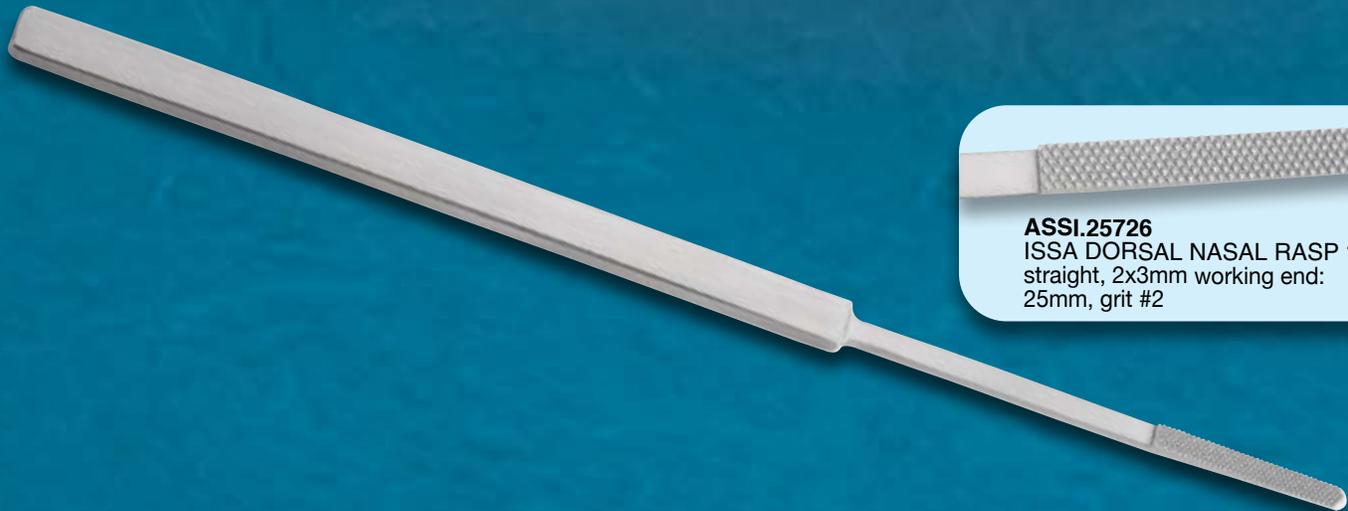
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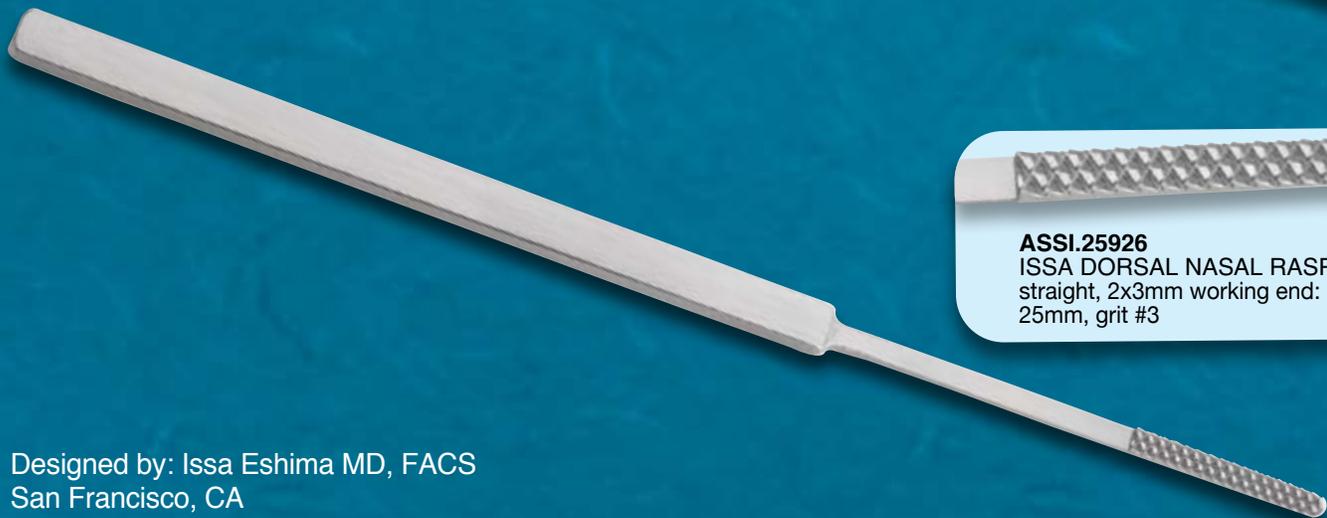
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# EDUCATION COUNCIL UPDATE

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**VAKIS KONTOES, MD, PHD - GREECE**  
Chairman, ISAPS Education Council



**OZAN SOZER, MD - UNITED STATES**  
Vice Chairman, ISAPS Education Council

Dear Members,

As you know, all our scheduled ISAPS Symposia and Courses have been cancelled or postponed due to the Coronavirus disease (COVID-19) pandemic. The ISAPS Biennial Congress in Vienna is also postponed to 2021. Most of us have been quarantined in our homes and unable to perform surgeries.

In March, in response to the Crisis, Drs. Cerkes, Kontoes and Saltz organized a series of three webinars about managing global aesthetic practice during the COVID-19 pandemic. These webinars were free for everybody and attracted 3,863 attendees from 113 different countries. The information given was very well received and helped many plastic surgeons around the world manage their practices during the pandemic.

Please visit the [link](#) on our COVID-19 resource page for a detailed analysis of the webinars, or to watch the series On Demand.

In April, Drs. Cerkes and Kontoes launched our series of ISAPS Master Class live webinars. In this series, leading experts in various subjects of aesthetic surgery give 90-minute presentations each week. Speakers in our first three webinars

have included Drs. Giovanni Botti, Dirk Richter, Enrico Robotti, Bahman Guyuron, Gerald O'Daniel, and Mario Pelle-Ceravolo who all gave outstanding lectures and interactive Q&As with our audience. In total, 8,468 individuals from 132 countries registered for our free April series. Again, a full report is

available and you can watch these webinars On Demand on our website at this [link](#).

The schedule and registration for the weekly webinars for the rest of the year can be found at this [link](#). The schedule might occasionally be amended depending on the speakers' and moderators' availability. We will keep you updated. These master class webinars are free for ISAPS members in good standing, and available for a small fee to non-members.

We are grateful to all our contributing faculty and very much hope as many members as possible will take the opportunity to enjoy this new member benefit. Finally, we sincerely hope that in the near future we will put this pandemic behind us and will be able to resume our symposia and courses, but until then, please stay with us for this great online learning activity.



# ISAPS VISITING PROFESSOR PROGRAM

## ONLINE LIVE LECTURE AS ISAPS VISITING PROFESSOR AT UNIVERSITAS INDONESIA IN JAKARTA



**JOÃO ERFON, MD - BRAZIL**  
ISAPS Visiting Professor

On March 31, 2020, at 8:00 am (Jakarta time) we held an online conference for the Plastic Surgery Service at Universitas Indonesia, organized by the Indonesian Clinical Training & Education Center (ICTEC) Faculty of Medicine Universitas Indonesia - Cipto Mangokusumo Hospital, Jakarta, headed by Dr. Teddy Prasetyono, head of ICTEC and ISAPS National Secretary for Indonesia.

I was invited by Dr. Prasetyono to talk about Aesthetic Breast Surgery with the theme “Aesthetic Breast Lift, Reduction & Augmentation: Erfon’s Techniques and Formula.”

It was a one-hour long lecture, very well structured by Dr. Prasetyono (photo). The subject is very dear to us as we have several publications on it. The last being in the ISAPS JOURNAL (Breast Reduction: 33 Years Using a Single Cell Block. *Aesthetic Plastic Surgery* (2019) 43 (6): 1480-1488) that we put at the disposal of the participants. After forty minutes of presentation we answered many questions from some of the 299 participants from 17 countries, and it was very interesting. We had met Dr. Teddy Prasetyono in 2012 during an ISAPS Course in Shanghai. During this time Dr. Carlos Uebel was president of our Society. Our dear friend and great president by the way. Soon we had established a pleasant scientific relationship with Dr. Prasetyono because he is



a tireless researcher who remains gracious, courteous and refined. He invited me to repeat my presentations on “Reduction Mammoplasty in a Single Central Block” and “Lipoabdominoplasty with a Minimal Undermining” at a congress organized by him in Bali, Indonesia in 2014 as well as to teach a Course as a Visiting Professor of ISAPS at ICTEC in Jakarta in 2015. During the latter, we had spent three days of intense scientific program all organized by Dr. Prasetyono. It was also a very pleasant social interaction with the entire medical team of the ICTEC Service as well as Dr. Prasetyono’s family members.

The initiative taken by him to create a “Live Lecture,” inviting colleagues from different countries, deserves all our admiration



Live Lecture  
from Brazil



and collaboration. ISAPS and I highly recommend this gesture for continuing education and dissemination of Plastic Surgery among its member countries. I am very honored to be part of this select group that makes up the “Visiting Professor Program” led by Dr. Renato Saltz, a true giant of our medical society. In my opinion, ISAPS has one of the most noble missions of sharing scientific knowledge among all the members of the Plastic Surgery Society in any affiliated country without distinction. As Visiting Professor of ISAPS, I have spent many happy moments interacting with a great number of colleagues from different countries.

In conclusion, I would like to express how honored I am to have participated in the first Live Lecture as an ISAPS Visiting Professor at the invitation of one of the great friends I have within this Amazonian universe that today is our dear Society, Dr. Teddy Prasetyono. And mainly because during these difficult times that we are living in due to the COVID - 19 Pandemic, participating in this intense movement of digital communication that we are seeing happening is extremely pleasant. I am grateful for the honorable invitation from Dr. Prasetyono and the friendly partnership of Dr. Saltz, head of the “Visiting Professor Program.”

# MANAGING DURING COVID-19



KAI O. KAYE, MD, PHD - SPAIN

## MARKETING FOR PLASTIC AND AESTHETIC SURGERY IN TIMES OF CRISIS

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**T**he 2020 COVID crisis has taken the world in an unprecedented storm of events - it has deeply affected the way we live, the way we work and the way we interact with our peers. For many of us, it disrupted working as doctors and delivering specialist plastic and aesthetic care completely.

Judged by today's view, this situation will endure for a couple of more months, depending on your country, and even after it comes to an end, some things may take a long time to go

back to the way they were before - and others may even stay changed forever.

Confronted with empty and closed clinics, uncertainty about the future, and growing financial worries, many of us may wonder if it is worth continuing to invest in marketing, and even if so, what kind of approaches allow for a continuation of communication with our patients in a way that is perceived ethically and morally in tune with the troubled times we experience at the moment.



In my opinion, continuing the usual marketing strategies centered on the transfer of information about aesthetic procedures, the creation of a desire for having a certain treatment through beautiful faces and perfect bodies is wrong not only from an ethical viewpoint, but as well from an economical one, as it may drive future patients away that would have come to you once the crisis is over, simply because they perceive you as insensitive or income driven.

We may like it or not, but in times where many values are shattered and put under daily questioning, the perceived value of aesthetic surgery for society may not be the same anymore, and the continued pursuit of an outdated value may lead to bitter critiques by patients and peers alike.

Aggressive marketing from some aesthetic surgery franchises has been reported here in Spain, using the crisis as a “special rebate” selling strategy, but I would think that most of us agree on this being a shortsighted strategy aimed on taking over patients from more responsible colleagues, and it may backfire soon.

It is strongly advisable that you rethink your strategies and decide if you have the financial resources and adequate personnel to

carry out something new that adapts to the current situation, or if it is just better to slow marketing down for a while and at the same time maybe cut some associated costs in response to the estimated loss of income to your practice.

You should take into account as well that people at the moment DO have more urgent problems than browsing for information on aesthetic surgery; my servers show a 30 % drop in visitors within the last 10 days. So even if you keep marketing online, your target clientele may be much smaller, and associated costs of investment (Google ads and contracts with platforms) should be adjusted to this fact. It would be just unwise to spend the same amount of money on certain channels if you know there are just less viewers and potential patients.

Why do I write this reflection, and why do I think it is a matter of human resources as well? If you have, like many of us, parts of your marketing sourced out to professional bloggers and social media curators, you may experience that they are simply not trained in writing sensitive texts, because they are trained in marketing and in selling, so it may be difficult for them to produce adequate context over two months or longer if you don't do it yourself and hand pick and control your publications.



You can for sure do one of the countless “**#wearewithyou**” newsletters that we see today from all our societies, providers and major companies, but I always try to measure communication efforts I plan to make against my own perception of the communication of others.

The fact that Apple, Microsoft, Spin or any other company whose services I may have used in the past write me newsletters now about how much they care and that “they are with me” only reflects the general helplessness experienced within the marketing departments throughout every sector of business, but it does not console me, neither does it make the brand more attractive for me for future buying decisions.

Therefore, in my personal opinion, this is an investment with unclear financial return, and the moral impact is debatable due to its interchangeability, making it prone to get lost in the flood of similar announcements.

All that said, where does it leave us? What should we all do during this difficult period to keep our practices alive, at least digitally, if they will remain closed for a long time in the real world?

It is a tough question, and I don’t believe there is an answer that fits everyone. I can only tell you the changes I already implemented, and share with you the ideas that my marketing department and I developed:

1. Regarding personnel, I reduced the independent contracts I have with media service providers (Medical Blogger, Social Media Consultant) 50% as I anticipate less content and more necessary involvement by my staff and me.

I will reduce my services for graphic design to 25% as I do not see any place or impact of print media at the moment.

2. Regarding publications for Social Media and a patient newsletter we are planning a regular series on the following subjects:
  - News to share about how COVID changes our lives as care providers, such as you or any of your staff volunteering/being co-opted to help with the current situation, information about your involvement in the crisis (our clinic for example gave the respirators to the health authorities).
  - An initial video where I comment on my viewpoint regarding

the actual situation as a surgeon and doctor for my patients, comment on the changes we are working on (or not) at the moment, on my perception of where we may be in 2-3 months, what patients can expect, and what we can do for them.

- A piece answering people’s questions such as ‘When will I be able to schedule surgery?’ ‘Is it possible to have a consultation?’ ‘What happens if I book surgery for a future date but it’s unable to take place?’
  - **#thehumanfactor**, a Q&A series with our clinic’s surgeons and specialists talking about what they do when they are not working and how they perceive the crisis for themselves.
  - If you have a dental department: ‘How to take care of your teeth while you can’t go to the dentist.’
  - **#takecareofyourself**: A series of 10 medi-spa articles such as ‘Self-care treatments you can do at home during isolation.’
  - **#yourdoctorsview**: Regular updates and comments by newsletter for our patients’ database to help them understand the evolution of cases better, and to give some guidance on the multitude of media coverage which is not always accurate.
3. We will offer free online consultations to patients, either by Skype or Zoom, and try to create a backlog of planned interventions and treatments for the time when we are able to work again.

Will all of this work? Again, we don’t know yet, but even if only some of it works, it will help to keep communication with your patients without being perceived as someone who does not know where to set priorities, and it may even help to make you and your team more human and approachable in the eyes of your patients, which would be the best long-term investment into the marketing of what we truly are: Doctors who care for patients.

# CRITICAL CARE CAPACITY IS THE CRUCIAL INDEX TO WATCH RIGHT NOW

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TIM PAPADOPOULOS, MD - AUSTRALIA  
ISAPS Parliamentarian

Since the COVID-19 pandemic, we as a global community, have made our own “Sophie’s choice.” We have chosen our health over the economy - the only right thing to have done. All efforts in the public health sector have focused on “flattening the curve,” but another metric worth watching is the capacity of hospitals to deliver critical care in intensive care units (ICUs) with ventilators. This is the index on whether hospital systems will be overwhelmed or not. Therefore, expanding our healthcare system capacity is vital to saving lives, because once overwhelmed, it results in an increase in the rate of mortality, and in turn, slow our return to the status quo.

Every day, the numbers of COVID-19 are increasing, threatening our efforts to “flatten the curve” and at the same time overwhelming the capacity of our ICUs leading to more deaths. That is why our efforts should be laser focused on increasing four to five-fold the capacity of each country’s ICU beds and ventilators. Of course, this will depend on each country’s economic capabilities and healthcare infrastructure, but this is what is needed right now.

Global cooperation and trust can also lend a solution helping hand here. Countries should be willing to share information, seek advice and produce and distribute medical equipment, especially testing kits and ventilators. A coordinated global

*THE MORE WE VALUE THINGS  
OUTSIDE OUR CONTROL, THE  
LESS CONTROL WE HAVE.*

*Epictetus*

effort could greatly accelerate production and make sure life-saving equipment is distributed more fairly and evenly.

Furthermore, we might consider a similar global effort to pool medical

personnel. Countries that are currently less affected could send medical staff to the worst-hit regions of the world like what happened recently when Cuba sent 53 health professionals to Lombardy, Italy, to help contain the COVID-19. This can be a reciprocal relationship, so that if later on the focus of the epidemic shifts, help could start flowing in the opposite direction. These actions accomplish several things: they provide help in an hour of need and personnel gain invaluable experience.

Critical care capacity revolves around the number of ICUs and ventilator units, hospital supplies and the trained workforce that has available what it needs to do its job properly. That means that we need to consider the following five points:

**1. Cease all non-emergency cases across hospitals and other sites of care.** This is estimated to free up to 30 percent bed capacity, caregiver capacity, and a portion of ventilator and personal protective equipment (PPE) capacity almost immediately. Furthermore, accelerating approval of treatments, as well as scaling-up of manufacturing and distribution of the treatments that reduce severity or duration of critical care requirement, can all lead to reducing length of stay (thus freeing up more beds).

**2. Expand on alternative hospital capacity.** For example, converting outpatient/ambulatory facilities or even converting non-healthcare facilities to acute ones (especially hotels). In addition, mobilizing existing navy hospital ships may help to take on non-coronavirus patients. However, these enormous ships (designed for trauma and combat casualties) risk becoming viral incubators just as prior cruise ship outbreaks have demonstrated. Accidental or unknowing admission of infectious or infected people to bunks outside of the hospital ship's relatively small isolation wards poses a particular risk to the both patients and the large crew required on board. If a rapid test or anti-viral for COVID-19 becomes available, the hospital ships would be at far less risk of becoming an unintended hotbed of viral infection. With better disease control tools, every single naval hospital ship could be converted into makeshift recovery wards, thus supporting/reinforcing medical care in a number of big coastal cities.

**3. Train additional frontline staff to deliver on capacity expansion.** For example, doctors in their final year of training can be fast-tracked to help in telehealth hotlines, triaging patients or collecting samples, and nurses trained on mechanical ventilator care can train them on that technology. Curricula to upskill healthcare workers in a matter of days have already been developed in both Asia and Italy.

**4. Increase critical supplies to keep current facilities fully functional and keep healthcare workers protected.** There is a supply and demand issue that needs to be considered. For supply, we can take stock of remaining inventory in the market, increase capacity of existing N-95 suppliers, import from other countries and source from non-medical industries.

For the demand side of the equation, we can prioritize and extend usage, re-use and reprocess, adjust clinical workflow and adjust care team guidelines.

**5. Slow the demand for critical care.** Most countries and states/provinces have deployed public health measures to slow the spread of the virus (for example, physical distancing, shelter-in-place and closing of public areas). A number of countries have used technology to support effective physical distancing (for example, the use of phone-based apps to minimize congestion in grocery stores). Some governments have created social and economic incentives for those in quarantine, including community-funded food delivery, income guarantees, solutions around caregiving needs, and job-security guarantees. Lastly, exponentially scaling-up testing capacity and contact tracing capability will also help the cause. The ability to test rapidly and isolate those at highest risk of infecting others will help contain a future resurgence in cases. For countries with few cases to date, rigorous testing can prevent escalation to the point where critical care capacity is strained.

Global cooperation is vitally needed right now. Given the global nature of the economy and of supply chains, if each government does its own thing in complete disregard of the others, the result will be chaos and a deepening crisis. Now more than ever, governments need to discard the veil of distrust, isolationism and xenophobia. Global solidarity without trust has no chance in stopping the coronavirus epidemic, a preview of things to come. But every adversity is a seed of opportunity. Hopefully the current epidemic will help us realize the acute danger posed by global dissent.

*A GEM CANNOT BE POLISHED  
WITHOUT FRICTION, NOR A MAN  
PERFECTED WITHOUT TRIALS.*

Seneca

# SURGERY IN THE COVID-19 ERA

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**NIGEL MERCER - UK**  
Chair, ISAPS Insurance Committee

Some of you reading this will have already opened your clinic doors for business, but have you thought ‘What if?’ Cosmetic surgical practice is different from insurance-based or health service surgery because the patient’s aftercare is entirely our responsibility, even after the patient has been discharged when fully healed.

I trust that everyone is COVID-19 testing patients and staff according to your national guidelines, and that you have modified your clinics to allow social distancing, and that everyone is protected with PPE and screens. We have an absolute legal obligation to protect our staff and our patients from coming to harm and part of that is looking at the peri-operative and post-operative pathway.

Surgeons are ‘hopeless optimists’ and we always expect an excellent outcome. If we did not, we could not do our job, just like an F1 Driver. Unfortunately, all F1 drivers will have crashed and had near misses and all surgeons will have had complications. You will have thought about the intra-operative complications and immediate returns to the OR, but have you thought through the ‘care pathway’ for later complications? In the COVID-19 era, there are no minor complications. If a patient develops a late complication such as a seroma, hematoma or infection requiring return to the OR, what is their care

pathway if they are COVID positive? If complications happen, you must have a plan!

In addition, if your patient catches COVID-19 in your facility, you may be very exposed legally. If they develop the infection in the post-operative recovery period and do not die, it may still significantly affect the expected result. They may need admission to a COVID positive site for management of any complication, including a Deep Venous Thrombosis/ Pulmonary Embolism. If that happens, who looks after them? Patients have to be made aware of this possibility because if they are not, the surgeon may be legally exposed. We cannot promise any patient the same result we could three months ago because the whole care pathway is now different.

When you are consenting a patient for surgery, the patient needs to be aware of the known risks and that there are new, COVID-19 related, ‘Unknown, Unknown’ risks, to paraphrase Donald Rumsfeld. They cannot sign a ‘blank cheque’ for consent as it is very likely to be invalid in law in many countries.

We should anticipate a rise in complications until we have worked out the best way to deliver care in the COVID-19 era and, as aesthetic surgeons, we need to be even more careful not to cause harm to our patients or cause reputational damage to our profession, which would be enormous.

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**KAI-UWE SCHLAUDRAFF, MD, FEBOPRAS, FMH - SWITZERLAND**  
 ISAPS Treasurer  
 Member, ISAPS Insurance Committee

The ISAPS Insurance Committee proudly announces the launch of Revision Insurance in the United States in June 2020.

This program was developed with the US-based insurance broker Distinguished Programs with one objective in mind: to create a tailor-made insurance product for ISAPS surgeons in case a patient needs further medical treatment or a surgical correction after their initial surgery.

This program has been many years in the making and has involved the efforts and advice of many ISAPS members to educate our insurance partners in what is needed to make it worthwhile for ISAPS surgeons.

Unlike other insurance options that cover treatment costs for life threatening complications (e.g., pulmonary embolism), Revision Insurance aims to take care of additional costs if a patient needs a revision procedure in the OR to correct an issue that is not life threatening, but is of concern to a patient or to their surgeon. A quick surgical revision - without additional financial burden to either patient or surgeon - offers a better outcome for the patient and reduces risk for the surgeon who may face patient dissatisfaction leading to a complaint.



## How does it work?

If a patient covered by Revision Insurance presents with a diagnosed condition for the procedure they have undergone, the surgeon makes a claim allowing him or her to take control of the situation and book the patient for their treatment without a conversation about additional costs. Claims are usually approved for further treatment within a few days.

The ISAPS Insurance Committee and our US partner Distinguished Programs are very excited about the US launch of Revision Insurance. Have a look at [www.medicalsafetyproviders.com](http://www.medicalsafetyproviders.com).

# OBITUARY

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## MARK A. CODNER, MD (1961 - 2020)

A bright, well-dressed, well-spoken young man, an Emory medical student, walked into my office thirty-five years ago and with a firm handshake smiled and said, "I am Mark Codner and I would like to be a plastic surgeon." A lifelong friendship and a productive professional relationship began that day. I witnessed with pleasure and satisfaction his success and his rise to the top. On June 4th, 2020 it came to an abrupt and untimely end as he passed away in his sleep. I was so saddened to see his vibrant life cut short. He still had so much more to offer.

After graduation from medical school, he completed a general surgery residency at Cornell and Memorial Sloan Kettering in New York. He returned to Emory in 1992 to train in plastic surgery with us. As a resident, he was amongst the best who trained there - eager and pleasant to work with as we collaborated on several projects. Completing the residency in 1994, he pursued fellowships in aesthetic surgery with Drs. Thomas Baker and James Stuzin in Miami and Oculoplastics in Atlanta with Dr. Sonny McCord. In 1995, he joined Dr. T. Roderick Hester at Paces Plastic Surgery in Atlanta, Georgia. A few years later when I joined Paces Plastic Surgery, Mark had already become a leading authority on Oculoplastics within our specialty and had established a successful practice. He welcomed me into the practice and it was good to work together again. His passion for teaching, which was already evident as a resident, was even more intense, as he was intimately involved in the training of our fellows. He was a friend and mentor to them all, encouraging them to write to contribute and advance the specialty. Later, he established his own practice and continued this commitment to educating the next generation of plastic surgeons through his fellowship.

He published over 200 peer reviewed papers and chapters, and several books including the classic Eyelid and Periorbital Surgery with Sonny McCord. He lectured extensively both here at home and abroad, demonstrating his surgical techniques



MARK A. CODNER, MD  
1961 - 2020

internationally. He was universally recognized for his many contributions.

A dedicated teacher and contributor, he served our specialty well. As a leader, he chaired the Atlanta Breast Symposium for twenty years and established the Atlanta Oculoplastics symposium. Just last year, in cooperation with the Education Council of ISAPS, led by the Chair, Vakis Kontoes from Greece, he initiated the first Southeastern Society of Plastic and Reconstructive Surgeons (SESPRS) and ISAPS jointly-sponsored Oculoplastics

and Facial Aesthetic Surgery Symposium in Atlanta. His tireless commitment and service to the Southeastern Society deservedly led him to the presidency. Sadly, he passed away on the eve of the society's virtual annual meeting. He served The Aesthetic Society on committees, as a board member, and as instructor in many teaching courses. He was involved in the establishment of The Aesthetic Society's Annual Residents' Business Symposium and chaired it for several years.

Above all, he was a compassionate, innovative, skilled surgeon dedicated to his patients and committed to excellence. He established a premier aesthetic practice in Atlanta. He befriended all who worked with him and cared for them deeply.

He had a passion for fishing and over the past few years taught himself how to paint. He loved life, lived it to the fullest, and was fun to be with both in and out of the office. I have many fond memories of our times with Mark and his wife Jane in Atlanta and on many international trips. He was a friend to many, a special friend to me, a respected colleague to all. I had the pleasure of practicing with him. I will never forget him we will all miss him. I will miss him terribly. His legacy will live on through his many contributions, but most of all the forty-eight fellows he mentored and befriended.

He is survived by his wife Jane, daughter Molly and son Blake.

Foad Nahai, MD  
(ISAPS President, 2008-2010)

# OBITUARY

---

## VIOLETA SKOROBAC ASANIN, MD, PHD (1970-2020)

With great sadness, we learned about Violeta's sudden death at her home on June 14th.

Her vibrant energy, ambition, and endless passion for plastic surgery will be always remembered.

Her professional life marked Serbian plastic surgery. She was the first woman in Serbia to found and run a private plastic surgery hospital, Clinic Diona. This led to her receiving a prestigious award as the best woman entrepreneur in Serbia in 2012.

In 2016, together with her colleagues, she founded the Serbian Society of Aesthetic Plastic Surgeons (SRBSAPS) whose president she remained until her tragic death. She was active in organizing educational courses in Serbia, always with remarkable international speakers. Unfortunately, her last project, the SRBSAPS Congress with ISAPS Symposium, that was supposed to be held in May in Belgrade, was cancelled due to the pandemic.



VIOLETA SKOROBAC ASANIN, MD, PHD  
BELGRADE, SERBIA  
1970-2020

From 2012 until 2020, Dr. Skorobac Asanin was ISAPS National Secretary for Serbia. She was a founding member of the ISAPS Women Surgeons Committee. She worked hard to break the prejudices of aesthetic surgeries and surgeons, to make aesthetic surgery safe, and to make it available for everyone. She was an honorary member of the Romanian Association of Plastic Surgeons, Board member of the Serbian Medical Association and Executive Board member at the Serbian Association of Private Healthcare Providers.

She was fully devoted to her work that she loved wholeheartedly and was a dedicated mother of a future doctor and beloved wife of her husband, Dragan. She was adored by her patients and colleagues from Serbia and from all over the world. We will all miss her a lot.

Katarina Andjelkov, MD, PhD  
ISAPS National Secretary for Serbia

What a loss for our ISAPS family - Dr. Skorobac Asanin's death came as a shock to us all.

Violeta had just completed her eighth year as ISAPS' National Secretary in Serbia, working for us in a wonderful way, and she put her heart and soul into it.

She campaigned for women in plastic surgery and took a pioneering role here early. Violeta was not only highly respected by her national colleagues, but was especially renowned internationally for her organizational skills, warmth and solidarity. She was good friends with many members worldwide, warm-hearted and she had a fascinating aura of enthusiasm for everything she was involved in.

Violeta was involved in many projects of the Society and made valuable contributions to many committees. Until her tragic death, she was the President of the Serbian Society for Aesthetic Plastic Surgery, a member of our Global Alliance.

We are very grateful to her for everything she has done for ISAPS and will keep her alive in our hearts. Our thoughts are with her family in deep sorrow.

Dirk F. Richter, MD  
ISAPS President

# ISAPS JOURNAL

## MESSAGE FROM THE EDITOR-IN-CHIEF



BAHMAN GUYURON, MD - UNITED STATES

The merciless Coronavirus has plagued all of us and is curtailing our activities enormously.

First, I sincerely hope that you and your families are safe. Second, I suggest that you create something positive out of this dreadful situation. Now that you have so much extra time, you may consider putting together your ideas about a study that you have been considering, but you never had the time to do, and when it is ready, submit the produced article to your journal.

This year marks the 50th anniversary of ISAPS. To celebrate this monumental occasion, we will have a commemorative August issue of the journal. We will publish the most referenced and downloaded articles, from as far back as possible. We have used referencing and downloading as reasonable measures of the importance of these articles. We have also asked the living authors or some other authority, if the author of



the article is no longer living, to write an update or commentary about these articles. We hope that this special issue will be very informative and interesting.

Submissions to the journal increased by 20% during the last calendar year, and they increased by another 25% during the first quarter of this year. This increased activity does not yet reflect the Coronavirus situation. I expect to see an additional surge in submissions during this time, while scholarly minds are not otherwise engaged in day to

day activities. I hope and I believe that the energy will be funneled and time will be devoted to writing scientific articles. The reviewers are responding to the invitations with greater celerity and submitting their reviews with alacrity, and I am deeply grateful for that.

Again, I wish you and your families continued safety and good health.

# GLOBAL SPONSOR FEATURE - MERZ

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## USING THE BODY-Q TO EVALUATE APPEARANCE AND QUALITY OF LIFE FOLLOWING TREATMENT OF SKIN LAXITY OF THE OUTER THIGH WITH MICROFOCUSED ULTRASOUND AND CALCIUM HYDROXYLAPATITE



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JESSE R. SMITH, MD, MS  
UNITED STATES



LAURIE A. CASAS, MD, FACS  
UNITED STATES

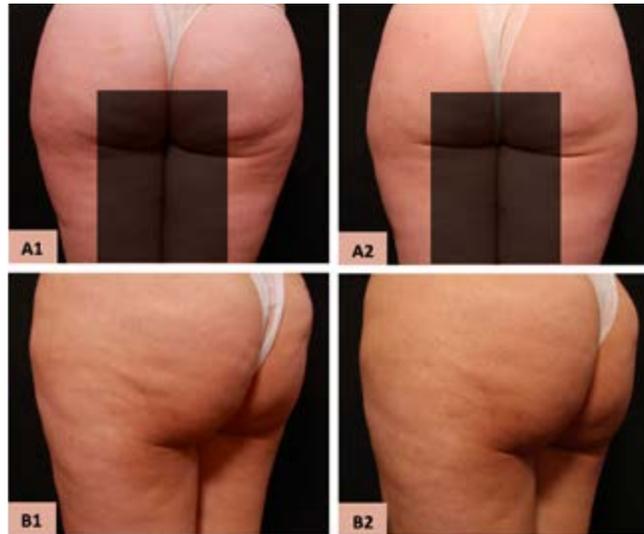


MICHAEL SHEEHAN, PA-C  
UNITED STATES

The appearance of age-associated skin laxity can negatively affect an individual's quality of life and contributes to the worsening appearance of cellulite.<sup>1,2</sup> Two procedures that have demonstrated collagen-stimulating properties and improvements in skin laxity are microfocused ultrasound with visualization (MFU-V, Ultherapy System; Merz North America, Raleigh, NC, USA) and subdermal injection with calcium hydroxylapatite (CaHA, Radiesse; Merz North America, Raleigh, NC). In 2017, Casabona and Pereira published a novel treatment protocol for combining MFU-V and CaHA that was shown to effectively improve the appearance of cellulite on the thighs and buttocks.<sup>3</sup> However, these authors did not include data from a reliable, validated patient-reported outcome measure.

Today, there is an increasing amount of attention placed on understanding the patient's perception of the result and

the impact of treatment on quality of life.<sup>4-6</sup> We designed a prospective trial with a baseline measure, intervention, and post-test<sup>7</sup> using a patient-reported outcome measure known as the "BODY-Q."<sup>8-11</sup> Following IRB approval, we enrolled 60 women aged 30-59 years with a body mass index less than 28 kg/m<sup>2</sup> who sought treatment of skin laxity on the outer thighs. Each patient completed select scales from the BODY-Q within 1 week prior to initiating treatment. The bilateral outer thighs were treated with a combination of MFU-V (150 lines at focal depths of 3.0 and 4.5 mm per outer thigh) and CaHA (1.5 mL diluted 1:1 with 1.5 mL of 2% lidocaine solution per outer thigh). At 90 days post-treatment, participating women were asked to complete the same set of scales from the BODY-Q for a second time. Scores showed statistically significant improvement (Body Image,  $p < 0.01$ ; Appraisal of Excess Skin,  $p < 0.01$ ; Satisfaction



*Figure 1 Representative results at 90 days following treatment of skin laxity on the outer thighs with a combination of MFU-V and CaHA. Patient #1 is a 38-year-old woman with a BMI of 27 kg/m<sup>2</sup> (A1,A2) and Patient #2 is a 41-year-old woman with a BMI of 21 kg/m<sup>2</sup> (B1,B2). Both patients had undergone prior treatment to their thighs and buttocks using TS-GS and reported being satisfied with the complete release of their dimples but disappointed with the overall appearance of their outer thighs due to untreated skin laxity. Before (A1,B1) and after (A2,B2) photographs are shown.*

with Hips and Outer Thighs,  $p < 0.01$ ; Appearance-Related Psychosocial Distress,  $p < 0.01$ ). Typical patient results are shown photographically in **Figure 1**.<sup>7</sup>

Our findings suggest that a single treatment to the bilateral outer thighs with a combination of MFU-V and CaHA improves appearance and quality of life for patients with skin laxity affecting these areas. Based on the relative change of pre- vs. post-treatment BODY-Q scores, our patients reported feeling 54% more positive about their body image, 39% less bothered by their excess skin, 62% more satisfied with their hips and outer thighs, and 36% less distressed by their appearance.<sup>7</sup>

Data centered on results from patient-reported outcome measures is at the forefront of clinical outcomes research. A strength of our study was its prospective, pre-post design implementing the use of the BODY-Q, which offers a reliable, validated assessment of how patients feel and function from their perspective without interference or interpretation by the clinician.<sup>8-11</sup> These results may serve to help patients make

informed decisions when choosing to proceed with elective treatments to address skin laxity, especially in areas where multiple options exist. These results may also help to inform plastic surgeons and others who perform these procedures when deciding whether to integrate new treatment techniques and technologies into their practices.

### Disclosures

Dr. Casas is a consultant for Alastin, Evolus, Galderma and Merz. Dr. Casas is also a peer-to-peer trainer and is on the Speakers Bureau for Galderma and Merz. She receives honoraria and travel expenses. Dr. Smith and Mr. Sheehan declared no potential conflicts of interest with respect to the research, authorship, and publication of this article.

### Funding

This study was supported using funds provided by the Merz North America (Raleigh, NC, USA) Investigator-Initiated Studies Grant Program.

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# BREAST AUGMENTATION GLOBAL PERSPECTIVES



JAIME ANGER, MD, PHD  
BRAZIL



JOSÉ RIBAS MILANEZ CAMPOS, MD, PHD  
BRAZIL

## BREAST AUGMENTATION IN PECTUS EXCAVATUM PATIENTS

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**C**ongenital deformities of the chest wall involve various musculoskeletal defects that alter the symmetrical contour of the thorax. Pectus Excavatum (PE) is the term used when there is a depression of the sternum and costal cartilages in the anterior chest wall. Most of the PE females present hypomastia and breast asymmetry. From 1993 through 2019, we performed 27 female PE corrections,

and all had breast augmentation with silicone gel implants: 25 only breast augmentation and 2 breast augmentation and mastopexy.

### Pre-operative evaluation

The patient is submitted to thorax tomography exam, clinical and gynecologic examination. Thoracic measurements are done. Pre-operative photos are taken in a total of 14 captures.

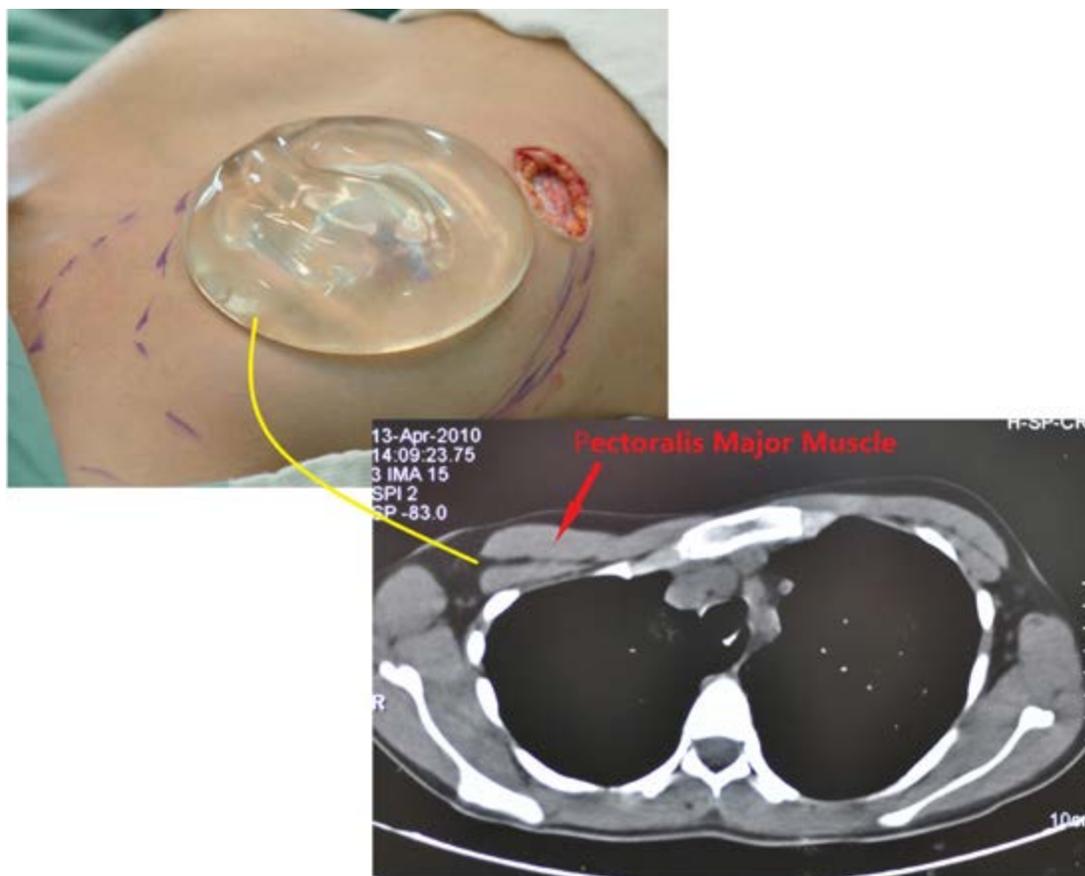


Figure 1

### Surgical technique

**Marks:** the borders of the depressed area, the vertical axillary anterior line, the desired base diameter of each breast and the ideal position of the nipple.

**Only breast augmentation:** the access is marked in the future inframammary sulcus, an average of 8 cm from the ideal position of the nipple. The extension of the incision is 4.5 cm.

**Mastopexy:** A vertical line from the center point of the clavicle, passing through the nipple ending in the inframammary fold line between the medial line of the abdomen and the anterior vertical axillar line (Millan technique). The surgical access is periareolar and vertical.

**Surgery:** the submuscular pocket is created, the limits are: 2 cm from the middle thoracic line and the anterior axillar line. The inferior border of the pectoralis major muscle (PMM)

is released from the rectus abdominis fascia avoiding any muscle damage: never cut. The inferior-medial release of the PMM depends on its anatomic position, because it varies in PE patients. A round tissue expander balloon with diameter similar to the desired breast is introduced and filled to find the ideal volume and dimensions, then it is exchanged with silicone gel breast molds. The mastopexy is performed with the mold inside. The gross asymmetry correction is based on implant dimensions, but the refinements are based on tissue remodeling. The pocket is drained with a 4.8 mm tubular suction drain; then the definitive smooth round silicone implant is placed. (Figure 1)

### Clinical experience

Aged 15 to 41 years old, 22 patients presented with medial sternal depression and 5 with lateral and medial depression. Follow up was from 6 months through 15 years. From the

group of 25, only breast augmentation, one was submitted to surgical revision to improve one side with asymmetry. No complications. In the 2 mastopexy patients, there were no complications.

The submuscular implant position in PE correction is mandatory as it allows us to camouflage most of the thoracic cage defects by achieving an external regular contour as an effect of the muscle and the implant contour. A smooth envelope and a malleable gel implant are important to adjust the implant content to the thoracic depression. This defect is always quite irregular. After the fulfillment of the depression, the expected

breast diameter must be preserved, which means sometimes the use of large volume implants. Therefore, it's important to have a stock of implants available in the operating room.

Surprisingly, in our cases it was not necessary to perform bone correction or to use solid silicone block simultaneously. Mostly in PE with medial sternum depression, the implant and the muscle contour provide good camouflage, but symmastia must be avoided by careful dissection of the inferior border of the PMM, made step-by-step, using multiple times the inflatable expander balloon to evaluate the exact limits of the dissection.



Figure 2: 19 years old, R lateral and medial PE. Implant: mentor © moderate round profile, smooth envelope, R - 450 cc, L - 300 cc. Surgery: 04/04/2012



Figure 3: 19 years old, R lateral and medial PE. Implant: mentor © moderate round profile, smooth envelope, R - 350 cc, L - 300 cc. Breast tissue removed: R - 22 gr., L - 66 gr. Surgery: 01/13/2014.

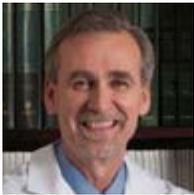
The authors have no financial interest in any product or company mentioned in this article.



Figure 4: 27 years old, R lateral and medial PE. Implant: mentor® moderate round profile, smooth envelope, R - 325 cc, L - 275 cc. Surgery: 01/12/2010.

# ADDRESSING ANIMATION DEFORMITY WITH BREAST AUGMENTATION

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RICHARD A. BAXTER, MD  
UNITED STATES

Most patients will have better long-term results with submuscular implant placement, but there are important trade-offs that have not always received enough attention. One of these is animation deformity, also known as dynamic breast deformity, which occurs to some degree in the majority of patients with submuscular implants using traditional techniques. Further, it has recently been shown that detachment of the costal origin of the pectoral muscle results in diminished functional strength. Pre-pectoral placement (subfascial or subglandular) avoids these problems but may be associated with increased implant visibility and rippling. One approach to balancing these problems is the split muscle plane, also known as the muscle-splitting biplane.<sup>3,4,5,6</sup> This approach preserves upper pole and medial implant coverage with muscle, while maintaining the inferolateral pectoral muscle attachments. I have routinely used this method in primary augmentation for the past 15 years, and find it useful for correction of animation deformity by converting from dual plane to split muscle.

## Description of technique

Pre-operative planning for implant size and profile are done as usual. I typically utilize an inframammary fold incision,

although it can be done via a periareolar approach, and has been reported with an axillary incision. The pre-pectoral fascia is elevated up to a line from where the origin transitions from the ribs to the sternum to the axilla. Rectus abdominis fascia may be included if the pectoral origin is cephalad to the inframammary fold, which is common. The muscle is then divided between the fibers, so that the superior portion of the pocket will be submuscular, and the inferolateral portion subfascial. The portion of the muscle that would be anterior to the implant in dual plane is retro-glandular where coverage is not as necessary aesthetically.

For conversion of dual plane to split muscle in cases of established window-shading animation deformity, if possible, it is advantageous to preserve the capsule. The inferolateral portion of the muscle is split as in primary augmentation, with the anterior capsule on the deep aspect of the muscle. This provides integrity for re-attachment of the muscle to the posterior capsule, which I do with a series of #2-0 sutures. Pocket revisions such as capsulorrhaphy are often required, as animation contributes to implant malposition. It is worth noting here that double bubble may be associated with animation deformity, as the detached muscle adheres



Figure 1A - pre-op VECTRA 3D

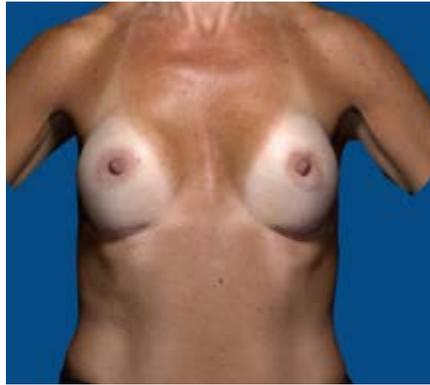


Figure 1B - post op, repose



Figure 1C - post op, flexing pectoral muscles.

to the capsule and exerts traction. The groove that this creates can be mistaken for the original inframammary fold, but pulls upward with pectoral muscle contraction, and is usually closer to the nipple.

### Discussion

Breast augmentation is a cosmetic procedure, and as such it may be argued that partial detachment of a major muscle,

with the potential for deformity and diminished functional strength, is not justified. While many patients do not have a significant issue because of this, those who do often feel frustrated that their concerns are not taken seriously. The split muscle plane is a useful option for minimization and correction of animation deformity with submuscular implant placement.

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## GLOBAL PERSPECTIVES: FUTURE THEMES

**September 2020: Otoplasty**  
**Deadline: July 15**

**December 2020: Rhinoplasty**  
**Deadline: October 15**

To contribute an article of 500-750 words, please forward it to [ISAPS@isaps.org](mailto:ISAPS@isaps.org) with the subject line: ISAPS NL Series. This should be a non-referenced opinion piece of several paragraphs giving your observations and perspectives on the topic. What do you do in your practice? What unique approaches do you use? What do you see your colleagues doing in your country or region? Photos are welcome, but must be high resolution JPG files attached, not embedded in your article. Please include photo captions.

*Articles must be submitted as WORD documents.*



MAZEN BDOUR, MD, FRCS (ED.)  
JORDAN

# DECISION-MAKING IN BREAST AUGMENTATION

---

**B**reast augmentation is a common surgical procedure that ought to be simple, but has been complicated by surgeons performing multiple surgeries and by the wide range of available implants.

The basic principle is to center the implant behind the existing nipple. Perioperative planning is important. You have to decide whether the patient is a good candidate for augmentation only or for both augmentation and mastopexy. This depends on the degree of ptosis.

**Regnault classified ptosis into three categories:**

- A. Nipple-areola complex (NAC) at the level of inframammary fold (IMF).
- B. NAC below the IMF, but above the lower pole of the breast.
- C. NAC at the lower pole of the breast and both are below the IMF.

There are cases where the NAC is above the IMF, but the glandular tissues are below it, which is called glandular ptosis. Another is where the NAC is above the IMF, but the breast is empty and the skin hangs down below the IMF and this is called hypoplastic breast. These two conditions represent pseudoptosis.

If the nipples are at the level of the IMF or above, only breast augmentation can be done. (Figure 1)

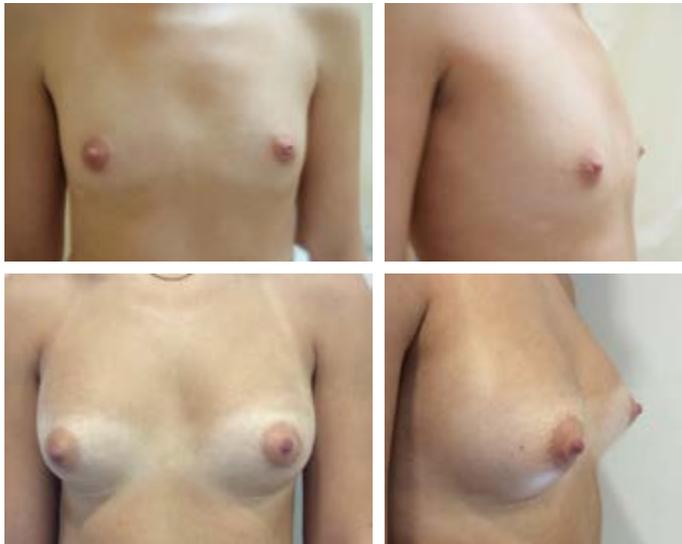


Figure 1 - Breast Augmentation only using 225cc subpectoral implants. Pre and 8 years postoperative view after having one child.

If the nipples are less than 2-3 cm below the IMF but above the lower pole of the breast, circumareolar mastopexy and augmentation can be done. (Figure 2)



Figure 2 - Circumareolar mastopexy and augmentation using 250cc retromammary implants. Pre and 8 years postoperative view.

If the nipples are more than 3 cm below the IMF and at the lower pole of the breast, circumvertical augmentation mastopexy is needed and I usually do it in one stage. (Figure 3)



Figure 3 - Circumvertical mastopexy and augmentation using 275cc retromammary implants. Pre and 3 years postoperative view.

The site of the breast on the chest wall is variable. The upper border of the breasts should not be higher than the line between the two armpits. If the breast sits on the chest wall close to this line, it is a high footprint breast. If the breast sits at the lower part of the chest wall, it is a low footprint and anything in between is a mid-footprint. (Figure 4)



Figure 4 - Types of breast footprint on the chest wall. High, Mid, and Low breasts footprints.

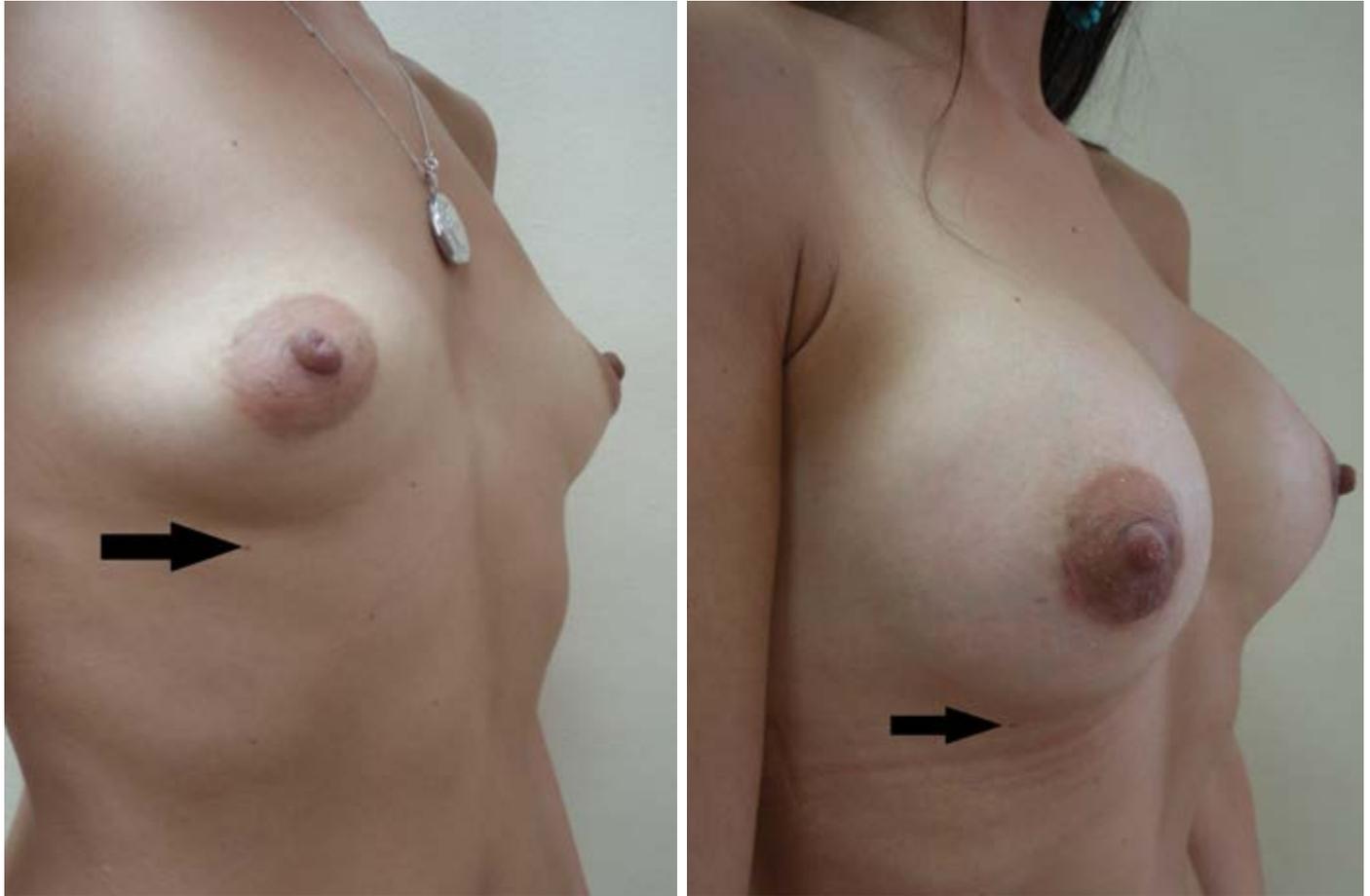


Figure 5 - Pre and postoperative view showing the descent of the IMF after breast augmentation. The IMF became close to the mole after breast augmentation as the arrows indicate.

Patients with low footprint would expect their breasts to be pushed up if having breast augmentation. Neither augmentation, nor mastopexy will change the footprint. Augmentation might raise the upper border of the breast one inch regardless of the size of the implant. Mastopexy will lift the nipples up, but won't raise the upper border of the breast unless implants are added.

Placement of the implants behind the breast tissue will have impact on the tissues in the long term. The soft tissue stretches and there will be glandular and pectoralis muscle hypotrophy. These will lead to skin excess and ptosis especially when using large volume implants i.e., more than 300cc. The IMF will descend in most of these cases in the long term even if you anchor it to the ribs. **(Figure 5)**

I noticed that the nipples stay in place if the center of the implants is behind the nipples, and you might be able to raise or lower the nipples if you place the implant below or above their equator, provided this doesn't cause distortion of the shape of the breasts. (Figure 6)



Figure 6 - Pre and 4 years postoperative views showing that the nipples and the IMFs became the same level using 300cc retromammary implants in type one patient.

I categorize my patients who need breast augmentation into two types. The first group consists of those with good skin quality and minimal breast tissue, whether you place the implants in the retromammary or subpectoral space, the shape of the breast would look natural in the long term if you use small size implants i.e., less than 300cc. (Figures 1 & 6) If the patient is intending to get pregnant, she should be warned that in some cases she might get unsightly results in the future if you place the implants in the subpectoral space due to the waterfall effect. (Figure 7)



Figure 7- Pre and 8 years postoperative view using 250cc subpectoral implants. Notice the descent of the breast tissues after having two children.

The second group consists of those patients with skin laxity and enough breast tissue mainly in the lower pole. When you place the implants in the retromammary space, the anterior surface of the capsule becomes adherent to glandular tissues and the implants become part of the breast tissue. When the breasts slide down with aging or pregnancy, the implants move with them as one unit, so there will be no distortion. (Figure 8)



Figure 8 - Pre and 12 years postoperative view using 250cc retromammary implants showing the natural aesthetic look of aging breasts.

When I have placed the implants in the subpectoral space in this group, I have noticed that there was distortion in the long term. The muscle will act as a barrier between the breast tissue and the implants. The breast will slide down over the muscle and hang down below its lower edge, while the implant will stay in its restricted space between the muscle and the ribs. (Figure 9)



Figure 9 - Pre and 8 years postoperative view using 250cc subpectoral implants showing the effect of aging on subpectoral implants in patient with skin laxity.

This will lead to obvious distortion, fullness in the upper pole and ptosis in the lower part.

My recommendations for patients who only need breast augmentation are as follows. For those with small size breasts and good skin quality, you can place the implants in the subpectoral or retromammary space depending on skin thickness. If your patient intends to get pregnant and doesn't have enough skin thickness, place the implants in the retromammary space and inject fat in the upper pole. For those with skin laxity and enough breast tissue, place your implants in the retromammary space.



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Figure 3 - muscle insertions section.

# WHY THE LATERAL INFRA-MAMMARY FOLD INCISION IN DUAL-PLANE BREAST AUGMENTATION TECHNIQUE IS MY BEST CHOICE

**B**reast augmentation is one of the most performed cosmetic surgeries according to the statistics of national and international scientific societies. The technical variations are especially about implant pocket placement relative to the pectoralis major muscle (PMM). The sub-muscular implant position choice has many advantages such as a lower rate of capsular retraction and especially a dramatic aesthetic advantage in the camouflage of the breast cleavage area.

On the other hand, the sub-muscular technique generates a higher rate of malposition complications. There is substantial scientific discussion about the sub or pre-pectoral implant pocket, but since the advent of the Dual-Plane technique described by J. B. Tebbets in the 2000s, this technique has become for most surgeons the technique of choice given the advantages of conservation of the sub-muscular choice and reduced risk of implant malposition.

The dual-plane technique could be performed via hemi-areolar incision or infra-mammary fold incision (IMFI) or much more rarely by axillary under endoscopy. Here again there is scientific

discussion between the choices. The major advantage of the IMFI is that the mammary gland is respected and there is no effraction of the galactophoric ducts.

The weakness of the IMFI is the scar visibility. Nevertheless, it is my technique of choice unless the scar localization is refused by the patient or the potential risk of hypertrophic or keloid scarring.

## Why I make it more lateral?

Referring to the history of mammoplasties, we often tried to remove the infra-mammary horizontal scar entirely or at least in its inner part (example, the J-scar as described in the remaining breast technique by J. P. Chavoin). The purpose is to reduce the scar visibility where the natural curve of the breast is more important. There is also an anatomical reason. Indeed, the PPM does not have insertions at its inferolateral border where it just covers the pectoralis minor muscle and the serratus anterior muscle. At this area, its edge can easily detach from these muscles and allows a very easy passage to the sub-pectoral space.

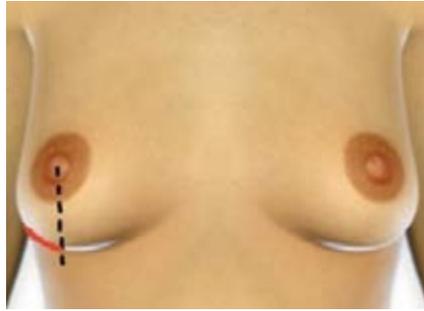


Figure 1: Incision marking (in red)

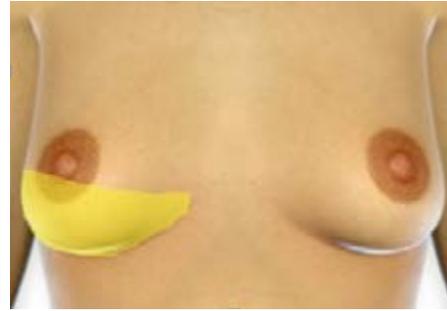


Figure 2: Sub-cutaneous undermining

## Technique

It is a less than 30-minute procedure. The preoperative marking places the incision lateral to a vertical line drawn from the nipple. (**Figure 1**) The width of the scar depends on the volume of the implant (4-6 cm). The horizontal position of the incision depends on the breast base and the implant diameter. If this diameter is higher than twice the distance between the nipple and the IMF, the incision and the surgical undermining should extend below the IMF. In this case the incision marking in relation to the nipple =  $(\text{Implant diameter}/2) + 1 \text{ cm}$ .

An infiltration with 1% lidocaine epinephrine solution is performed subdermal under the incision and deep subcutaneous of the lower pole of the breast and the lower and infero-internal insertions of the PMM.

Using a cautery, a limited undermining is carried out in a tunnel between IMF and the lower border of the PMM and its costal insertions. (**Figure 2**) It is performed in a deep plane at the level of the muscular fascia respecting the mammary gland as much as possible.

When the incision is lateral, the identification of the inferolateral edge of the PMM is better allowing an easy access to the acellular subpectoral space and the detachment is continued with the finger.

The prosthetic pocket is completed by the section of the lower and infero-internal insertions of the PMM. The section is easily made in a one-way direction when the incision is lateral. The muscle is trapped between two horizontally oriented retractors. The retractors point toward the sternum and are placed one subcutaneous and one submuscular. (**Figure 3**)

After careful hemostasis verification, the implant is inserted with the usual cautions: glove changing, avoid direct contact with the implant and pocket, and implant irrigation with povidone saline solution. According to the bleeding observed intraoperatively, drains can be placed. The closure is done at 3 levels: fascia for the IMF reconstruction, subcutaneous and cutaneous.

## Conclusion

Even though the surgical options are discussed with the patients, my advice and my first option is the use of the dual-plane technique with a lateral infra-mammary incision. Exceptions are made for patients with potential hypertrophic or keloid scarring. It is a quick and sure technique that offers good and stable results. (**Figures 4 and 5**)



Figure 4 - Case 1: pre-op and 9 months postoperative.



Figure 5 - Case 2: pre-op and 9 months postoperative.

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# STING TECHNIQUE: A NEW PROCEDURE FOR HYPOPLASTIC LOWER BREAST POLES

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## Introduction

According to recent ISAPS statistics, breast augmentation is still the most performed procedure in aesthetic plastic surgery.<sup>1</sup> In most cases, excellent and long-lasting results can be obtained using different techniques and different implants. Nevertheless, in some patients, when the small breast presents a hypoplastic lower pole, it is a great surgical challenge to obtain a low, round and regular inferior pole.

Unfortunately, these cases are not rare in daily practice. Their incidence and clinical features have been very well described by Klinger et al who also proposed a new classification.<sup>2</sup> Many techniques have been described in the literature to treat these patients such as the inferior rotation of glandular flaps or the releasing of the superficialis fascia followed by fat graft of the lower part of the breast. (**Figure 1**)<sup>3</sup> Recently, Dr. Gino Rigotti (Italy) described the “Rigottomy technique” which is a subcutaneous release (subcision) of contracted tissue with 18G needles creating multiple 2mm cavities to be filled with autologous fat.<sup>4</sup> The “sting technique” described in this article



*Figure 1 - Inferior transposition of three glandular flaps according to Puckett technique.*



Figure 2 - Subpectoral dual plane type 1 pocket is filled with gauzes soaked in an antibiotic solution. The sting technique is used to expand all the inferior breast pole, puncturing the skin and gland, where present.

is similar to the rigotomy, but differs in two relevant aspects: 1) it is a percutaneous and not subcutaneous release (subcision) of stenotic tissue (in this way not only the gland but also the skin envelope is expanded), and 2) fat is not injected at the end of the needle treatment.

### Surgical Technique

A peri-areolar or inframammary approach can be used to create a dual plane subpectoral pocket for a round, smooth implant. A key point is the lowering of the inframammary fold so that an adequate volume of the prosthesis is located below the nipple and a high riding deformity is avoided. The pocket is

completely filled with gauzes soaked in antibiotic solution and the skin to be expanded is punctured hundreds of times using an 18-gauge needle. (Figure 2) This area differs from patient to patient. In some patients, the punctures extend along all the inferior pole, from the nipple to the new inframammary fold (Figure 3). In other cases, it is limited to a wide cutaneous strip between the old and the new inframammary fold (Figure 4). This maneuver can also be performed asymmetrically if you need a different reshaping on the two breasts or it can be used to expand the lateral or the medial quadrants if indicated (Figure 5). Once the puncturing is complete, the gauzes are removed and substituted by the definitive implant.



Figure 3 - a,b,c,d,e: Frontal and oblique pre and post-operative view of a patient presenting breast hypoplasia with asymmetry of shape. Expansion of the lower pole on the left side. Subpectoral round implant 375 cc on both sides.



Figure 4 - a,b,c,d,e: Frontal and oblique pre and post-operative view of a patient presenting breast hypoplasia. Expansion of the lower poles. Subpectoral round implant 345 cc on both sides.



Figure 5 - a,b,c,d,e: Frontal and oblique pre and post-operative view of a patient presenting breast hypoplasia with asymmetry of shape and volume. Expansion of the lower stenotic pole on the right and of the medial quadrant of the left breast. Subpectoral round implant 325 right and 265 left.

## Conclusion

The use of a needle is well known and quite popular in plastic surgery. Needles are used to induce the production of collagen in the skin and rejuvenate it (dermaroller). In case of contracted tissue, wrinkles and scar tissue can be manipulated using a subcision technique as in the Rigotti technique. In this article, a new application of the needles is presented to treat the hypoplastic lower pole of breasts. The advantages of the sting technique (percutaneous needling) are two. The first is the creation of a full thickness 3-D volumetric expansion effect as for skin graft when they are meshed to treat burns or wounds; the second is an effective releasing not only of the glandular but also of the

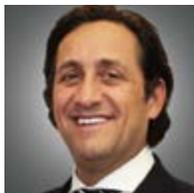
cutaneous restrictions. Complications are rare: subdermal blood collection or insufficient result can occur. Long lasting markings (more than 6 weeks) have been very rarely observed. The treatment consists of a daily application of hydroquinone 4% solution and leads to complete recovery in all the cases.

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# SUBFASCIAL BREAST AUGMENTATION

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## Introduction

Subfascial breast augmentation (SFBA) was initially described as a novel technique with promising benefits compared to either the submuscular or subglandular positioning of the implant.<sup>1</sup>

Advantages of the subfascial technique have been confirmed by several studies.<sup>2,3</sup> Advantages include: 1) avoidance of implant distortion or animation deformity (seen in the retro-muscular position), 2) addition of soft tissue between the implant and the skin (compared to the submammary approach), 3) preservation of Cooper's ligaments to minimize subsequent breast gland ptosis (seen in submammary approach), and 4) minimizing implant edge prominence (inherent to retro-glandular placement). In addition, the fascia layer provides additional support limiting potential rotation with shaped implants.

While morbidity is similar to that of other techniques, pain is decreased compared to the submuscular position of the implant. Patient satisfaction after subfascial breast augmentation has been reported to be higher.<sup>1,2</sup>

Because of the described benefits and high patient satisfaction, the authors began to perform this technique in 2006 and

have incorporated it in our practice. We now report on our clinical outcomes.

## Methods

Our retrospective study includes 127 patients who underwent bilateral breast augmentation between 2006 and 2019. Selection criteria included breast hypoplasia in absence of ptosis. Patients with comorbidities were not included. Preoperative evaluation was performed assessing with pinch test to determine adequate soft tissues coverage. Implant size was chosen according to the patient's anthropometry. All procedures were performed through an inframammary approach. Medium profile silicone implants were used in the majority of augmentation procedures. Average implant size was 300cc.

## Procedure

Our technique involved an inframammary fold incision performed with a 15-blade then deepened with electrocautery down to the pectoral fascia. Anterior pectoralis fascia was then elevated and dissected distal to proximal, lateral to medial. A lighted breast retractor was used to allow visualization. Dissection was performed preserving the parasternal perforators and sensory nerves. Hemostasis was achieved with insulated forceps. The

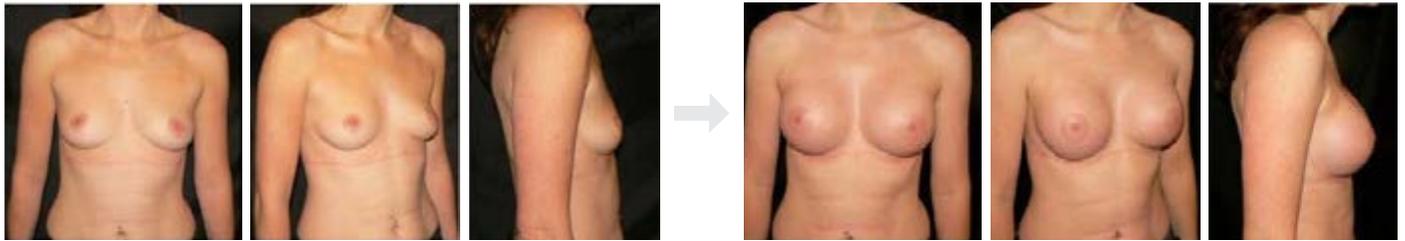


Figure 1- Preoperative and postoperative views of 27-year old female who underwent subfascial breast augmentation with 300 cc medium profile silicone implant.

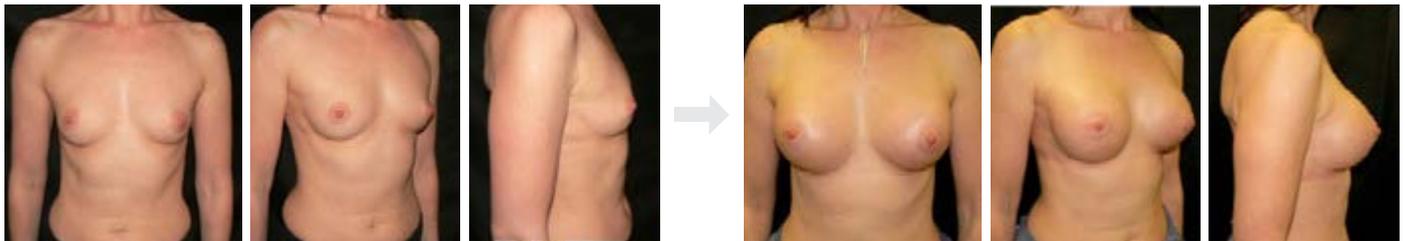


Figure 2 - Preoperative and postoperative views of 29-year old female who underwent subfascial breast augmentation with 340 cc medium profile silicone implant.

size of the pocket was precisely determined following the preserved fascial plane. To avoid implant contamination nipples shields, funnels, and antibiotic solution irrigation were used. After positioning the implant, incisions were closed in three layers and dressing applied. No drains were used. Rib nerve blocks were performed using Marcaine 0.5% plain. Surgeries were performed in outpatient settings. Patients were followed for one year. Capsular contracture and other implant related complications were evaluated.

## Results

The results of this procedure were consistent and predictable. The study demonstrated impalpability of the implant with smooth transition between implant and soft tissues. Capsular contracture rate was 1%. There were no hematomas or seromas, no infection, no evidence of animation deformity. Sensation to the NAC was preserved in all cases. The recovery period was brief. Ptosis of the breast parenchyma did not occur over time. Patient and surgeon satisfaction were both high.

## Discussion

Since its description, subfascial breast augmentation has been widely evaluated. The study aims were to better define the potential benefits of the technique when compared to the traditional subglandular or submuscular implant placement. Advantages, sensation changes and complications have been

analyzed.<sup>4,7</sup> Transient NAC sensory changes were experienced in 4% of cases, but only occurred when implant was over 102% the original breast size. Sensation recovered over time in almost all cases.<sup>5</sup> Rotation and movement of implant did not occur when the subfascial plane technique was used.<sup>8</sup> Although controversy about the superiority of the subfascial approach compared to the subglandular approach continues, more studies are showing benefits such as the lack of animation deformity, lack of palpability of the implant edges, the favorable gravitational pull of the breast and diminished capsular contracture.<sup>4,9-10</sup> In addition, the subfascial plane can still be used in cases of previously performed subglandular augmentation surgery.<sup>10</sup> Our study is congruent with other publications in terms of advantages with minimal complications of the subfascial plane approach. We also found less tendency of ptosis of the breast parenchyma over time.

The pectoral fascia anatomical landmarks and its importance to provide an extra layer of coverage to the implant has been defined by many authors.<sup>11-12</sup> The suspensory ligaments of Cooper contribute to breast position, shape and elasticity. These connective tissue bands attach to the deep pectoral fascia and pass through the superficial fascia and breast parenchyma before inserting to the dermis. The intact ligament suspends the breast from the clavicle and the underlying deep fascia of the upper chest, supporting the breast in its normal position,

Ying Yang technique subfascial augmentation mastopexy 300 cc



Figure 3 - 37-year old female pre-operative and post-operative pictures. Patient underwent subfascial breast augmentation with 300 cc medium profile silicone implants and Yin-Yang mastopexy. The laterally based inferior pole dermo-glandular flap is sutured to the new IMF and to the pectoral fascia and acts as a sling to support the inferior pole of the breast. The asterisk \* shows the pectoral fascia and the double asterisk \*\* the dermo-glandular flap.

maintaining its normal shape.<sup>13</sup> Without the internal support of these ligaments, the breast descends and causes breast ptosis. A subfascial dissection preserves the Cooper's ligaments and its role in supporting breast tissues. Therefore, ptosis of the gland in subfascial technique is less frequent compared to the subglandular technique. With the subglandular pocket, ptosis is analogous to a "rock in the sock phenomenon."

We used the subfascial placement of the implant also in combined mastopexy and augmentation, adding an inferior pole laterally based dermo-glandular flap sutured to the inferior border of

the pectoral fascia to support the lower pole.<sup>14-15</sup> Results were encouraging in terms of long-term support of the lower pole.

### Conclusions

Subfascial breast augmentation offers improved and predictable long-lasting aesthetic results. The subfascial technique is extremely versatile and may be used for primary breast augmentation, in patients requiring removal and replacement of the implants, or in combined augmentation mastopexy procedures. The subfascial approach provides the benefits of subglandular and submuscular placement without the disadvantages associated with each.

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# BREAST AUGMENTATION: MAKING THE INFRAMAMMARY CREASE GREAT AGAIN!

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Figure 1

It would be no exaggeration to say that the Inframammary crease (IMC) is the foundation on which the edifice of the breast mound is built. Breast base width and soft tissue thickness of the upper pole of the breast are important considerations for breast augmentation planning, but ignore the IMC at your own peril!

Three important aspects of IMC need consideration when planning breast augmentation:

Symmetry of location of IMC, nipple to IMC distance on stretch, and reinforcement of IMC at the time of closure.

It is important to remember that IMC of the left and right breast may not be at the same level on the chest. The best way to assess this is ideally by spirit level or if that is not available a ruler can be used. Either of the instruments is placed at the IMC parallel to the floor, and the level is transposed to the sternum in the midline as a small horizontal line. The same is repeated on the other side. These horizontal lines in the mid sternum give the accurate difference in level, if any, of the IMC of both breasts. For instance, in the patient in *Figure 1* there is a subtle difference in the IMC levels; the right side being lower than the left. However, the incision was taken

in the existing IMC, without lowering the left side, resulting in exaggeration of the asymmetry following augmentation.

The nipple to IMC distance on stretch is critical in accurately placing the inframammary incision for breast augmentation. This was emphasized by Patrick Mullucci in his seminal article.<sup>1</sup> He espoused the I-C=E principle, where I stands for implant dimension, C for capacity of breast tissue and E for excess skin required. In order to get the aesthetically ideal upper to lower pole ratio of 45:55, 55% of round implant should be below the nipple meridian. Therefore, in a round implant, the "I" (implant dimension) will be calculated as projection of the implant + 55% of the height of the implant. However, an anatomical implant being bottom heavy, only 50% of the implant needs to be below the nipple meridian. Therefore, in this case "I" (implant dimension) will be projection + 50% of the height of the implant. This gives an aesthetically pleasing tight convex lower pole with flat or slightly convex upper pole of the breast. The C (breast tissue capacity) is the distance from nipple to IMC on stretch. If the implant dimension is accommodated by the breast tissue capacity then no need to lower the IMC and the incision can be taken in the existing IMC. However, if the former exceeds the latter then the amount of lowering of the IMC is determined by the formula I-C=E and the incision is taken at that lower level. **Figure 2** shows the patient, operated elsewhere, where the IMC was not lowered, despite the implant dimension exceeding the soft tissue capacity, resulting in an unsatisfactory outcome. Smooth implants are gaining in popularity because of the association of BIA-ALCL with textured implants, but the smooth implant, as opposed to the textured one, is unable to grip the surrounding tissue and therefore tends to glide caudally under the influence of gravity. This can easily disrupt the IMC, especially if it is weak.



Figure 2

Therefore, it is prudent that the IMC, at the time of closure, is fixed along the incision by suturing the breast fascia to the pectoralis fascia. This can be done by interrupted polyglactin sutures or better still with continuous barbed polydioxanone sutures.

In conclusion, if the IMC also gets its due attention during planning and execution of breast augmentation, then a satisfactory outcome is assured.

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# PERI-AREOLAR BREAST AUGMENTATION

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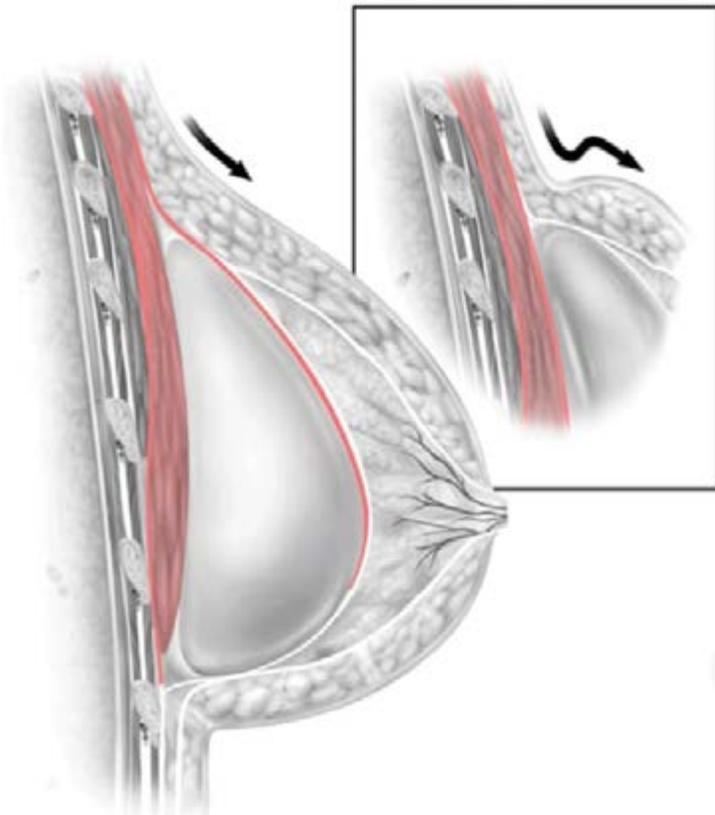


Figure 1 - Advantage of subfascial placement of implant, giving a smoother transition to the upper edge of the implant, unlike the subglandular position. Graphic credit: DeLorenzi, Claudio. Periareolar approach. Breast Augmentation. McGraw-Hill Plastic Surgery Atlas. 2011.

**B**reast enlargement is the commonest aesthetic surgery procedure in the world today. Global statistics of ISAPS reveal that in 2018, more than 18,00,000 breast enhancement procedures were done all over the world. The two commonest routes for breast augmentation are via the periareolar and inframammary incision.

The goal of breast augmentation has remained the same over the last 45 years since it was first described by Cronin and Gerow.<sup>1</sup> The ultimate aim is to enlarge breasts which look like real breasts in appearance, form and function, both at rest and with movement and produce an undetectable result with no obvious signs of surgical enhancement and scars not being clearly evident.

In developing countries, unlike the west, scars on the breast are disliked and the incidence of pigmented and hypertrophic scars is much higher in the darker skin. Females, especially unmarried ones, are wary of any surgical scars on the breasts. This makes the periareolar incision a commoner choice in the Asian subcontinent and middle-east.

## Materials and methods

The choice of the pocket is important, but the author prefers placing the implant in the subfacial plane, which gives a better covering to the superior edge of the implant and makes it more natural, combining the advantages of both the sub-

glandular and sub-muscular placement. A minimum of 1-inch thickness of breast tissue at the upper pole of the breast is necessary for a sub-fascial pocket.<sup>2</sup> If anything less, it is recommended placing the implant in the sub-muscular plane. Also, whilst marking the pocket it is important to note that the uppermost border of the breast is usually never above a line drawn across the apex of the anterior axillary fold and this should not be transgressed, as an implant placed above this does not look natural. If the areola is less than 3 cm in diameter, the candidate may not be a good candidate for periareolar augmentation, and a different route should be preferred.

Marking is done with the patient in an upright position. The site of the incision must be accurately placed. Marking the incision at the junction of the colour change of the skin is very important to keep it well hidden for even an error of 1.5 mm will be evident when the wound has healed. It is best to use loupe magnification whilst marking, and it should be done preferably by dots rather than a line for the surgeon might err in incising along the upper or lower border of the line and stray away from the exact location on the skin.

After proper dressing and draping, injection of Adrenaline with 2% Lignocaine is infiltrated into the proposed incision, usually in the inferior half of the areola for 4.5 to 5 centimetres. The incision may extend from the 3 o'clock to the 9 o'clock position if required. The tissue just below the nipple areola is pinched with the non-dominant hand and the tissue tension helps in defining the precise division of the skin at the marked line. Grasping the tissue under tension prevents sliding of the tissue planes below. An incision is made with scalpel blade into the dermis after which the dissection is continued using cautery.

Some surgeons prefer dissecting in the subcutaneous plane of Scarpa's fascia up to the lower border of the breast before making the pocket. The author usually cuts through the breast tissue parallel to the lactiferous ducts till the pectoral fascia is visible. Studies have shown no difference in rate of infection

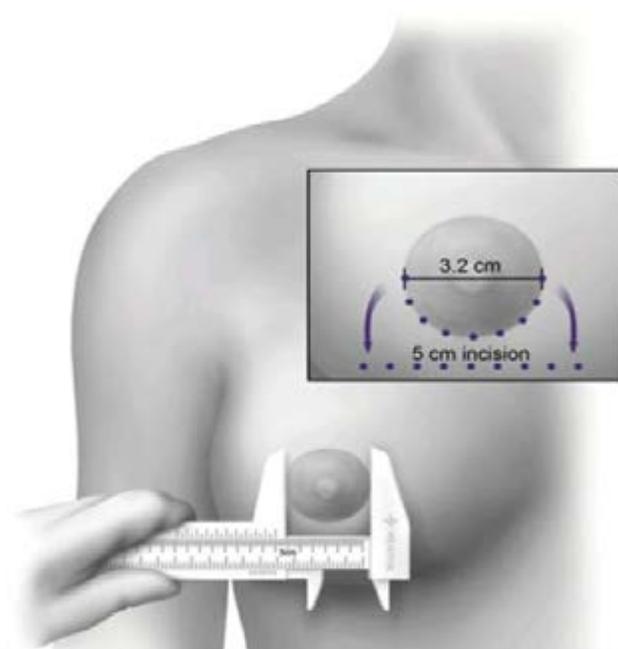


Figure 2 - Marking of the incision by dots on the areola. Graphic credit: DeLorenzi, Claudio. Periareolar approach. Breast Augmentation. McGraw-Hill Plastic Surgery Atlas. 2011.

due to contamination between incision through the breast gland and other incisions. A fine nick is made in the pectoral fascia and a pocket is developed deep to the fascia, but superficial to the muscle fibres. The fascia is usually thicker and more robust at and above the level of the nipple but thins out in inferior pole and dissection here may be difficult. An adequate pocket according to the pre-planned dimensions is created and proper hemostasis is done. The fibre optic illuminated retractor is very useful and long armed insulated bipolar diathermy forceps help in achieving hemostasis without any injury to the adjacent tissue. The cavity is irrigated thoroughly, and may be packed with sterile mops before dissection on the opposite side is done.

When both pockets have been created, the side dissected earlier is thoroughly examined to eliminate any bleeding points or collection and also ensure that it is adequate in all directions and dimensions. The pocket is irrigated with Betadine solution (5% Povidine iodine) which is the author's choice. After inspecting the opposite side, gloves are changed which are powder free. The area is prepped again and is ready for inserting the implants. The earlier dissected pocket is inspected and all residual Betadine is cleaned. No bleeding points or collection should be present and any bits of cotton fibre should be carefully checked and removed for these add to chances of capsular contracture.



Figure 3 - Subfascial pocket after dissection with the visible bare muscle.



Figure 4 - Implant after placement via periareolar incision.

The implant packet is opened and checked for integrity and size before insertion. The assistant holds retractors on both margins and the implant is handled only by the surgeon who inserts it inside the pocket using rotational movement from 3 o'clock towards 12 o'clock of the implant. It gradually enters the pocket and usually takes 20 to 30 seconds to insert an implant on any side. The implant must be checked to be free of wrinkles and the pocket good enough to accommodate the properly oriented implant.

Initially, limited dissection of the pocket is done on the lateral side. Its lateral extent can be easily extended later if the pocket is found to be inadequate. The incision is temporarily packed with Betadine soaked gauze whilst the implant on the opposite side is inserted. Prior to closure, with the help of the anaesthetist, it is a good practice to get the patient to sit up in an upright sitting position so that the shape and symmetry of the breasts can be assessed from the foot end of the table and any abnormality in shape can be addressed immediately, since they will not resolve spontaneously after surgery.

Closure begins by holding the deeper tissue with six small curved mosquito forceps. Sutures are placed with 3-0 Prolene to give a water tight closure in the deepest layer. A specially designed tongue depressor like instrument, designed by my colleague Dr. S. S. Chatterjee is useful to depress the implant peeping out below and avoid any inadvertent bite into the implant.

Subsequently, a second layer of interrupted sutures with 3-0 Prolene is given to oppose the breast tissue. The author has been using this for the last five years to prevent herniation of the implant through the breast tissue with time. The superficial

layers are closed by interrupted stitches of 3-0 Monocryl in the subcutaneous plane followed by a running subcuticular 3-0 Monocryl to close the incision.

Dressing is applied on both the incisions and an elastoplast figure of eight bandages is used to keep both the breasts in place and minimise movement in the initial postoperative period. The patient is discharged on the same day, and asked to avoid sleeping on the sides, and is given antibiotics, usually amoxicillin with clavulanic acid, for ten days and some pain killers to keep her comfortable. The bandages are opened on the fifth day and are replaced by smaller bandages, which can be waterproof, to allow the patient to have a shower. The patient is advised to wear a cotton bra under a snugly fitting sports bra which is worn around the clock for the first two months. The patient is advised to minimise movement of the arms in the first three weeks and avoid any strenuous activity or raising the arms above the shoulder to latch a door or do anything similar. They are also advised to wear front open clothes to avoid raising their arms. Postoperatively, massaging of the breasts is done from the end of the third week for ten minutes twice daily by the patient herself to allow good movement of the implants and also keep them soft and lower chances of capsular contracture. The patient is also advised to sleep on the chest for two hours daily which can be at broken intervals.

412 patients underwent breast augmentation via a periareolar incision from Jan 2012 till date. Healing was satisfactory in most cases, with delayed healing noticed in patients where the NAC was small and the incision less than 4cm with an implant bigger than 300 cc introduced. Secondary sutures



Figure 5 - Dr. S. S. Chatterjee's tongue shaped retractor.



Figure 6 - Invisible periareolar scar 3 years after breast augmentation.

were needed in 13 cases, 11 of which were transgenders with a comparatively small NAC.

More than 90% of patients were very happy with the scar. A few had their surgery before their wedding, and the scar was not detected by the husband even after four years of their marriage. Lactation was normal in all women who had children subsequent to breast augmentation. Sensibility was not altered after the procedure and no patient complained about it.<sup>3, 4, 5</sup>

Only one transgender patient had Grade 4 capsular contracture after the procedure and had healing problems with discharge from the incision site. A few patients thought their breast felt a little firm, but no capsular contracture beyond Grade 2 was seen. Almost all patients were very happy with the feel and shape of the breasts.

A visible scar on the breast is a big taboo, particularly in the Indian society, and in Asia. This is even more in unmarried girls for men are apprehensive about marrying someone who has had breast surgery. The inframammary scar is always visible, however well it may be done. The periareolar incision, if given accurately, usually yields almost imperceptible scars. Also, the clothing and lingerie used by the society here makes the periareolar incision a favoured choice for many patients.



Figure 7a - Patient before breast augmentation.

Figure 7b - Periareolar scar 2 years after of breast augmentation.



Figure 8A - Periareolar scar 2 years after breast augmentation (Right breast).

Figure 8B - Periareolar scar 2 years after breast augmentation (Left breast).

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# GLOBAL PERSPECTIVES: BREAST AUGMENTATION

## BREAST AUGMENTATION WITH SMOOTH ROUND SILICONE IMPLANTS

### Summary

- Round silicone implants are the most commonly used in the United States.
- 5th generation round silicone devices, currently used in the market, are designed with thinner shells and a more cohesive gel.
- Round implants are symmetrical in height and width.
- Round implants have varying projections for a given volume, typically designated as low, moderate and high profile. The more the projection increases for a fixed volume, the more the width of the device decreases. (*Figure 1*)
- The author prefers the inframammary approach with placement of a smooth round implant either in a partial subpectoral plane and dual plane creation, or in a subfascial plane and describe it in detail in this article.

### Patient History and Physical Findings

Goals and expectations of the patient are discussed in detail during consultation.

A thorough personal and family history is performed focusing on:

1. History of any breast disease and breast cancer.
2. History of pregnancy.
3. Desire for future pregnancy.
4. Mammogram: Screening mammogram is obtained for any patient over 35 years old.

Physical examination focuses on:

1. Current height and weight.
2. Current breast size and desired breast size.
3. Palpation for any breast masses, lymph nodes, or nipple discharge.
4. Observation of breast ptosis and degree of ptosis, and the need for synchronous mastopexy.
5. Observation of chest wall and breast asymmetries, such as differences in inframammary fold height, nipple areola complex (NAC) height, breast volume, and breast shape.



Figure 1 - Lateral view of a moderate projection (left), full projection (center) and extra full projection (right) 400 ml smooth round silicone gel implant. As the projection increases, the height and the width of the device decrease.

### Imaging

The author uses the VECTRA 3D imaging and simulation system for all patients interested in breast augmentation. The device takes a 3-dimensional photograph that can then be visualized in the monitor, with the addition of breast measurements.

(Figure 2)

Using different implant shapes and sizes, a simulated postsurgical result is produced, allowing the patients to have a visual image of the outcome. (Figure 3)



Figure 3 - Simulated images obtained using a 485ml smooth round implant with full projection. Frontal, lateral, and oblique views of a 26-year-old female using the VECTRA 3D imaging device.

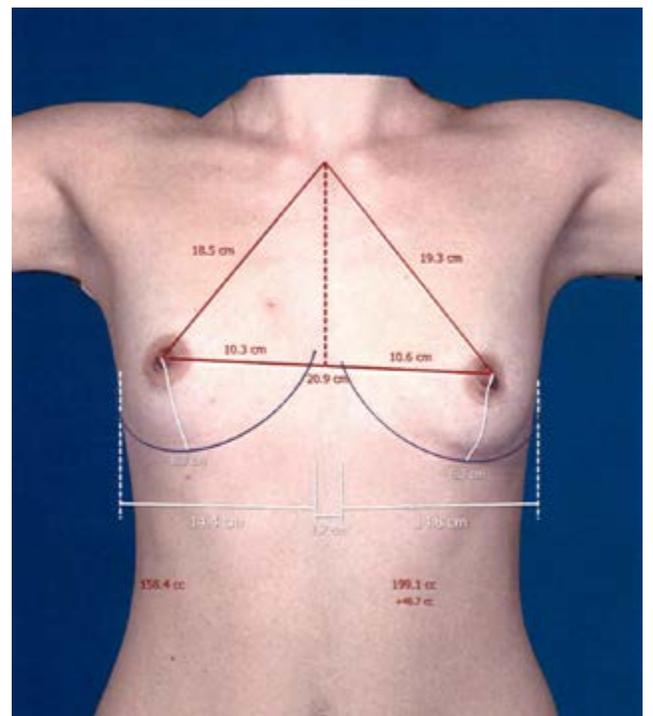


Figure 2- 3-dimensional photograph of a 26-year-old female using the VECTRA 3D imaging device. Breast measurements are shown.

## Technique

### **Inframammary approach with a smooth round silicone implant, partial subpectoral placement and dual plane creation.**

- Tegaderm is placed on top of the Nipple-Areola complex (NAC).
- Local anesthesia containing a mix of lidocaine and Marcaine with epinephrine is injected into the marked incision and as a breast block.
- The inframammary incision is made sharply through the dermis and the superficial layer of the fat until Scarpa's fascia is encountered.
- A double skin hook is placed followed by an Army Navy retractor and dissection is continued with bovie electrocautery cephalad with care not to violate Scarpa's fascia.
- The breast tissue is divided and the pectoralis muscle fascia is identified.
- Suprafascial dissection is carried accordingly to create a dual plane dissection.
- After dual plane dissection, the pectoralis muscle is grasped and divided till the areolar space under the muscle is identified. A lighted retractor is then placed below the pectoralis major muscle and strong upward traction is placed so as to separate the pectoralis major from the pectoralis minor muscle.
- Pocket dissection is performed with the monopolar electrocautery and there is no use of blunt dissection.
- Submuscular dissection proceeds from medial to lateral in a clockwise fashion for the left breast and in an anticlockwise fashion for the right breast, until the pocket is of appropriate size. Care is taken to avoid any contact with the ribs so as to decrease postoperative pain.
- Care is taken to disinsert the medial origin of the pectoralis major muscle so as to achieve adequate expansion of the lower pole.
- Meticulous hemostasis is achieved.
- Tester gel implants are placed and the patient is placed in the upright seated position. If there are areas for additional dissection, these are marked.
- The pockets are irrigated with triple antibiotic solution.



Figure 4 - The no touch technique is used. The implant is transferred to the Keller funnel without being touched.

- The formal implants are then placed in a sterile manner using the no-touch technique. The implant is transferred to the Keller funnel avoiding any contact with the operating table or the surgeon's gloves. (**Figure 4**) A Deaver retractor is used by the assistant to facilitate placement of the implant.
- Closure is performed in 3 layers:
  1. 2-O Vicryl is used for the breast parenchyma.
  2. 4-O Monocryl for interrupted deep dermal sutures, followed by a running subcuticular 4-O Monocryl suture.

### **Inframammary Approach with a Smooth Round Silicone Implant, Subfascial Placement**

The technique is similar to the partial subpectoral technique in terms of marking, incision placement, implant insertion, and closure. The difference pertains to the pocket dissection. The pocket is created between the anterior fascia of the pectoralis major muscle and the muscle itself, providing an additional layer of coverage for the implant. The pocket is dissected laterally to the lateral edge of the pectoralis major muscle.

PEARLS AND PITFALLS	
HEMOSTASIS	Meticulous hemostasis should be achieved to avoid postoperative hematoma and an inflammatory response that may lead to capsular contracture
PECTORALIS MUSCLE	The most medial fibers of the pectoralis major muscle should be released to avoid a constricted lower pole
DUAL PLANE	Advantage of increasing implant and breast parenchyma interface, expanding the lower pole, and allowing for changes of the nipple-areolar complex
IMPLANT PLACEMENT	The no touch technique is used at all times, to avoid implant contamination
INCISION PLACEMENT	The inframammary incision should be placed slightly lower in regards to the inframammary fold, to avoid a high rising scar onto the breast
DISSECTION	Dissection should be accurate to accommodate the implant and over dissection should be avoided at all times
RIBS	Contact with the ribs should be avoided, so as to decrease postoperative pain

### Outcomes

Clinical examples of patients with Inframammary breast augmentation with smooth round silicone implants are shown. (Figures 5,6)

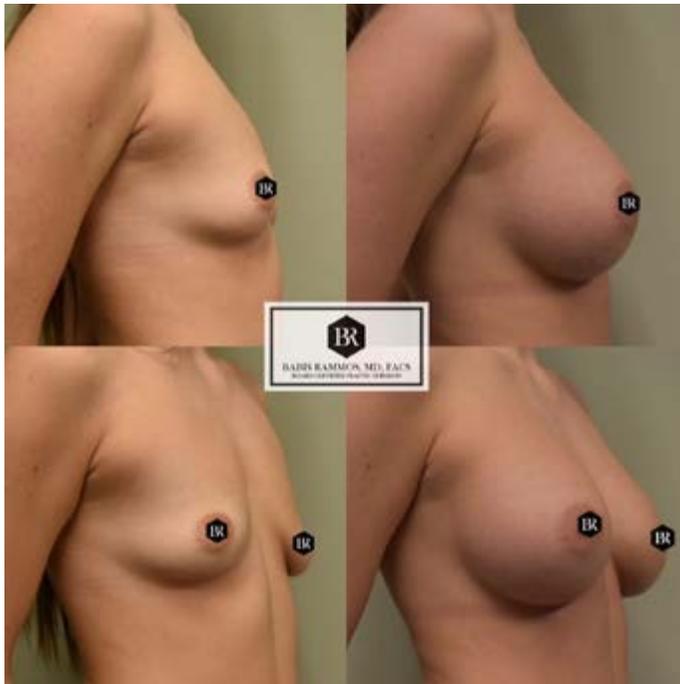


Figure 5 - Preoperative lateral and oblique views of a 26-year-old female with micromastia. Images obtained 12 months follow up after a submuscular breast augmentation with a 450 ml smooth round implant with moderate projection.

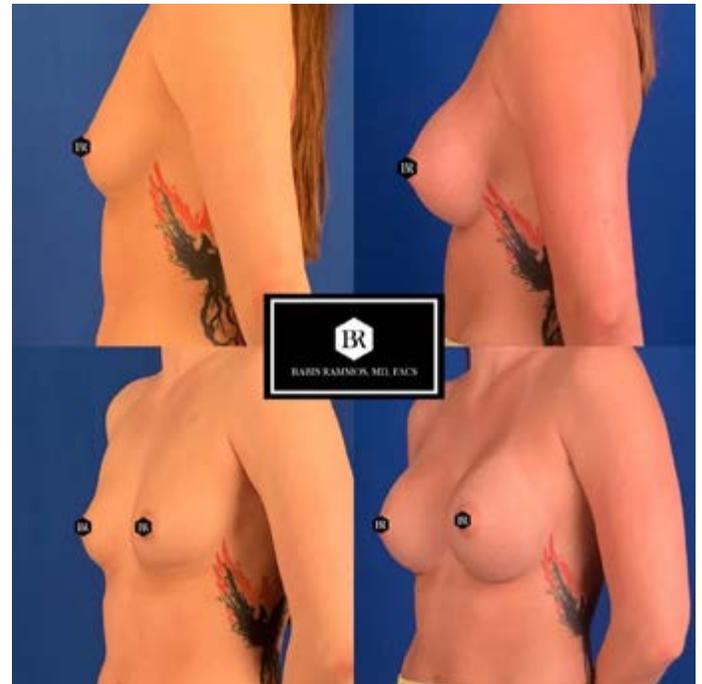


Figure 6 - Preoperative lateral and oblique views of a 29-year-old female with micromastia. Images obtained at 6 months follow up after submuscular breast augmentation with a 415 ml smooth round implant with moderate projection.

The author has no financial interest in any company or product mentioned in this article.

# CAPSULAR GRAFT FOR SECONDARY BREAST AUGMENTATION

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## Introduction

A breast implant capsule forms as a physiological response to the foreign material and consists of fibrous connective tissue, mainly fibroblasts and collagen fibrils.<sup>2</sup> Previous reports have described their application as grafts or flaps<sup>3,4</sup> considered as good material for reinforcement, especially to address breast implant-related problems in breast reconstruction.<sup>1</sup>

The authors present a series of cases where a capsule was applied as a graft in order to substitute mesh or Acellular Dermal Matrix (ADM) for secondary aesthetic breast procedures where some situations become a complex and challenging scenario.

## Patients

From June 2018 to January 2020, nine patients who underwent revisionary breast surgery with implants were included in this study. Inclusion criteria were as follows: thin tissue coverage, exchange of the implant by patient's request (older generation implants), malposition of implants, capsular contracture and rippling. Patients affected by late or recurrent seroma and infection of the breast pocket were excluded. Intraoperative exclusion criteria applied for capsules with these characteristics:



Figure 1 - Capsulectomy

thick, fibrous, calcifications, granulomas and identified rupture of the implant or presence of seroma. Only secondary aesthetic breast augmentations were included in this study.

## Surgical Technique

In all the patients, total capsulectomy was performed and a rigorous hemostasis was conducted. (**Figure 1**) Defatted capsule reverting and immersed in saline solution with a double antibiotic solution (1g cefazolin + 80mg gentamicin). The

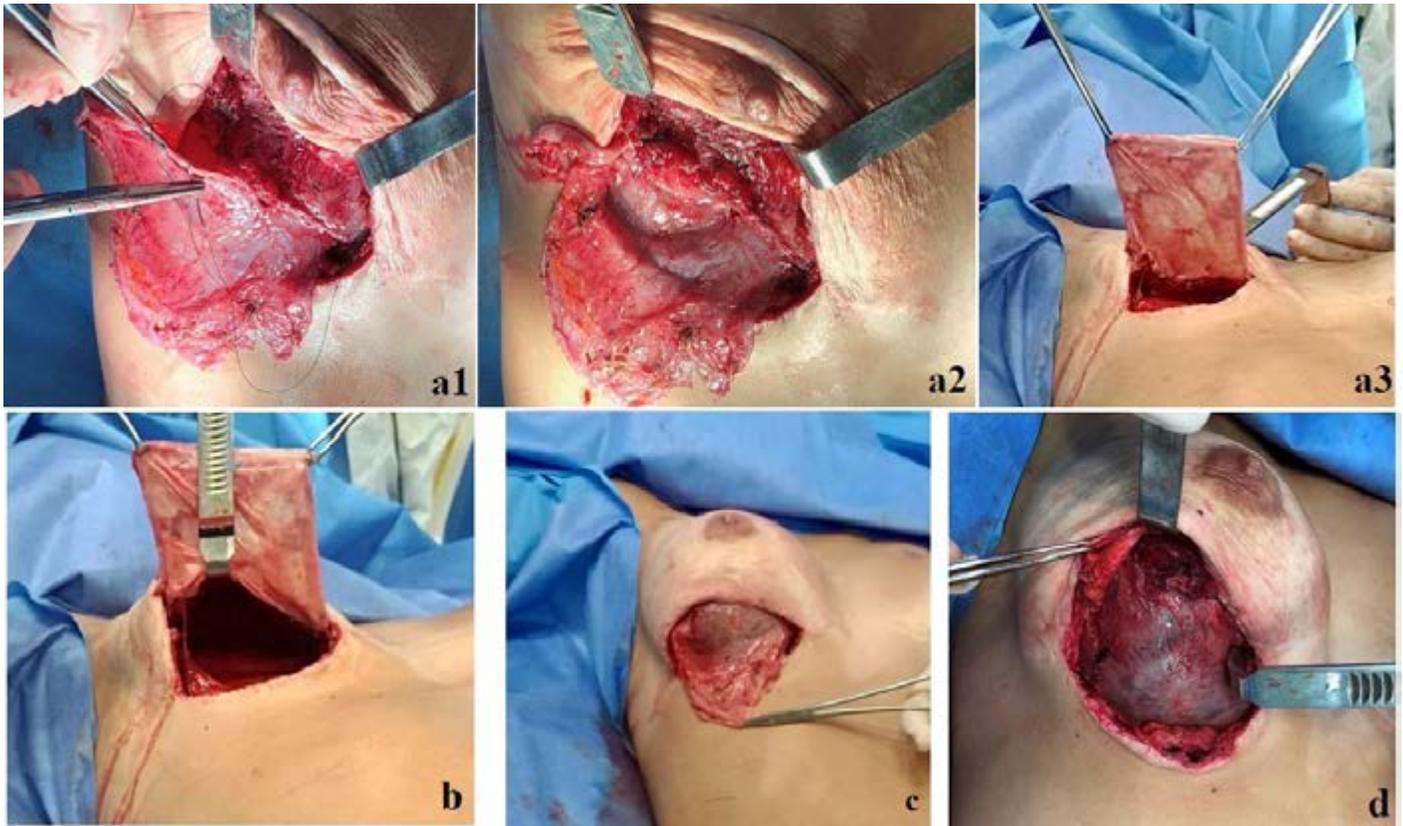


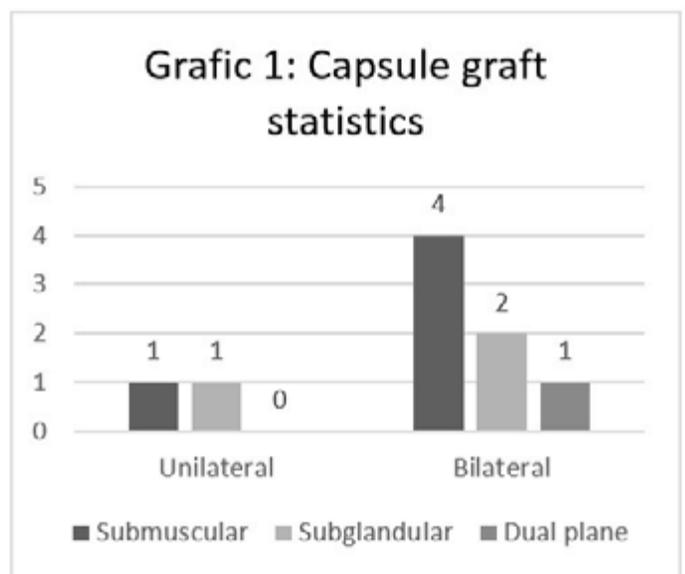
Figure 2 - Intraoperative view. (a1/a2/a3) Capsule suture. (b) Newly created breast pocket. (c) Capsule reinforcement view with implant replacement. (d) Postoperative immediate view with closed pocket.

new breast pocket was washed with saline solution, hydrogen peroxide and the same antibiotic solution.

The authors, in five cases, replaced the implant's plane from subglandular to submuscular due to thinning of the tissue, a piece of capsule graft was sutured on edges of the pectoral major muscle with absorbable suture (VylcrilR 3-0) to expand the breast pocket, with the inner face of the capsule in direct contact with the implant. (Figure 2) In three cases where the implant was placed in the subglandular plane because there was appropriate thickness of the tissue, the graft was proposed for reinforcement in the prevention of deformities.

### Results

Our series consisted of 9 patients, 16 breasts, 7 bilateral and 2 unilateral cases. Mean age was 43 years (range, 25-64 years). All cases were summarized in **Graphic 1**. In one case where the implant was exposed, the authors harvested the capsule graft from the contralateral breast at the sub-glandular plane. All the harvested capsular grafts were viable to obtain complete coverage of the breast contour deformities.



**Table 1: Principles for the ideal internal bra material**

**Principles**

No interference with mammography

Biocompatible

Bio-induced: template for long-term host tissues replacement

Maintains strength until host tissue replacement

Handling characteristics: easy to template and suture

Easily stored and ready-to-use

Available in a range of sizes

Affordable

Natural feel

*Baxter RA. Internal bra: a unifying solution for reconstructive and aesthetic breast surgery issues. [Plast Aesthet Res 2016;3:3-7](#)*

The follow-up period ranged from 6 months to 2 years in which we observed complete integration of the graft and better coverage of the implant, corrections of retractions and rippling, as well as tissue expansion in the subpectoral plane when the change of plane was performed. No complications or new episodes of contracture were observed and an aesthetic improvement and higher degree of satisfaction was reported by the patients. (**Figure 3**)

### Discussion

Breast implants are one of the top five procedures in plastic surgery; however, due to alterations such as capsular contracture, rippling, decrease of subcutaneous tissue thickness, rupture, malposition, among others, many cases will require plane and implant exchange.

When replacement from the sub-glandular to submuscular plane is required, muscular reinforcement is mandatory. During the surgical application of this practice, it is important to take advantage of the breast pocket concept by adapting the skin envelope of the breast in order to reshape it.<sup>5</sup>

The capsule graft seems to be an excellent coverage reinforcement mechanism in aesthetic breast revision using implants. Because

the capsule is autologous tissue, there is no additional cost in contrast to the use of ADM or synthetic meshes.<sup>6</sup> Thus, the capsule graft does not generate rejection, it fully integrates with the patient's tissue, in addition to providing reinforcement of the structures in the above-mentioned tissues.

Autologous material such as capsule graft or flaps and fat grafting can be useful in combination for recreating a stable breast implant pocket<sup>7,8</sup> and still meet the criteria of suitable materials. (**Table 1**)<sup>5</sup>

### Conclusion

The use of capsule graft represents a reliable and cheaper option to treat poor tissue coverage and breast contour deformities in the aesthetic setting. This innovative approach can be considered as an immediate solution to a challenging situation. The technique proposed by the authors provides stable results as shown by a low rate of complications with the existing follow up proving to be safe and effective with good outcomes and high patient satisfaction. However, a longer follow-up period and a more consistent number of cases would be useful to evaluate long-term stability of the grafts and their capsule diseases.

*DECLARATION OF CONFLICTS OF INTERESTS - The authors declare no potential conflicts of interest with respect to the research, authorship, and/or publication of this article. FUNDING - The authors received no financial support for the research, authorship, and/or publication of this article. LEVEL OF EVIDENCE: V*

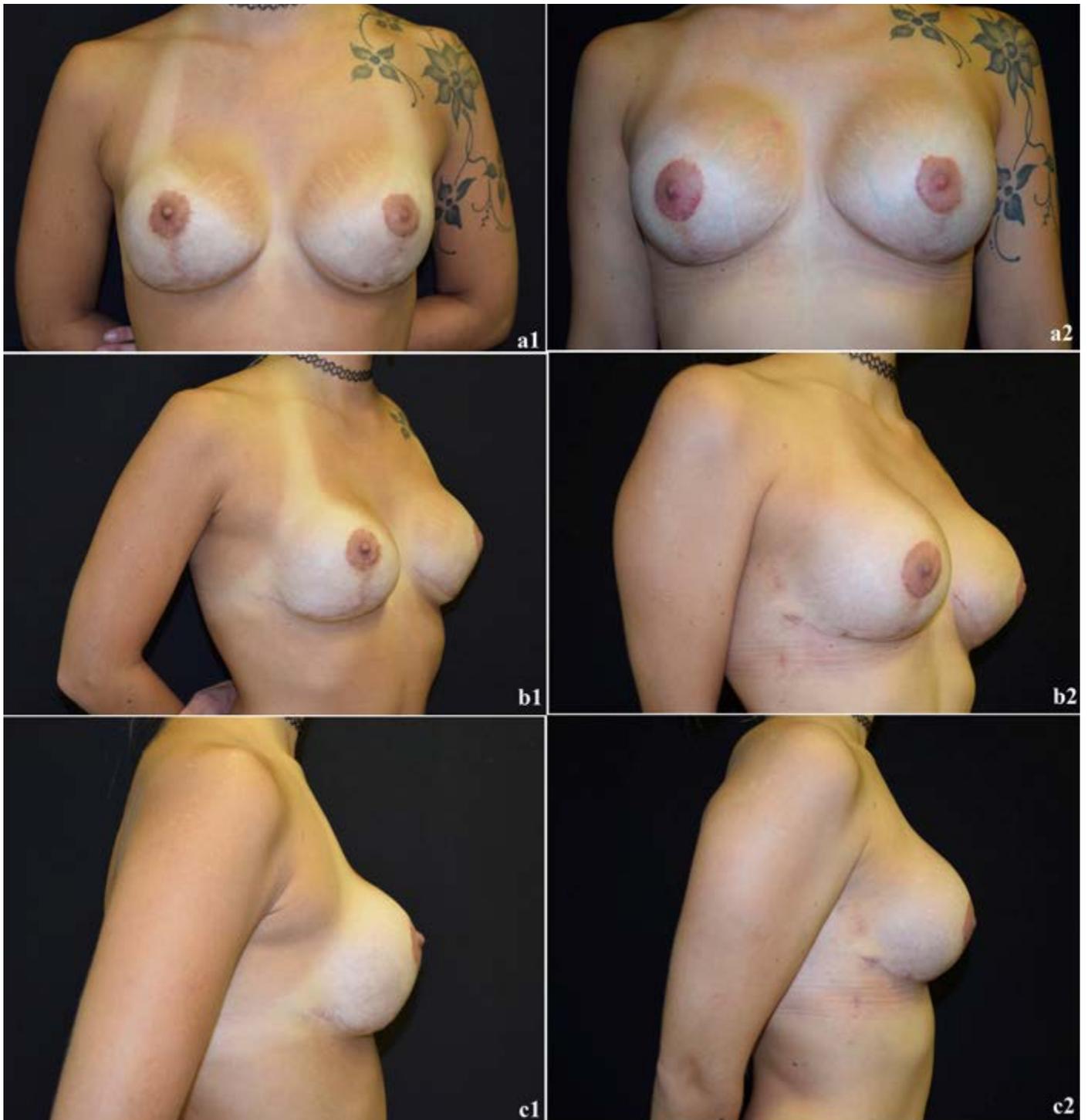


Figure 3 - Preoperative and postoperative of breast revision with capsule graft. (a1/a2) Pre and postoperative front view. (b1/b2) Pre and postoperative oblique view. (c1/c2) Pre and postoperative profile view.

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# A NOVEL APPROACH TO DUAL PLANE BREAST AUGMENTATION: THE VERTICAL PLANE

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## Introduction

**B**reast augmentation is still the most common procedure performed by plastic surgeons worldwide and, according to the ISAPS Global Survey statistics for 2018<sup>1</sup>, it is 17.6 % of total procedures.

We have more pre-operative planning with implant options, different marking sets of the implant footprint, and different types of pockets (sub-glandular, sub-fascial, fully sub-muscular, partial retro-pectoral and the Tebbetts<sup>2</sup> variants of dual plane). Nowadays, most surgeons prefer the sub-glandular or dual plane pocket according to common guidelines and their own preferences. This article focuses on a less invasive procedure compared to the well-known dual plane technique that I introduced in 2004 in my practice and progressively expanded. I named it the vertical plane and the first presentation was at the 24th Biennial Congress in Miami Beach in 2018.<sup>3</sup>

## Surgical anatomy and blood flow assumptions

Differently from the dual plane procedure, there is no detachment of the gland from the pectoralis major muscle and no muscle cranial displacement occurs here. In addition, the parenchyma blood flow is fully preserved compared to sub-fascial and sub-glandular dissection planes. Khan<sup>4</sup> highlights

the preservation of the intact muscle and breast interface in muscle-splitting augmentation that can leave the muscle perforator system and maintains the supply for breast at its maximum. Degloving of the breast from the pectoralis muscle severs these perforators and negates this advantage. The issue is not the breast flow balanced by the subcutaneous vascular system, but the absent muscle perforator vessels at long term with effect on the breast parenchyma atrophy. The technique for a new pocket here presented spares all the flow of deep perforators permitting faster and less invasive dissection compared with the known techniques.

Pelle-Ceravolo<sup>5</sup> described a classification of animation deformity during active muscular contraction and a procedure of mid-dissection of the muscle. My pocket is less invasive, the vertical plane strategy is to avoid any detachment of the gland from the pectoralis and any cranial displacement of muscular fibers. In addition, Panettiere<sup>6</sup> described a procedure to enhance nipple projection during augmentation of round implant, but aims and direction of muscle cutting are different.

The first case of mine modifying the dual plane technique was in 2004. Patient enrollment and refinements grew in a

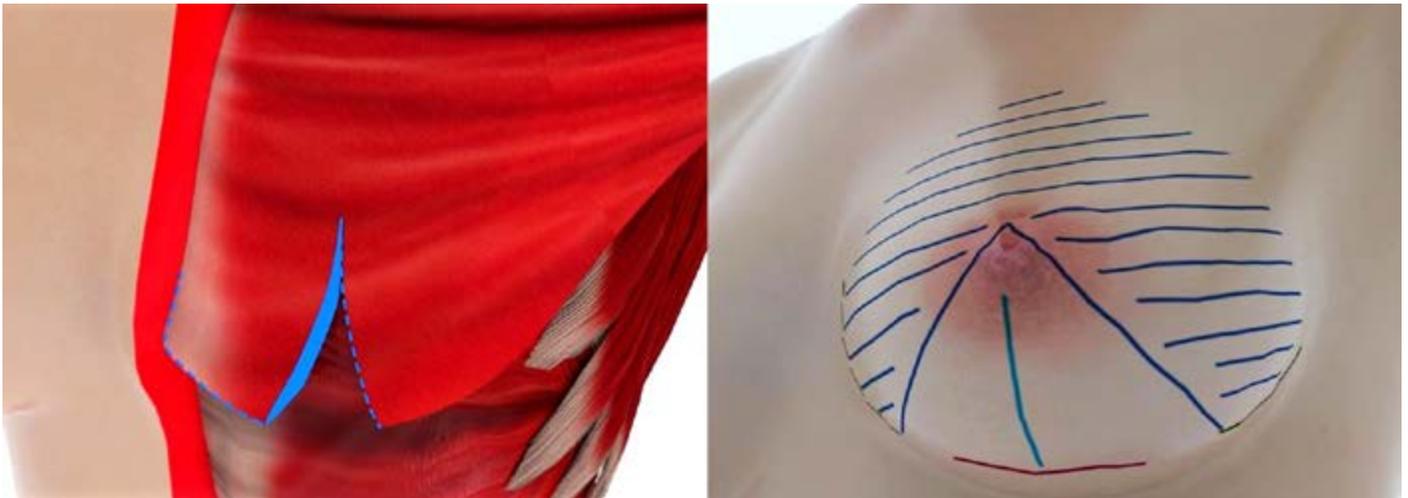


Figure 1 - Drawings for vertical plane approach: a longitudinal section of the pectoralis major muscle from the free border to the area underlying the NAC associated with the infero-medial release of muscular attachments. Left view, the blue color draws the line of muscle incision in the vertical mid-line and along the medial IMF.

decade. A series of these patients was included and used in the clinical study of my global approach to breast augmentation, named the Zenith System.<sup>7</sup>

### Surgical Approach

The initial steps are conventional as in the dual plane: access through inframammary fold (IMF) or areola and dissection of the pectoralis major from the free lower edge superiorly and its release along the IMF, undermining of the para-sternal side in accordance with the implant width. At this step, we preserve the full attachment of the muscle to the overlying parenchyma. We gently pinch and tug the pectoralis free edge at the breast midline, then cut through the muscular thickness longitudinally, starting from the lower edge, moving upwards underneath the areola and stopping before the corresponding nipple projection in the deep plane. (Figure 1)

Scoring can involve superficial fascia and deep parenchyma in case of constricted breast. The two muscle segments diverge at the implant insertion. The biomechanical pressure in the pocket due to the cohesive implants will greatly converge towards the lower-central side of the pocket envelope, point of minor strength. Avoiding the sliding of the breast-muscle interface, the pocket enlargement occurs exactly where it is more advantageous particularly if round implants are used. The lower pole reshaping can physiologically expand in the following months. A 3D educational video will be displayed on YouTube channel.<sup>8</sup>

### Results

Incidence rate of minor/major surgical complications was 9% per implant side. Capsular contracture Baker 3 and 4 rates were respectively 2.3% and 0.4% of the cases. The low reports of animation deformities are in Figure 2. Implant rotation occurred in less than 1% of cases. Revision rate per patient was 3%. Results suggest increased patient satisfaction, nearly 95%, in my practice. (Figures 3, 4, 5 - page 56)

#### Animation deformity for implant side

95.6% ✓      4.3% ✗  
21 events (of them 4 bilateral)  
Mostly moderate

only 2 events of  
Hyper-animation deformity  
associated to double boules  
in tuberous breast

Risk factors:  
tuberous breasts  
round-block pexies



Figure 2 - Report about low rates of post-op moderate/severe animation deformity.



Figure 3 - Breast augmentation with anatomical implants (right, 310; left, 280 grams). Pre (above) and post after 4-year FU (below) views.



Figure 4 - Breast augmentation with anatomical implants (right, 370; left, 335 grams) Pre and post after 9-year FU views.



Figure 5 - Breast augmentation with round implants (right, 370; left, 335 grams) Pre and post after 3-year FU views.

## Conclusions

The vertical plane makes it easier to release and widen the lower-central pole of the pocket as a dual plane does. It preserves more vascular supply from perforators to the breast (less surgical time, less bleeding) and can well avoid hyper-animation deformity. When I change implants in a patient of mine, I have

not found cranial retraction of the pectoralis major. The best indications can concern younger patients, skinny patients, body-builders (**Figure 6**), hypertrophic pectoral muscles, lower constriction of mid-breast.



Figure 6 - Two women at body-builder activity following vertical plane breast augmentation.

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# LARGE VOLUME FAT GRAFTING IN THE CORRECTION OF THE TUBEROUS BREAST

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## Introduction

**T**uberous breast deformity was first described in 1976 by Rees and Aston.<sup>1</sup> It is characterized by: hypoplasia, breast base constriction, inferior breast skin deficiency, superior malposition of the IMF, areolar herniation, increased areolar diameter, and asymmetry.<sup>2</sup> This series of morphologic alterations become evident at puberty with a wide spectrum of expression and can bring on serious disorders of self-esteem.<sup>3</sup>

A classification was first introduced by von Heimburg in 1996 describing four types.<sup>4</sup>

- I. Hypoplasia of the medial lower quadrant
- II. Hypoplasia of both lower quadrants with sufficient skin in the subareolar region
- III. Hypoplasia of both lower quadrants with deficiency of skin in the subareolar region
- IV. Hypoplasia of all quadrants with severe breast constriction<sup>1</sup>

The exact incidence is unknown and etiology is unclear.<sup>2,3</sup> Recent theories point to a simpler explanation that highlights the abnormal superficial fascia or weakness of the peri-areolar supporting tissues.<sup>1</sup> Together, these theories describe how the superficial fascia thickening can cause constriction to the breast, combined with the absence of the superficial fascia under the areola predisposing to herniation.<sup>1</sup>

There are numerous surgical techniques to correct this condition, most of them aimed at redistributing volumes based on a combination of skin expansion and mammary gland remodeling.<sup>4</sup> Prostheses and locoregional flaps can also be used to replace the missing volume.<sup>4,5</sup> Fat grafting to the breast is another technique that has become popular. When combined with techniques such as external tissue expansion, the graft capacity ratio and recipient site vascularity increases, allowing for large graft volume.<sup>1,4,6</sup>



Figure 1 - Type III deformity of the left breast. a) Front view, b) Right oblique view and c) Left oblique view.

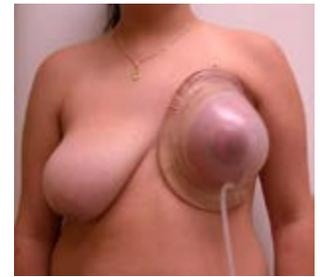


Figure 2 - BRAVA external expansion as preparation for fat injection of the breast.



Figure 3 - Three months follow up after first session of fat grafting. 3D imaging demonstrated 65% retention of volume. a) Front view, b) Right oblique view and c) Left oblique view.



Figure 4 - 2.5 months follow up after second session of fat grafting to the left breast and right breast reduction. a) Front view, b) Right oblique view and c) Left oblique view.

## Case presentation

A 15-year-old female patient with breast asymmetry was referred to our institution with non-relevant past medical history and BMI of 22.3. For the last two years, she noticed an underdevelopment of her left breast. On medical examination, normal muscle and skeletal development was observed, right breast approximately a full C cup, with grade III ptosis and a SN-N distance: 29.5cm. The left breast was hypoplastic with no ptosis, SN-N distance: 20.5cm. There was evidence of a tuberous type II constriction on the right side and a type III on the left. (**Figure 1**) Preoperative volume was calculated using Vectra3D (Canfield Scientific) imaging (Right: 657cc. Left: 114.9cc). Given the patient's age and the significant volume asymmetry, we selected a surgical approach using autogenous tissue to the left breast. The use of a unilateral implant, while more straightforward initially, results in the need for constant

rebalancing as the patient goes through the physiologic and gravitational changes that occur throughout life.

External expansion using BRAVA (Coconut Grove, Florida, via Bio-Mecanica, Montreal, Canada) was applied daily for six consecutive hours, seven days a week for three weeks before each surgery. (**Figure 2**) Procedures were done under general anesthesia. In the first session, fat was harvested from the flanks, then prepared by washing with saline and decantation, obtaining a total of 430cc. Fat grafting was performed through three separate puncture sites (inframammary crease, medial, and lateral) using a Coleman single hole 2.5mm cannula injecting in three planes (deep, within the breast, and subcutaneous); a total of 400cc was injected. Then several needle band releases were performed around the areola using an 18G needle to improve the areas of constriction. (**Figure 3**)

After 3.5 months she underwent her second session of fat grafting in the same fashion as the first procedure. The donor site was the abdomen and another 380cc of fat was injected in the affected breast, distributed in the subcutaneous and sub-glandular planes. At this time, a right breast lift/reduction (140gr) using a superior pedicle and a circumvertical incision were done to achieve balance. A compression garment was indicated for six weeks after each procedure. The patient recovered well from both procedures with no complications. Results are shown 2.5 months following the second procedure. (Figure 4)

### Discussion

Since Coleman popularized lipofilling technique, it has become a recognized therapeutic tool for soft tissue augmentation.<sup>7</sup> Khouri made a significant contribution with the introduction

of external expansion to address the necessary capacity to graft ratio needed for successful outcomes.<sup>8</sup> The number of sessions depend on the extent of the deformation, quality of the recipient site, and patients' adipose reserves.<sup>9</sup> The presence of fibrous tissue in tuberous breasts makes fat grafting more difficult to perform; using external tissue expansion might prepare the recipient site by altering the fibrous aspect of the tissue, especially in the lower pole, which helps to accomplish the natural appearance and consistency of the breast.<sup>4</sup>

### Conclusion

Large volume fat grafting should be considered for the management of the constricted breast, especially in cases of unilateral deformity. Pre-expansion will provide a construct for adequate fat volumes to be injected.

*The authors have no financial interest in any company or product mentioned in this article.*

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The graphic is a rectangular box with a light grey background. On the left side, there is a large orange circle containing the text 'ISAPS®'. Below this, the text 'THANK YOU TO OUR ISAPS GLOBAL SPONSORS' is written in orange, with a faint world map in the background. On the right side, there are two circular logos: a 'PLATINUM' logo at the top and a 'GOLD' logo at the bottom. To the right of the 'PLATINUM' logo, the text 'PLATINUM Sponsor:' is followed by logos for MENTOR (with 'part of the Johnson & Johnson family of companies' below it), MERZ (with 'NORTH AMERICA' below it), and POLYTECH. Below the 'GOLD' logo, the text 'GOLD Sponsor:' is followed by logos for Bio | SCIENCE and GC Aesthetics™.



# BREAST AUGMENTATION USING SILICONE IMPLANTS

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## Introduction

Breast augmentation remains the most common aesthetic surgical procedure performed worldwide. In 2018, it was reported that 1,862,506 breast augmentation surgeries were performed, constituting a 6.1% and 27.6% increase since 2017 and 2014, respectively.<sup>1</sup> With patients becoming increasingly knowledgeable, savvy and demanding with regard to their goals and final look, plastic surgeons around the world have welcomed the evolution of prosthetic device technology that has taken place in recent years. There is a wide variety of implant selection, in particular silicone breast implants, to facilitate a highly individualized approach and meet patient expectations.

The association between devices with textured surface and breast implant associated anaplastic large cell lymphoma (BIA-ALCL), its current lifetime estimated risk ranging from 1:2,207 to 1:86,029,<sup>2</sup> has led us to solely utilize smooth implants in aesthetic breast surgery. Therefore, smooth silicone implants will be the focus of this discussion.

## Patient Selection

Patient selection encompasses several key elements of pre-operative planning.<sup>3</sup> It cannot be a one-sided, surgeon-centered process. It warrants equal partnership between the surgeon and the patient, and is the most important time to educate



- Pinch test in the upper pole. Thickness less than 2 cm essentially precludes sub-glandular implant placement.
- Nipple-to-sternal notch distance, nipple-to-inframammary fold (IMF) distance under maximal stretch, and intermammary distance - important parameters in deciding the optimal implant profile.

the patient, build trust and develop rapport. Patients are encouraged to describe their ideal look, including cup size, and they are invited to show pictures to demonstrate their goal.

Beyond patient preference, anatomy and tissue quality determine implant selection. Anatomic considerations such as breast skin quality, chest deformities, including pectus excavatum and pectus carinatum, nipple position and intermammary distance are discussed with the patient in detail.<sup>4</sup> This discussion is in the context of clinical decision making and to set realistic expectations with regards to the post-operative outcome. It is important to make patients aware of their deformities and asymmetries pre-operatively. Once this is established, discussion of implant shape, implant type, filler material, tissue plane and incision location ensues while simultaneously demonstrating using samples to show how different types of implants behave.<sup>3</sup>

Although the use of three-dimensional simulation can adequately demonstrate the final breast shape and size, and assist with implant selection, it is by no means essential or even preferred. In our practice, patients often state that self-fitting of breast implants or sizers under a surgical brassiere pre-operatively results in a more accurate representation of the long-term post-operative look.

### Implant Selection - Key Points

- The following measurements are key:<sup>4,5</sup>
- Base width of the existing breast parenchyma - sets up tissue-based planning (dimension over volume).
- Degree of stretch of the breast envelope. The greater the stretch, as in multiparous women, the greater the fill volume required.

The desired upper pole fullness is a very important factor in modern breast augmentation. We have observed in recent years that most patients desire more upper pole fullness. Fifth-generation implants are characterized by the cohesive nature of their gel and provide both upper pole fullness and softness. The upper pole stability provided by structurally cohesive implants is particularly advantageous in patients requiring mastopexy, as well as in revision procedures. More cohesive implants are preferred for subfascial or sub-glandular placement, in order to minimize rippling. On the other hand, for patients who desire a more "natural look," a less cohesive device is preferred to limit upper pole fill. It is also important to keep in mind that with time, as the lower pole stretches, upper pole fullness tends to decrease.

### Surgical Technique

Our preferred approach is the dual-plane submuscular placement through an IMF incision (Figure 1):<sup>3,6</sup>

- Markings: The footplate of the breast is outlined. The IMF incision is designed in order to post-operatively be within or slightly cephalad to the new IMF crease. Planned changes to the native IMF are also marked.
- General anesthesia is induced, the field is prepped with betadine, and Tegaderm dressings (3M, Maplewood, MN) are placed to cover the areolas.
- Field blocks are performed with an equal mix solution of 0.25% bupivacaine and 1% lidocaine with epinephrine.
- The IMF incision is made and electrocautery is used to dissect in a cephalad trajectory in order to avoid disruption of the IMF. The pectoralis major muscle is identified and its lateral border is delineated. Using electrocautery, submuscular

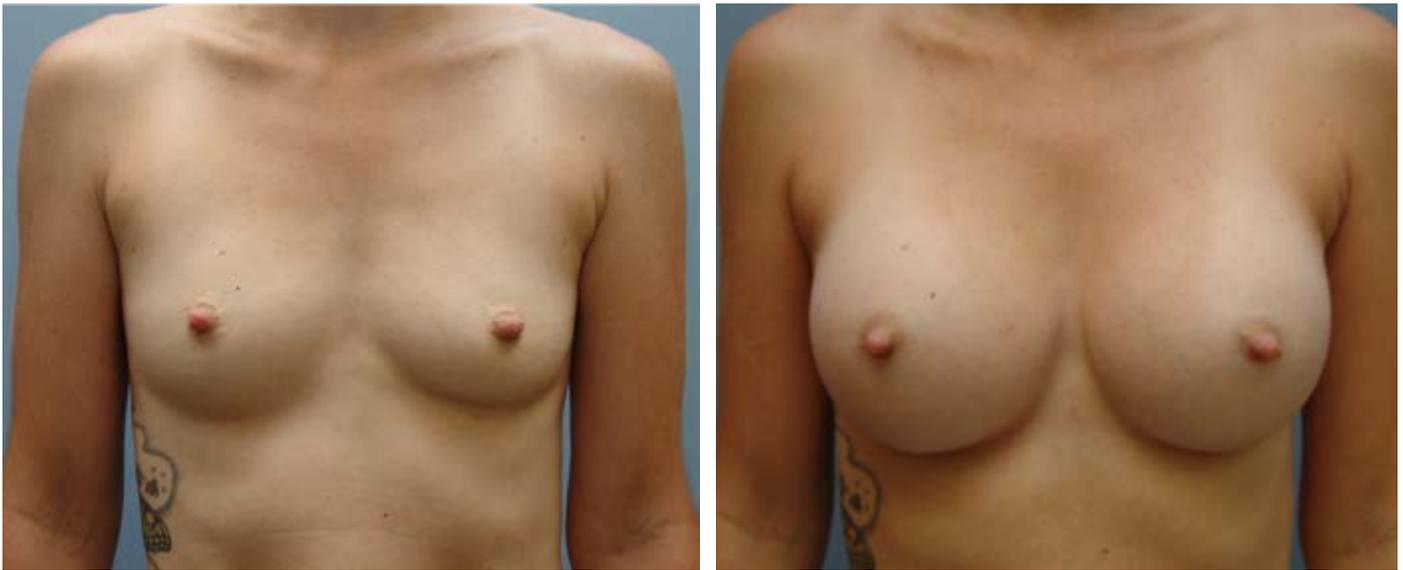


Figure 1 - A 35-year-old woman who underwent primary submuscular breast augmentation using Natrelle INSPIRA SoftTouch Style SSM-310 implants. Pre-operative (A) and three-month post-operative (B) photographs.

dissection is performed and a dual-plane release occurs. Muscle division is performed last. The goal is to enter the pocket once in order to avoid contamination.

- Undiluted betadine solution is used for irrigation of the pocket. Implant placement occurs via 'no touch' technique utilizing the Keller Funnel 2 (Keller Medical, Stuart, FL).
- Water tight, three-layer closure is performed using 2.0 polyglactin (Vicryl, Ethicon Inc, Somerville, NJ) interrupted sutures at the fascial layer, followed by dermal and intracuticular closure with 4.0 poliglecaprone (Monocryl, Ethicon Inc, Somerville, NJ) sutures.

### Postoperative Care

- Early recovery postoperative program: Early but gentle full range of arm and shoulder motion, advanced as tolerated. Return to daily activity as soon as possible. Immobility and posturing exacerbate muscle spasms and post-operative discomfort.
- Postoperative massage is allowed but not encouraged, in order to maintain pocket control.
- No strenuous exercise, heavy lifting or running for 4 weeks.
- Minimizing intra-operative trauma is crucial in order to limit post-operative pain. Typically, postoperative narcotic use is not required, and early use of nonsteroidal anti-inflammatory drugs (NSAIDs) in addition to acetaminophen is adequate.

The authors have no financial interest in any product or company mentioned in this article other than Allergan. Drs. Kortesis and Bharti are consultants and speakers for Allergan. Dr. Vasilakis does not have anything to disclose.

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# AUGMENTATION MAMMAPLASTY WITH IMPLANT IN CHINA: MY PRACTICE AND EXPERIENCE

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**P**lump, beautiful and elastic breasts are one of the most important characteristics of female beauty. According to ISAPS statistics, the number of breast augmentation surgeries ranks first among the five major aesthetic surgeries in the world. The common approaches of augmentation mammoplasty are trans-axillary, peri-areolar and inframammary incisions. Among them, the trans-axillary incision is one of the common approaches in our group. In 1991, John Tebbetts began to perform augmentation mammoplasty through axillary incision under endoscope in order to improve the effectivity and stability of this operation. Our department began to perform this endoscopic procedure in 1995. From December 2011, primary trans-axillary breast augmentation with endoscopic assistance has become routine. The operation is carried out under general anesthesia after accurate preoperative designing and measurement. The trans-axillary surgical tunnel is established through axillary incision with direct vision. Tumescence injection is performed to reduce bleeding and establish vasoconstriction which is beneficial and crucial to create a clear surgical field in endoscopic surgery.

All dissection is performed under endoscopic control with endoscopic electrocoagulation. The pocket border is precisely created according to the pre-operative design. Preserving of medial origin of pectoralis major and fourth intercostal nerve is pivotal for avoiding nipple sensation loss and symmastia. The origin of pectoralis major along the new IMF line is completely dissected to release the tissue tension and create dual-plane type I dissection. The different level of pectoralis major on both sides is severed differently with higher nipple side is lower and the other is higher when the patient presented with nipple level asymmetry.

Implantation is followed by irrigation of normal saline containing hemostatic drugs (Hemocoagulase) and antibiotics (cefuroxime sodium). The majority of implants we use are anatomical implants. After confirmation that both breasts are in good shape as expected, the incision is closed with 5-0 Vicryl with the placement of drainage which would be removed approximately four days after the surgery.

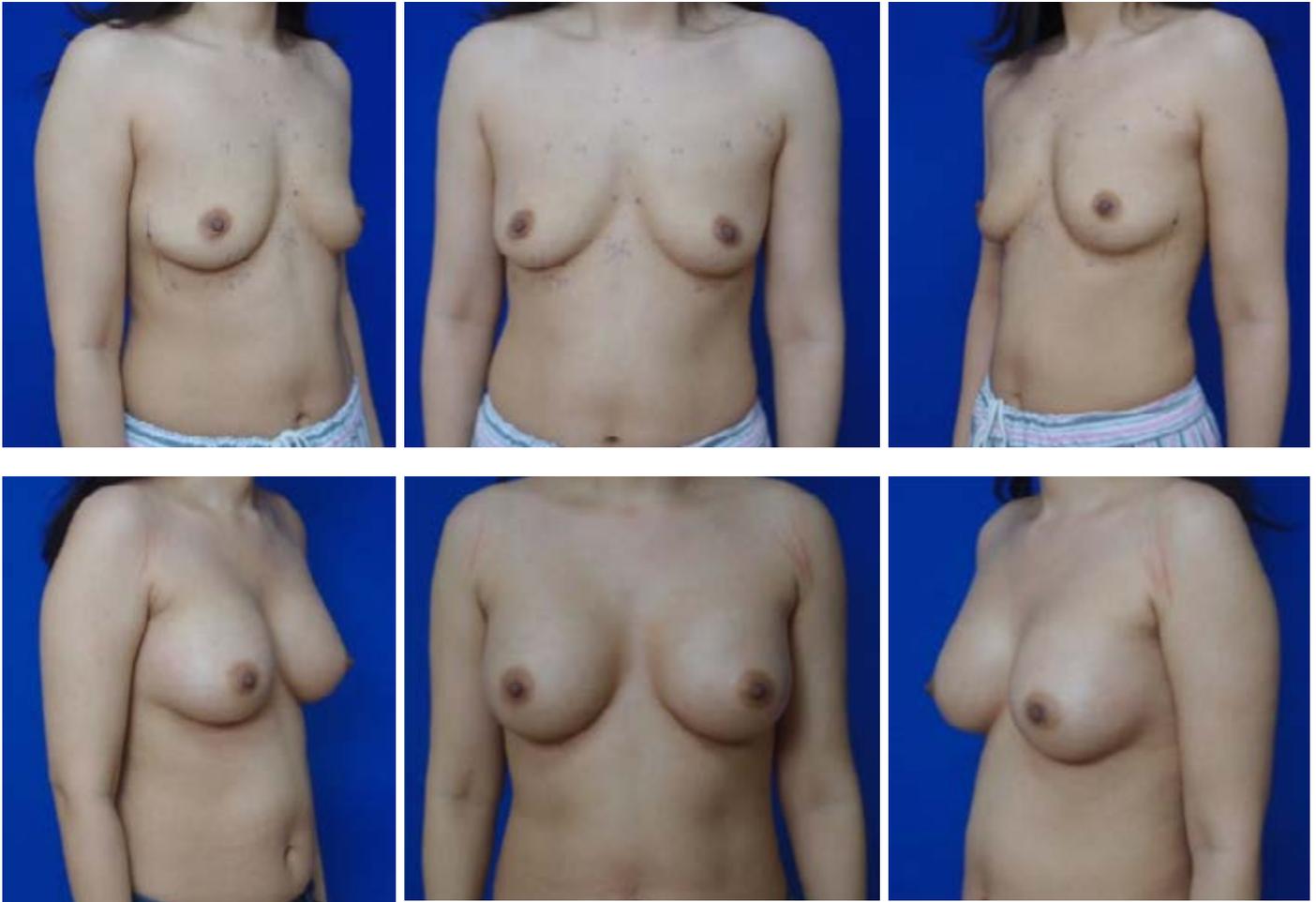


Figure 1 - Preoperative and postoperative views of our patient. Upper figures: Pre-operative; Lower figures: Post-operative.

Between July 2014 and December 2016, there were 53 cases included in our two-year retrospective follow-up. The average age of patients was 32 with a BMI ranging from 15.1-23.4. Among them, 89% were anatomic prosthesis and 11% were round prosthesis. In the anatomic prosthesis, the sizes were from 215-355ml with the maximum number of 245ml CPG 321 anatomical implant.

Postoperatively, the difference value between the chest circumference at the nipple level and that at the IMF is 8-19 cm, with an average of 12.3 cm, while the difference before operation is 1-19 cm, with an average of 6.5 cm. However, there was no linear correlation between the difference of chest circumference and the size of the prosthesis. The mean N-N distance was 17.25 cm before operation and 18.5 cm after operation with significant statistical difference.

As to the evaluation of postoperative complications, the majority of complications are attributed to nipple sensation changing, rippling and palpation. One patient (2%) suffered from

capsular contracture graded III. The most common postoperative complications were palpability of breast prosthesis. 35% of them were located on the lateral and lower part of the breast, and 15% of them were along the IMF region. Another major complication was hypoesthesia or loss of nipple sensation, accounting for 11% of the follow-up group. We consider the high incidence of implant palpability is attributed to the low BMI (18.2) of patients, no covering of pectoralis major muscle on lateral and lower part of the breast, and no muscle attachment along IMF region after dual plane dissection.

Postoperative patient satisfaction evaluation was calculated by questionnaire based on modified BREAST-Q. The overall satisfaction of patients is favorable. 90.2% of the patients thought that their breasts were the right size with full B or C cup size; 84.31% of the patients were satisfied with the appearance of their breasts when they were naked. In summary, the dual-plane trans-axillary endoscopic augmentation mammoplasty holds high postoperative satisfaction and fewer complications, which is comparable with IMF approach augmentation.

# A BREAST AUGMENTATION UPDATE: FIFTY YEARS' EXPERIENCE

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*'In these moments of tension caused by the current pandemic, I have done my best to stay up to date with the information generated in this regard, which is quite difficult. However, as a surgeon it strikes me that practically all the protocols regarding the use and disposal of personal protective equipment are addressed to medical, paramedical and nursing personnel.'* <sup>(1)</sup>

It is currently an extremely difficult time for our profession, especially for our surgical practice, because the deferral of elective operations is highly recommended, and even more so for aesthetic procedures. In addition to COVID-19, we have the problem of ALCL (Anaplastic Large Cell Lymphoma), another pathology that generates a lot of controversy among plastic surgeons, especially about what type of implants are better for reducing the risk.

In this paper, we share our experiences concerning clinical evaluations and further surgical decisions for aesthetic augmentation mammoplasties. Breast reconstruction presents other kinds of considerations and controversies that will not be discussed in this brief. Eight breast augmentation topics have been selected based on the senior author's 50 years of experience in plastic surgery and his team's experience, as follows:

- 1. Patient evaluation and clinical preoperative examination**
- 2. Asymmetries**
- 3. Type of implant**
- 4. Incisions**
- 5. Subglandular or submuscular-subfascial space?**
- 6. Anesthesia**
- 7. Technique**
- 8. Complications: Capsular contracture**

## 1. PATIENT EVALUATION AND CLINICAL PREOPERATIVE EXAMINATION

As well as interrogation and proper physical examination to discover asymmetries or other kinds of anatomic defects, we have to understand the patient's expectations and try to agree with them on implant size. While we are convinced that they have to fit the patient's thorax to achieve a harmonious contour, we usually give the patient the opportunity to choose within certain limits. However, if there is a large difference between the patient's criteria and ours, this is definitely not our type of patient.

## 2. ASYMMETRIES

Breast asymmetry correction surgery is challenging because it is difficult to evaluate either the implant size or the amount of tissue to be removed. Breast surgery is a subjective procedure derived from the surgeon's experience and their ability to assess and evaluate the breast.

The surgical approach to breast asymmetry depends on several factors, including the surgeon's experience, the anatomy of the patient, and several methods that can help both choose a technique and define the size of the implant or the amount of breast tissue to be excised. We previously published a study <sup>2</sup> to assist with the evaluation of breast volume using a Quantra™ software application intended for use with Hologic™ digital mammography systems preoperatively. Volumetric mammogram studies help to determine the amount of tissue to be excised, the size of implants, and a combination of both. The results of this study, evaluated by surgeons and patients, were found

to be highly satisfactory. Therefore, the use of full-field digital mammography with adequate software should be considered as another tool to assist in making decisions concerning the correction of breast asymmetries. Sometimes we have to choose different surgical techniques for each breast combination for mastopexy or reduction mastoplasty or different implant sizes. In these cases, we prefer a volume difference of no more than 50 to 60 cc between both devices, and eventually we adjust it with a glandular resection in the larger breast.

### 3. TYPE OF IMPLANT

For the last 14 years, we have used smooth surface implants (moderate or high profile) in all our procedures and in both planes (subglandular and submuscular). Texturized implants (round, anatomic, macro-, micro-, or nano-texturized) may cause seroma; however, this complication is rarely found when using smooth devices. As known, seroma is a huge problem not only for its relationship with ALCL (not all late seromas are related to this pathology that, as a matter of fact, has a very low incidence among implanted women universally) but also because of it. Therefore, we are forced to study it as if it is related, which generates uncertainty and costs that are not always included in medical insurance coverage. In addition, this can result in legal claims, which represents another, although non-medical, complication.

Anatomic implants are mostly preferred for breast reconstruction surgery, but these procedures can be performed with smooth round implants with good results. Lipotransfer has also been developed as a very useful resource for the treatment of small or medium defects. In our experience, there is no significant difference in the incidence of capsular contracture between smooth and texturized implant surfaces. Additionally, we do not use polyurethane-covered implants.

### 4. INCISIONS

Our preferred approach is a sub-mammary fold incision for both primary cases and redo surgery reoperations. A trans-axillary approach is an option for us for those patients who present much scarring due to previous breast surgeries. We consider the peri-areolar approach controversial enough not to choose it as a first option. Not only have patients complained about some loss of sensation, sometimes rising to the level of anesthesia, which can lead eventually to legal demands, but there are also reports about the increasing risk of capsular contracture due to the gland section being in contact with the implant. However, there is another approach, "The trans-midline approach,"<sup>3</sup> as described by us in 1980 for breast reconstruction procedures. (Figure 1)

### 5. SUBGLANDULAR OR SUBMUSCULAR-SUBFASCIAL SPACE?

Our first choice is subglandular, and as a second option, the submuscular-subfascial plane when necessary. Total subfascial plane is another possibility to be considered. Among objections to the subpectoral implantation of breast implants are the deformities caused by muscular contraction. Basically, the anatomy of the gland base is not coincident with the subpectoral space. More and more plastic surgeons are considering avoiding this space for breast reconstruction cases.

We are confronted with five different implant deformities,<sup>4</sup> alone or combined, as follows:

1. Riding-up when the patient contracts the muscle
2. Flattening of the implant at the time of muscle contraction
3. Notching of the detached border of the pectoralis major muscle
4. Bottoming out
5. Lateral displacement in the supine position

Robles et al.'s paper<sup>5</sup> (A larger subpectoral pocket for breast implants), published in 1978, proposed avoiding the full section of the muscle and creating, for the first time, a plinth for the lower pole of the implant. We later published our conclusions in 1992.<sup>6</sup> In 2007, Ventura et al.<sup>7</sup> described in greater detail a submuscular-subfascial plane created for this purpose. From a different point of view, in 2001, Tebbetts<sup>8</sup> published the dual-plane technique, with a full section of the lower insertion of the pectoralis major muscle and a variable section of the sternal insertions according to each case, leaving the lower pole without contention. A full section of the muscle can induce strong adherence to the capsule around the implant, producing the notch at the breast or allowing the bottoming out of the implant. (Figure 2) Taking care of the lower pole of the pocket is very important for two reasons: first for coverage and second, to take control of the pectoralis major muscle. (Figure 3)

In some cases of redo surgery or breast reconstruction, acellular dermal matrix (ADM) may be considered for use in the outer layer of the implant at the lower pole. The ADM may be tacked to the inferior border of the pectoralis major above and to the Scarpa's fascia or to the deep fascia below.

### 6. ANESTHESIA

We prefer local anesthesia and intercostal nerve blocking. Tumescence anesthesia is useful for liposuction and other plastic surgery procedures because of its great benefits for both patients and surgeons. The key to easy access in breast surgery is an accurate technique for dividing or separating anatomic spaces and the avoidance of pain, too. In this study,<sup>9</sup>

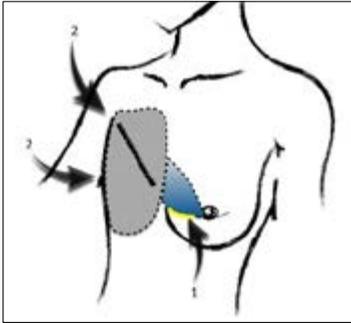


Figure 1 - The transmidline approach to breast implantation. In yellow (1) incision, in blue the presternal tunnel, and (2) limit of dissection.



Figure 2 - Anatomical dissection of the subpectoral-subfascial space.

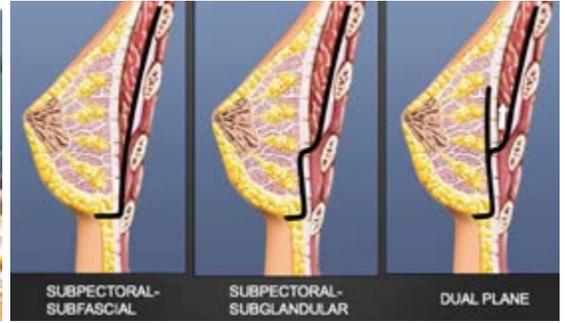


Figure 3 - A cross-section of the pockets.

we describe tips to facilitate breast surgery with local tumescent anesthesia that makes the dissection of different spaces easier. As a complimentary issue, we proceed by blocking the last four intercostal nerves (2nd to 5th) with lidocaine 1% with epinephrine. We use Klein solution and Klein needles, or any other needle with a blunt ending. In addition, and especially due to the COVID-19 pandemic, it is not recommended to perform general anesthesia with intubation if possible because it represents an additional contagion risk. Our technique allows for IV sedation with no need for an anesthesia machine.

## 7. TECHNIQUE

In the subglandular space, tumescent infiltration between the gland and the fascia is performed by opening a hand fan from the medial to the lateral and then performing a dissection of the space. In the submuscular space after the skin incision, when the pectoralis major is located and under direct vision, the submuscular space is infiltrated. In the upper part of the pocket it is important to find the space between both the pectoralis muscles (major and minor) and in the lower part, to infiltrate the fascia below the inferior edge of the m. pectoralis major to create a submuscular/subfascial pocket without leaving free

muscle to maintain a unit muscle-fascia. This creates a plinth to hold the implant. This subfascial plane acts as a shelf and provides firmness and stability to the new inframammary fold.

## 8. COMPLICATIONS: CAPSULAR CONTRACTURE

Late capsular contraction around breast implants is one of the most difficult complications to prevent or resolve. Zimman et al.<sup>10</sup> studied the mechanisms that control the fibrotic process in an animal model. Using angiotensin-converting enzyme inhibitors and an angiotensin II receptor antagonist, the authors described a significant reduction in fibrosis in different experimental models. Previous studies have focused on the morphological changes in cases of contraction.<sup>11</sup> Enalapril lowers the expression of fibrotic mediators, TGF- $\beta_1$ , inflammatory markers, anti-ED1, anti-collagen III monoclonals, and the periprosthetic fibrosis process. A reduction of TGF- $\beta_1$  indicates that the probable main cytokine mediator of the fibrotic cascade is attenuated. This hypothesis may provide the basis for a safe and cheap therapeutic strategy with which to modify the capsular contracture that sometimes affects women with mammary implants. We use enalapril 5 mg/day (off-label) in cases of redo breast augmentation surgery with capsular contracture.

*The authors have no financial interest in any product of company mentioned in this article.*

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# SHORT CASE STUDY



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## Background

The first description of Poland anomaly is attributed to Alfred Poland of Guy's Hospital, London in 1841 based on the autopsy of a 27-year-old male convict, in which he described syndactyly of the hand with ipsilateral absence of the left sternocostal head of the pectoralis major muscle. However, the condition was not named eponymously until 1962 when Dr. Clarkson, also of Guy's Hospital, described a series of three cases of syndactyly with accompanying ipsilateral breast hypoplasia.

Poland syndrome is a rare congenital anomaly characterized by an absence or hypoplasia of the greater and smaller pectoral muscles, breast or nipple anomalies, hypoplasia of subcutaneous tissue, chest wall deformities, pectoral and axillary alopecia, anhidrosis due to the absence of sweat glands, and hand anomalies.<sup>3</sup>

Poland syndrome is usually unilateral. New components including the absence or hypoplasia of many muscles have been identified, like Latissimus Dorsi, and Trapezius.<sup>4</sup>

The true incidence of Poland anomaly is unknown. The reported incidence ranges from 1 in 17,000 to 1 in 100,000.<sup>3</sup>

Poland anomaly is reported to be more common in males, ranging from a ratio of 2:1 to as high as 5:1 and more common on the right side than on the left side (3:2).

Analysis of the gender and sidedness indicates that males are more likely to have a right-sided anomaly, whereas females have an approximately equal distribution of left- and right-sided anomalies.

Mild forms of Poland syndrome are more frequent than severe forms, and may go undiagnosed. Hypoplasia of one breast or a horizontal anterior axillary fold may be the sole clinical manifestation of this syndrome.<sup>9</sup> The latissimus dorsi myocutaneous flap is one of the most useful reconstructive tools in this situation.<sup>8</sup>

Functional limitations are minimal, and thus surgical correction is primarily indicated for aesthetic purposes. Chest wall reconstruction typically involves transposition of a latissimus dorsi myocutaneous flap with or without a temporary subcutaneous tissue expander prior to surgical reconstruction with a definitive Silicone implant. Other surgical options are 3D computer-aided design reconstructions and fat transfer.



Figure 1 a, b & c

### Case Report

*A 19-year-old female patient diagnosed with Left Poland Syndrome, Stage II (Foucras classification). Total absence of pectoralis major and minor muscle, distopic microtelia, with a normal right breast.*

Chest x-ray and MRI shows no chest wall anomalies, and absence of left breast, pectoral muscles and subcutaneous tissue.

8 months post-op, placement of 550cc/550cc tissue expansion completed. Presurgical 1st Fat transfer.



Figure 2 - Chest X-ray

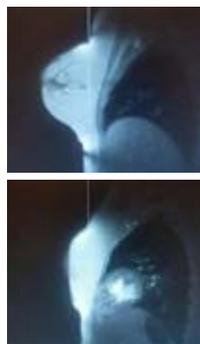


Figure 2- MRI



Pre-operative, placement of 550cc temporary tissue expander, submammary incision with 100cc of saline solution.



Figure 3 a, b & c



Figure 4 a, b & c

Intra-operative: we divided the left breast in four quadrants, performed Rigotomies and with a flattened tip cannula of 2mm, lipotransferred 30 cc in each quadrant, after extraction of 120 cc of saline solution from the tissue expander.

Obtaining fatty tissue: Saline solution infiltration with epinephrine in the periumbilical region. Decantation.

We repeated the procedure 5 times, with an interval of 45 to 60 days. When the tissue expander was completely deflated, we removed it, for the same submammary inscision.



Figure 5 a, b & c

We performed a peri-areolar pexy in the right breast and used the right areolar skin for reconstruction of the left areola. In a second stage, we did a dermopigmentation of the nipple areolar left complex. (Preop photos and 3-year Post-op photos ).

### Final result was a fatty left breast!

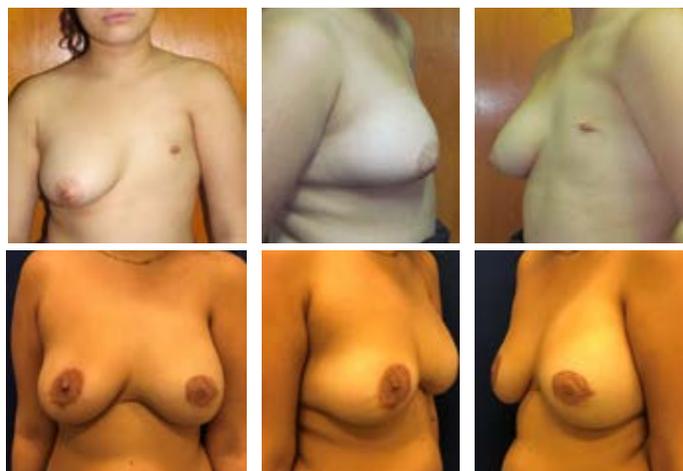


Figure 6 - Top: Pre-op; Bottom: 3-years post-op.

Follow-up: control MRI 1- and 2-years Post-op, and mammography.

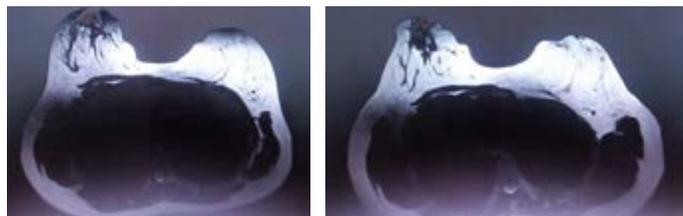


Figure 7a - MRI - Left, 1-year post-op; Right, 2-years post-op.

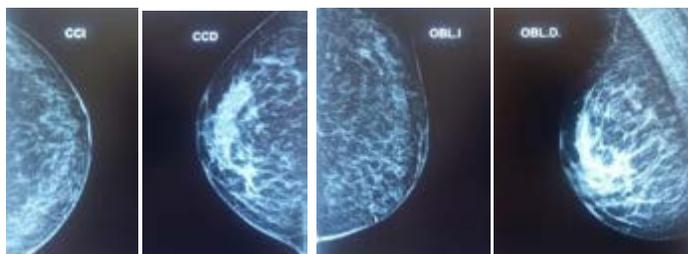


Figure 7b - Mammography

### CONCLUSION

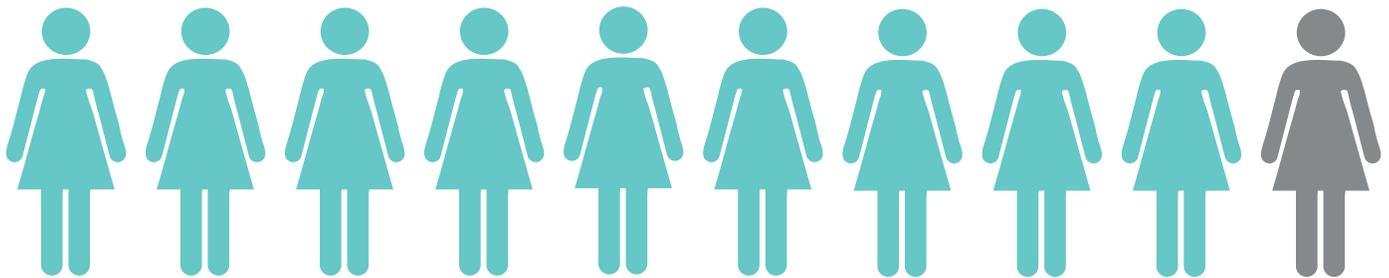
*Breast reconstruction in Poland Syndrome, tissue expansion, deflation, rigotomies associated with fat transfer is a good option, with very predictable results, avoiding the use of Silicone implants.*

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# SHORT CASE STUDY

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## PERIAREOLAR MASTOPEXY WITH IMPLANTS AND GLANDULAR Z-PLASTY FOR SEVERE MAMMARY ASYMMETRY



CLAUDIO BERNARDI, MD  
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CARLO CARUSI, MD  
ITALY



Figure 1 a,b,c - 32 year-old patient with severe breast ptosis, volume and shape asymmetry.

In patients with ptotic and hypoplastic breast, augmentation mastopexy is usually the operation of choice as it allows to decrease skin-breast volume disparity. It is one of the most challenging breast procedures, intended to achieve harmonious shape and projection, natural fullness and appropriate size with limited scarring.<sup>(1-4)</sup>

The authors present the case of a 32 year-old patient complaining a severe breast ptosis with volume and shape asymmetry. (Figure 1a,b,c)

On the right breast, we performed a periareolar incision of approximately 4 cm-diameter and a skin-glandular undermining of the lower pole. Then the breast tissue was incised vertically with electrocautery, straight down to the pectoralis fascia, and a sub-glandular pocket for the implant was dissected; a round base implant size (210 ml) with high anatomical projection was inserted. With the patient in 30° semi-sitting position, we assessed the degree of the lower pole constriction and shortness and a glandular z-plasty was performed in order to obtain a wide expansion and lengthening of the lower pole as well as a nice remodeling of the breast cone. (Figure 2)

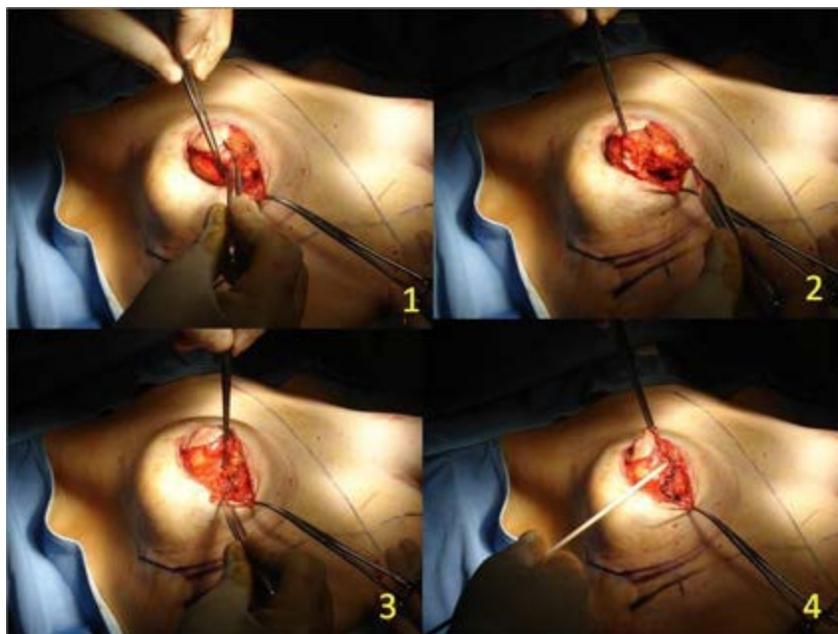


Figure 2 - Glandular z-plasty and the final lengthening of the lower pole.

A definitive polyurethane implant was placed and glandular incision sutured. On the left breast, after assessing volume with the sizer, a polyurethane implant of 180 ml was placed in the subglandular pocket and a vertical plication of the gland was performed to correct the breast ptosis. The previous undermining of the lower pole allowed the excess skin to redistribute without the need of vertical skin incision. With the patient in a 45° semi-sitting position, a temporary periareolar purse-string was performed and the new position of the NAC was marked with a 4 cm areolotome. After

the de-epithelialization of the marked area, the NAC was repositioned and periareolar suture was done with two-layer absorbable stitches. No drains were used. Dressing and compression bra were applied.

Such approach to mastopexy with implants by means of a “tailor made” gland remodeling allowed us to achieve good aesthetic outcomes with limited scarring, and a satisfactory long-term result. (Figure 3a,b,c)

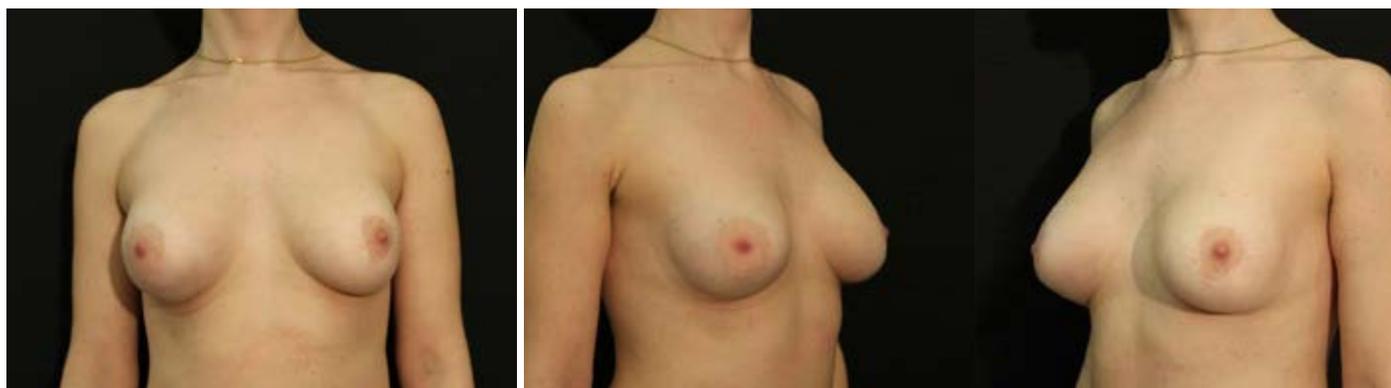


Figure 3 a,b,c - Two years post-op.

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# SURGICAL MARKING



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ISAPS National Secretary for Italy

## HOW I MARK MY PATIENTS BEFORE BREAST AUGMENTATION

---

I usually give my patients a pre-op markings appointment the evening before surgery. This is a very important moment to talk with them again and listen to their worries, to clarify their doubts and to sign the informed consent which they will have received from me 15 days before. It is, therefore, an opportunity to get to know our patients better, and also to instill trust in them.

First of all, I start cleaning the skin with an alcoholic solution, to remove any residual oiliness on the skin. Then I start marking the midline, with a black Edding marker, placing the first dot

at the sternal notch, the second at the xiphoid and then I draw a line to join these two points.

A rule that is very important to me is one that I learned from Tebbets: establish the inter-mammary distance to avoid joining the two pockets - and thus avoiding the risk of symmastia. To accomplish this, I mark a row of dots, 1.5 cm laterally to the midline; these are the limits to which to extend the medial pocket, to prevent perforation of the medial vessels and over dissect the great pectoral muscle medially.

Small crosses, in red marker, define the second intercostal spaces, where the medial perforator vessels are located.

Then I mark the existing inframammary fold, and define the new one, based on the choice of implant. This choice is made with the patient a few weeks earlier, and is based on the width of the breast, thickness of the tissue cover, compliance of the skin, and the patient's preference. On some occasions, I have to disagree with my patients who are not realistic and would like bigger implants. But it is very important to make them understand that bigger implants mean greater future problems in terms of thinning of the skin and gland. In general, patients listen to me and prefer more natural results. In some cases, when they become stubborn in wanting to choose prostheses that are too large compared to the base of their gland, I say that I prefer not to operate on them.

The next step is defining the future inframammary fold. To accomplish this, I follow the ICE principle, published by Dr. Mallucci in *PRSJ*, which is helpful to obtain a natural breast shape. The rule is that a round implant must be positioned 55% below and 45% above the NAC, while an anatomical implant must be 50% below and 50% above the NAC. Based on the implant choice, a mathematical formula is given to place the inframammary fold in the precise location.

Once the new fold has been determined, under maximum skin stretch, I place dots in the new position. If the inframammary fold is already at the correct height, the dots will be exactly in the original inframammary fold.

The location of the inframammary incision is then marked along the new inframammary fold. To prevent the location of the incision from being too lateral, I draw a perpendicular line from the medial nipple to the new inframammary line and then I place the incision 1.5 cm medially to the perpendicular line and the remainder laterally to the line. In general, the length of the incision varies from 4 to 5 cm for round non-cohesive gel implants, and from 5 to 6.5 cm for textured anatomical implants.

Having completed pre-operative markings, I ask my patients to stand in front of a big mirror that I have in my office, so as to point out the existing asymmetries of their breasts, or thorax, highlighted by the markings. In this moment I also discuss possible residual asymmetries. Every detail is described on the informed consent.

In conclusion, as I tell my patients, pre-op marking is "half the procedure." It takes almost 45 minutes of my time, but it is an important moment to gain patients' trust, to make them feel comfortable and let them express all of their worries about the procedure that they will be undergoing.



# HOW I MARK: BREAST AUGMENTATION

---



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UNITED STATES

## PREOPERATIVE PLANNING

At the time of consultation:

### 1. Breast measurements

- a. Breast width at its widest point.
- b. Nipple to Inframammary fold (N-IMF) distance.
- c. Sternal notch to Nipple distance.
- d. Breast height.

### 2. Assessment of breast parenchyma and skin

- a. Elasticity: This is performed with deflection of the skin, and observation for resistance.
- b. Pinch test: This is performed at the superior and medial portion of the breast, between the examiner's thumb and index finger. A result of less than 2 cm is usually an indication for placement of the implant in the subpectoral plane.

### 3. Choice of implant volume

Sizers are placed in a bra and compared to the images obtained by the three-dimensional imaging.

### PREOPERATIVE MARKINGS

The patient is marked in the upright standing position, and the following markings are made:

- a. Midline, from sternal notch to xiphoid
- b. Inframammary Fold
- c. Superior, medial and lateral borders of the breast. The medial borders are marked 1.5 cm lateral to the midline, so as to prevent symmastia
- d. Breast meridian
- e. Marking of the incision: for an inframammary approach, the marking is placed below the inframammary fold, centered at the breast meridian, most often 4 cm in length, 2 cm medial and 2 cm lateral to the meridian. **(Figure 1)**

Clinical examples of patients with Inframammary breast augmentation with smooth round silicone implants are shown. **(Figures 2,3)**

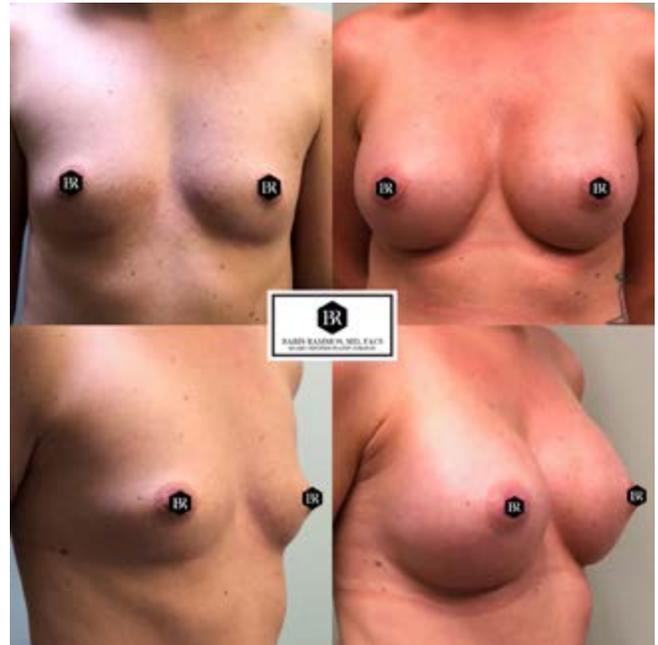


Figure 2 - Preoperative frontal and oblique views of a 32-year-old female with micromastia. Images obtained 4 months follow up after a submuscular breast augmentation with a 405 ml smooth round implant with moderate projection

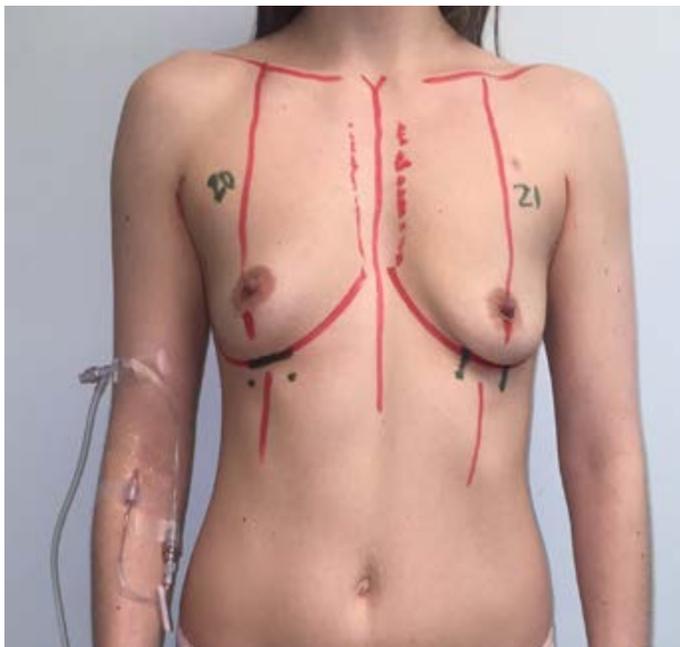


Figure 1 - The patient is marked in the upright standing position, and the following markings are made:

- Midline, from sternal notch to xiphoid
- Inframammary Fold
- Breast meridian
- Proposed incision
- Medial borders

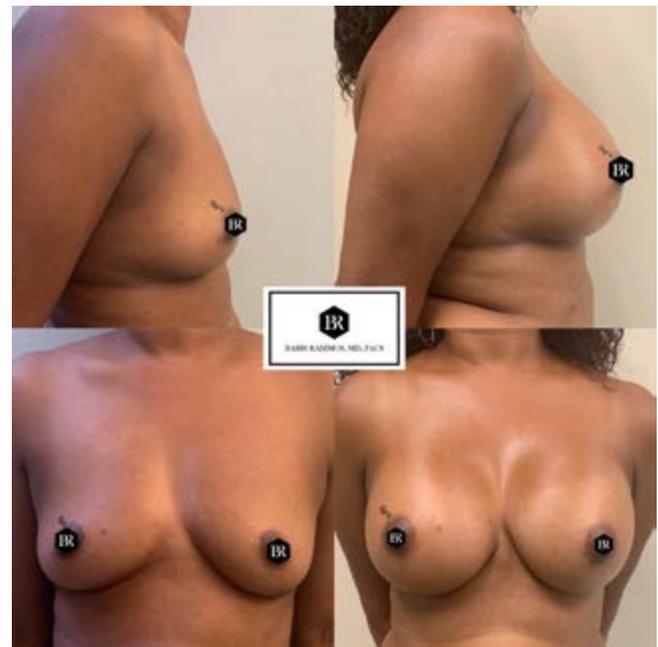


Figure 3 - Preoperative lateral and frontal views of a 40-year-old female with micromastia. Images obtained at 6 months follow up after a subfascial breast augmentation with a 450 ml smooth round implant with moderate projection

# OPTIMIZATION OF THE RESULT IN BREAST AUGMENTATION SURGERY, WITH CORRECT MARKING

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## Summary

**B**reast augmentation surgery is one of the most frequent cosmetic surgeries performed by plastic surgeons around the world.<sup>6</sup> Usually, scientific articles refer to the type of breast implant, the anatomical pocket to be used, the incision site and complications, but there is very little information on how to perform correct preoperative breast marking. We believe that this article is of special interest for the plastic surgeon who is beginning, as well as for those who have not yet been able to achieve adequate incision planning.

## Development

Many publications refer to the type of breast implant to be used, the type of surface, the pocket to be used and the different results, and a large number of articles are written on complications in breast augmentation surgery, but very few on how to do correct preoperative marking that allows the nipple areola-complex (NAC) to be placed in the most aesthetically pleasing position with the submammary incision in a non-visible place and on how to minimize postoperative asymmetries.<sup>5</sup>

Due to the aforementioned, we have developed a marking pattern that is standard for all patients regardless of the type of breast, the type of implant, and the pocket, allowing us to simultaneously detect asymmetries of the inframammary fold (IMF) and the NAC. This marking is easily understandable, reproducible and minimizes postoperative breast asymmetries, whether due to incorrect marking or an inadequate physical examination. We have used this pattern in 150 patients, of which 148 were female patients and 2 were male (transgender patients).

We have also designed and incorporated in the marking, an oblique reference path to be able to correctly locate the pivot point of the pectoralis major (for use in the retromuscular or dual plane pocket technique) and thus plan how far to perform the section of the pectoralis major muscle, thereby avoiding implant dynamism or implant palpation due to excessive muscle resection.

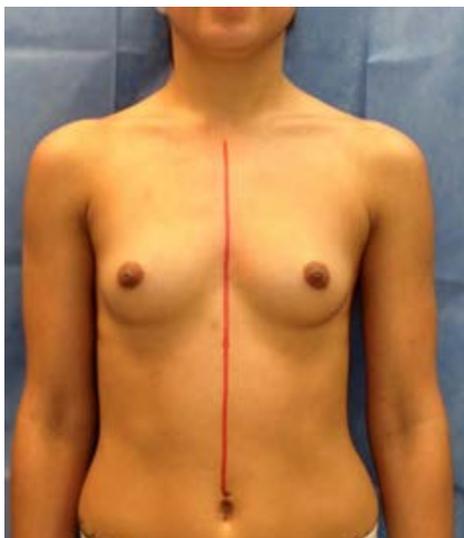


Figure 1

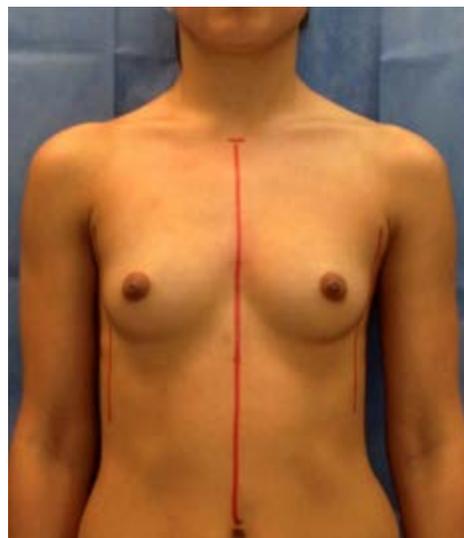


Figure 2

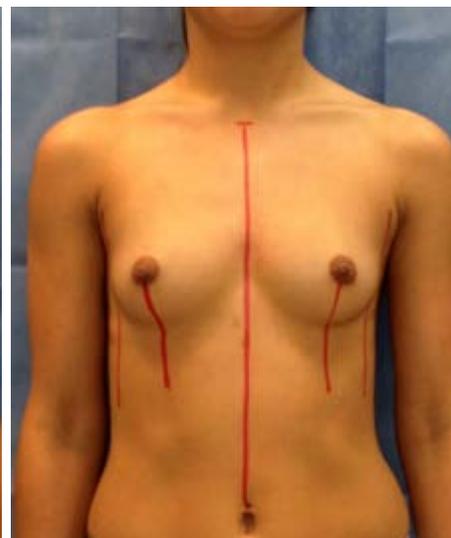


Figure 3

## Technique

### The vertical lines

With the patient in the supine position, the midline of the chest is marked first from the sternal fork to the umbilical area. It should be noted at this point that slight lateral-umbilical deviations are very frequent, for this reason it must be reached in these cases up to the vulvar fork. **(Figure 1)** Then the left and right anterior axillary lines are marked respectively **(Figure 2)** following with the marks of the right and left mediomamillary lines. **(Figure 3)**

### The horizontal lines

This time is of great importance, since the alignment of both IMF is performed. We take the lowest IMF as a reference and check that it is according to the implant to be placed. If you need a greater distance, we mark your new location and design the new IMF (depending on the volume to be implanted with a stretch test). From this new IMF, we draw the first

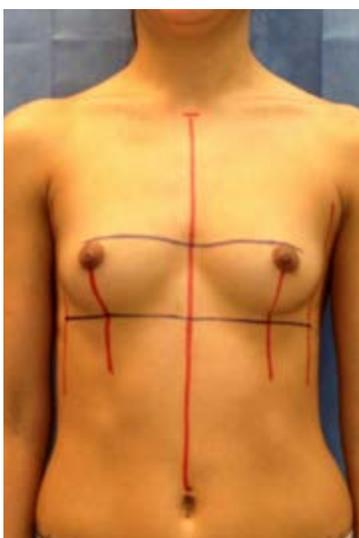


Figure 4

horizontal line that goes in a straight line to the intersection of the contralateral anterior axillary line. It is here, at the level of the opposite mamillary midline, where we must mark our new IMF. The second horizontal line is made on the upper edge of the right NAC and connects with the upper edge of the left NAC, thus detecting asymmetries of the NAC, which then with the oblique tracings we can reposition and correct by periareolar resections. **(Figure 4)**

### The oblique lines

The tracing is carried out from the sternal fork to the NAC. This time is of vital importance since a large number of asymmetries lie in the NAC, and it is here that we will carry out their symmetrization through the intersection of the oblique lines with the horizontal lines. **(Figure 5)**

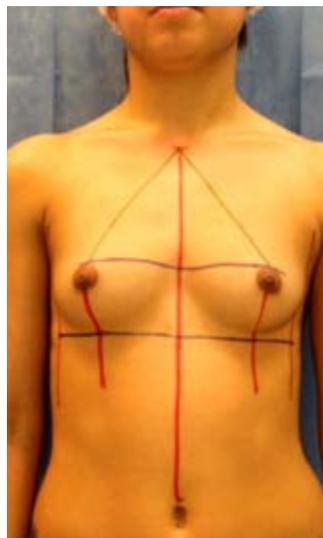


Figure 5

Finally, the last two oblique lines are made, the secondary oblique lines.

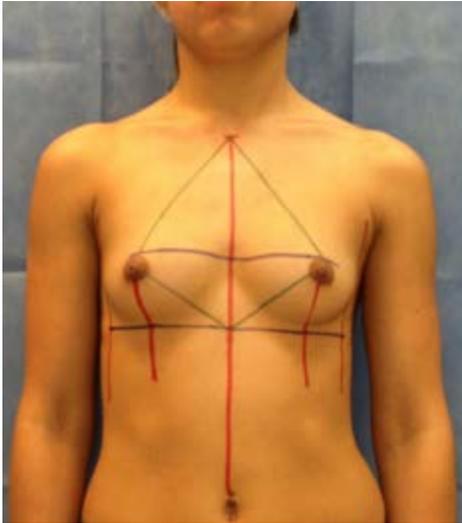


Figure 6

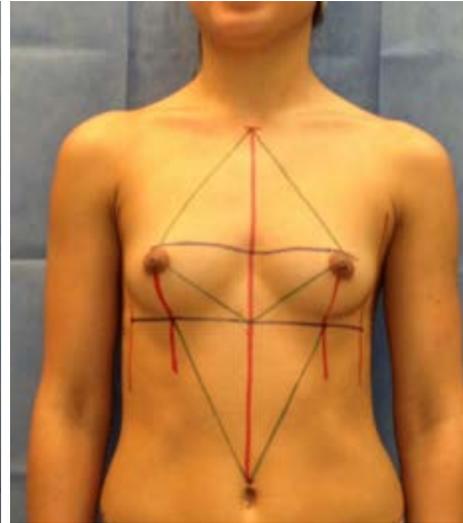


Figure 7

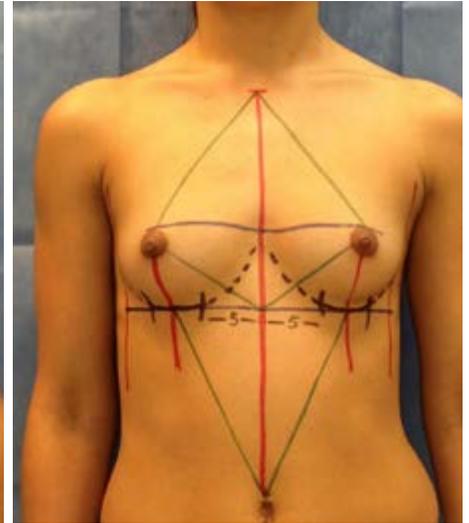


Figure 8

One of them starts in the NAC, following a clockwise direction. An oblique line is drawn from hour 4 and hour 8 (depending on the right or left NAC), towards the midline in the caudal direction to the intersection of the horizontal alignment line of the IMF and thus marking the pivot point on the section of the pectoralis major muscle and thus avoiding implant dynamism, by resection in less or implant palpation by resection in more. **(Figure 6)**

The tertiary oblique lines are the last lines to be drawn and are used to check the symmetry of the IMF.

Oblique lines are drawn from the mid-mamillary/IMF intersection, caudal to the umbilical midline. These must be of equal length, a fact that gives us the certainty of having both IMF aligned. **(Figure 7)**

It is precisely here where we must make our inframammary incision so that it is correctly located in the new IMF. **(Figure 8)**

## CONCLUSIONS

Systematic marking in breast augmentation surgery is easy to perform, reproducible in all types of implants, regardless of sex, and the pocket selected. In addition, routine marking allows minimizing the risk of asymmetric IMF, poorly positioned and visible inframammary incisions, and inadvertent asymmetric nipple areolar complex.

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# HOW I MARK MY PATIENTS FOR BREAST AUGMENTATION

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HORIA R. SICLOVAN, MD  
ROMANIA

**B**reast augmentation continues to be the world's most popular cosmetic procedure with 1,841,098 procedures being performed in 2018 and is the most common procedure in my practice using subfascial and muscle splitting biplane pockets and an inframammary approach.

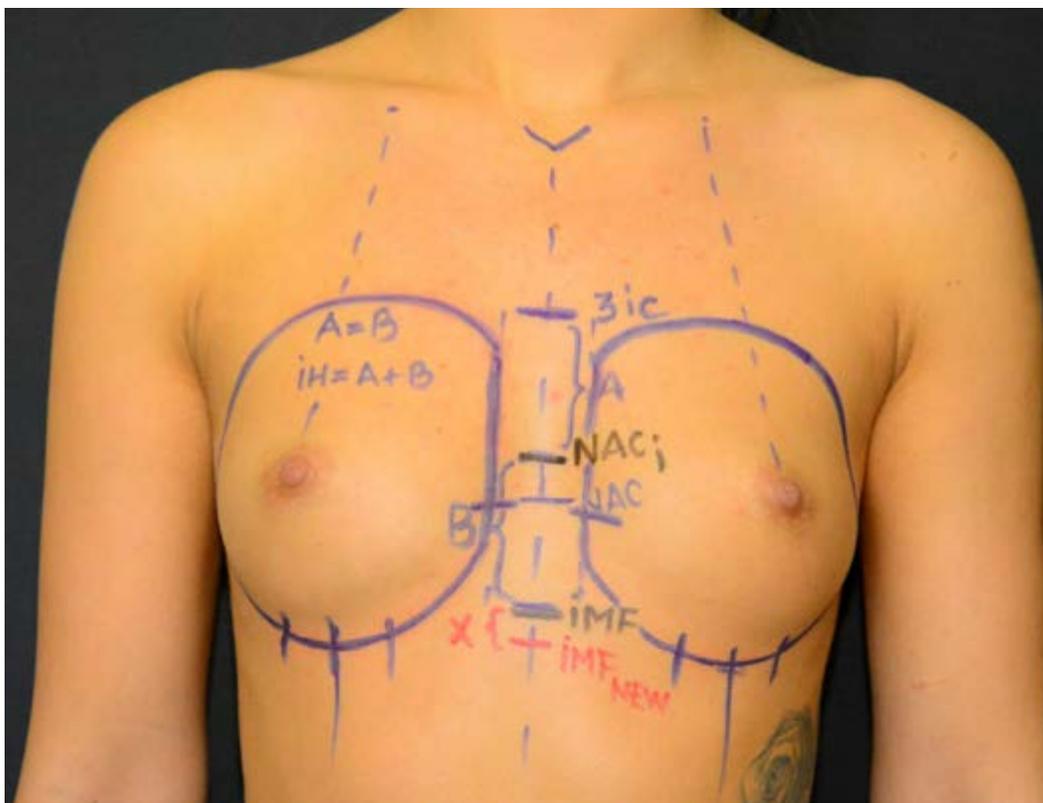




Figure 1



Figure 2

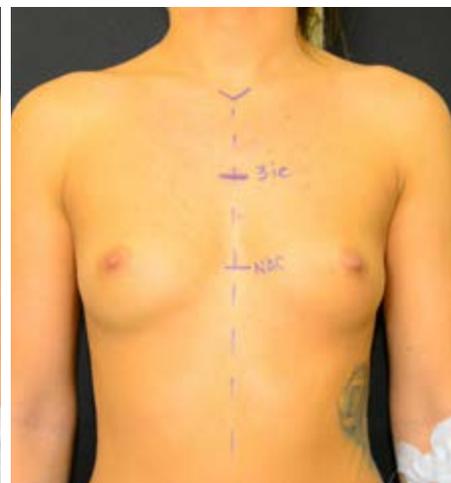


Figure 3

## Markings

The patient is marked in the upright standing position with the arms hanging loosely at the sides, and the following markings are made:

- The midsternal line extending into the navel (**Figure 1**)
- The midclavicular point (7 to 9 cm from the sternal notch)
- The nipple line-breast axis (from the midclavicular point down to the nipple, crossing the sub-mammary crease approximately 9 - 10 cm from the midsternal line)
- The 3rd intercostal space superiorly (**Figure 2**)
- The NAC's level (**Figure 3**)
- The NAC's level after augmentation (NACi) the patient places the palms on the head and the elbows laterally (**Figure 4**)
- 1.5 - 2 cm from the midline medially
- The anterior axillary line laterally
- The new inframammary fold is marked according to the ICE
- Principle to reproduce the 45:55 ratio fundamental to natural breast appearance (Reference 1) and comparison is made using a laser leveller to ensure symmetry (**Figure 5**).
- Two fundamental problems should always be kept in mind when doing the preoperative markings: how should the implant be vertically positioned in relation to the NAC (implant's height) and how long should the distance of skin be between the NAC and postoperative IMF.
- The area to be operated on is delineated as well



Figure 4



Figure 5

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# MEMBER SPOTLIGHT

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## PATRICIA GUTIERREZ-ONTALVILLA, MD, PHD



Dr. Gutierrez-Ontalvilla is a plastic surgeon based in Valencia, Spain, who is also currently serving as the Assistant National Secretary for Spain. She is well-known to both patients and surgeons around the world for her descriptive and informative videos on her Instagram handle @dragutierrezontalvilla. We are very pleased to present our interview with her.

- Nina Naidu, MD - Editor

**How and why did you decide to become a plastic surgeon? Did you have a mentor who encouraged you to enter the field?**

In Spain, when I studied medicine, I had only one class explaining what plastic surgery was. I wanted to become a heart surgeon like my uncle (and mentor) Ramiro. Nevertheless, he told me not to follow his steps because in his opinion,



*Photo with my uncle, Ramiro, a heart surgeon. In this photo, I was 21 and was about to start the 4th course of medicine. It's called in Spain "step of the equator."*

I was more creative and I was going to need a specialty that I could enjoy more. He told me how amazed he was when a plastic surgeon at his hospital performed a latissimus dorsi pedicled flap to

cover a gunshot injury and that story for me was like magic! That's when I decided I wanted to be a plastic surgeon.

**What is your main area of interest in plastic surgery? Please tell us a little about your practice - where it is, and the types of patients you see?**

I love performing lipofilling. My main interested areas are lipofilling in breast, composite breast augmentation, lipofilling in tuberous breast and intimate surgery. I live in Valencia, Spain. I work in Hospital La Fe performing pediatric plastic surgery and I also have my private practice. We recently moved to a bigger and more central office. Closeness to my patients is very important to me, so in this new office I



*My office*

decided to remove my office desk and use a lower table instead. I also replaced the visitor chairs with some cozy armchairs. To be honest, I didn't know how patients were going to react. They were surprised at first, but they got so comfortable that my office staff had to politely cut our conversation because

patients didn't want to leave. My patients go from minors (16-18 years old) to mature women. The young patients come accompanied by their parents and usually ask for breast and labia minora hypertrophy correction. The older patients want to refresh their physical appearance with natural results.

**We heard that you are finishing your PhD as well! Please tell us about the area of study you selected for your degree.**

I'm finishing my PhD. I hope to defend it in September 2020. My doctoral thesis is a clinical trial to demonstrate the benefits of adipose derived stem cells in patients with severe vulvar lichen sclerosis. So far, I have very promising results and I pledge to publish them once I defended my thesis.

**You are well-known to many of our members as you have a large following on social media. Your amazing videos in particular have become legendary. Can you tell us about the videos and who films them for you?**

The secret of my videos: I decided to start my social networks when I attended a lecture and they said that more than

80% of the information about plastic surgery was spread by non-plastic surgeons. That's when I became aware of our responsibility as plastic surgeons to show our specialty in an honest way. From that moment on, a member of my team records every surgery. He also owns a digital marketing agency and leaves space in his agenda to come with us to the operating room. He knows perfectly the ideas I want to transmit to my followers. I always say that my Instagram is like a window into my surgery suite. But there is a little secret: this well-trained team member is my husband!

**Please tell us about some of your favorite activities outside of work.**

I love snowboarding! Six years ago, I had an accident while skiing and hurt both knees badly. Doctors forbade me to ski again, but since I love the snow so much, I learned snowboarding in my 40s! For me, snowboarding is like a dance with the mountain. I'm also learning Krav maga. It's a form of self-defense and physical training developed by the Israeli army in the 1940s, based on the use of reflexive responses to threatening situations . . . but I'm still a rookie!



# HISTORY

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**RICCARDO F. MAZZOLA, MD - ITALY**  
Associate Editor, History of Medicine

## PLAGUE: THE MOST DEVASTATING EPIDEMIC DISEASE IN HISTORY. **PART ONE**



*Figure 1 - An astronomer scans a comet. From: Mezzavacca F. Bologna, 1701*

### Introduction

**D**uring the course of human history, man has always been confronted with recurrent episodes of epidemics, or pandemics. A pandemic is the global outbreak of an infectious disease. On the contrary, an epidemic is a disease which develops in a restricted area or region.

Throughout millenia, numerous episodes of epidemics/pandemics have occurred, caused either by bacteria (b) or virus (v), such as: plague (b), smallpox (b), cholera (b), typhus (b), leprosy (b), tuberculosis (b), measles (v), flu (v), poliomyelitis (v), ebola (v). Current pandemics are HIV/AIDS (v) and the 2019 coronavirus (v), declared a pandemic on 11 March 2020 by the World Health Organization (WHO).

In a crucial moment, when the world's population is fighting against the consequences of the coronavirus pandemic, I have been asked to trace the history of the plague, a disease which, with its continuous waves of recurrence, affected society for more than two millennia. The history of plague curiously overlaps that of the current coronavirus in some aspects.

Plague is responsible for some of the most devastating infectious diseases known to man, like the Black Death that occurred in the 14th century, when between 150 and 200 million people or about 30% and 50% of the European population died. Just to make a comparison, the Spanish flu epidemic which spread throughout Europe in 1918-1920, killed 50 million people - more than World War I - whereas HIV/AIDS killed about 35 million people, before treatment was found.

Caused by *Yersinia pestis*, a bacterium transmitted to human beings by rodents that harbour infected fleas, the disease appears in three different clinical forms: bubonic, septicemic and pneumonic. The bubonic type, the most common, whose typical symptoms are headache, high temperature (40°C), vomiting, pain, dehydration, and debilitation, is accompanied by lymph node swelling or buboes in the groin and axillae. Usually, affected individuals die in three or four days. Occasionally, some may recover. In the septicemic type, the bacilli enter the bloodstream

either directly or from the lymph node. Death occurs in three or four days. Finally, in the pneumonic plague, lungs are completely invaded by the bacilli. Dyspnea and lung edema are common signs. Death takes place in three or four days. In pneumonic plague, contagion is very high as the bacillus can be transmitted to other people with the droplets expelled by coughing or sneezing.

In the past, because of the aggressiveness of the epidemic, normal life and any sort of activity were totally blocked. Physicians did not understand the mechanism of diffusion of the disease. They developed theories ranging from “bad air,” to astral influence, to infected water, to deliberate poisoning. In many cities, wells and springs were sealed to

avoid the poisoning effect and inhabitants had to rely upon rain and river water. People lived in a sort of terror of recurrence, accusing each other of being poisoners or plague-spreaders. It even became dangerous to touch a door with the fingers, not to be accused of deliberately poisoning the building. The risk of being tortured, executed, burnt alive at the stake in the main square of the city or village after a summary trial, as were the witches of Salem, was significant.

In the following table, the most important episodes of plague epidemics/pandemics that occurred throughout the millenia are summarized.

## PLAGUE TIMELINE

No. of Deaths	% of the Population	Location	Date	Name	Notes
100,000	30-50%	Athens	430-426 BC	Plague of Athens	Origin: Africa Disease: Plague or thyphus (?)
25,000,000/ 100,000,000 recurrences included	40-50%	Eastern Roman Empire, Costantinople, Turkey, Iran	541-542 AD Recurrences until 750 AD	Plague of Justinian I First pandemic	Origin: China, Kazakhstan Disease: Plague ( <i>Yersinia pestis</i> ) Type: Bubonic, pneumonic, septicemic
150,000,000/ 200,000,000	30-50%	Asia, Europe, UK, Russia	1347-53 AD Recurrences until 1499 AD	Black Death Second pandemic	Origin: China Disease: Plague ( <i>Yersinia pestis</i> ) Type: Bubonic, pneumonic, septicemic
30,000	11%	Venice, Ragusa	1374-1403 AD	Epidemic	Origin: Black Death's recurrence Disease: Plague ( <i>Yersinia pestis</i> ) Type: Bubonic Note: the quarantine is established
280,000	60%	Northern Italy	1629-31 AD	Great plague of Milan	Origin: Landsknecht troops Disease: Plague ( <i>Yersinia pestis</i> ) Type: Bubonic
100,000	15%	London	1665-66 AD	Great plague of London	Origin: rats and infected fleas Disease: Plague ( <i>Yersinia pestis</i> ) Type: Bubonic
100,000	30%	Marseille (France)	1720-23 AD	Great plague of Marseille	Origin: ship with infected rats and fleas Disease: Plague ( <i>Yersinia pestis</i> ) Type: Bubonic
50,000/ 100,000	15-30%	Moscow	1770-72 AD	Plague of Moscow	Origin: Moldova, Ukraine Disease: Plague ( <i>Yersinia pestis</i> ) Type: Bubonic
24,000,000		China (Yunnan), India (Mumbai and Calcutta), South Africa (Cape Town), U.S.A. (California, Hawaii, Florida) Thailand (Bang- kok), Equador (Guayaquil)	1855-1960 AD	Third pandemic	Origin:China Disease: Plague ( <i>Yersinia pestis</i> ) Type: Bubonic and pneumonic

## The Plague of Athens (430-426 BC)

The Plague of Athens, the first epidemic reported in the literature, was fully described by the Greek historian Thucydides (ca. 460-400 BC). It occurred in 430 BC during the second year of the Peloponnesian war between Athens and Sparta. Sparta's army was stronger and the Athenians had to take refuge inside the city where they remained confined to save themselves. Suddenly, a dramatic event occurred: the onset of an epidemic of infectious disease. Coming from Africa, crossing Egypt and Libya, it entered Athens through the port of Piraeus and devastated the city, killing about 75,000/100,000 people, between 30% and 50% of the population. The overcrowding caused by the war exacerbated the epidemic. Pericles (495-429 B.C.), the leader of the Athenian troops, died from the disease in 429 BC, whereas Thucydides contracted the infection, but fortunately recovered. The epidemic returned twice more, in 429 BC and in the winter of 427-426 BC.

Traditionally, the disease was attributed to a bubonic plague. However, historians, by analyzing symptoms and epidemiology in Thucydides' report, like fever, inflammation of the eyes and of the viscera, redness of the throat and tongue with consistent bleeding, fetid breath, dehydration, debilitation and cardiovascular collapse, considered the nature of the disease as an epidemic typhus fever, or smallpox. However, the true nature of the epidemic will remain unknown.

## The Plague of Justinian (541-542 AD, with recurrences until 750 AD)

The Plague of Justinian, the first example of a pandemic, affected the Byzantine Empire which at that time spanned the Middle East and Constantinople (nowadays Istanbul) to Western Europe. It occurred in 541-542 AD, but did not dissipate immediately. On the contrary, it had multiple recurrences (over two centuries) until the middle of the eighth century. It was one of the most tragic events in the history of mankind, surpassed only by the so called Black Death, which devastated Europe in the fourteenth century.

Genetic studies have demonstrated that the origin of this disease was in Central Asia, China, Kazakhstan, and Kyrgyzstan, caused by *Yersinia pestis*, the same bacterium of the Black Death. Apparently, the epidemic was spread by fleas infected with *Yersinia pestis* through rats living on board merchants' ships. Possibly, all forms of plague were



Figure 2 - The visit of the plague doctor to the plague patient. Note the special gown and the sponge in front of the nose. From: Ketham J. Fasciculo Medicinae. Venice, 1495.

present. Deaths were estimated between 25 and 100 million people, including the recurrences, which corresponded to almost half of Europe's population at the time of the first outbreak. In Constantinople, a city with high population density, poor hygienic conditions, no safe drinking water, and lack of proper sanitation, the epidemic killed 10,000 people per day. This plague was named Justinian, after Justinian I (ca. 482-565 AD), the Eastern Roman Emperor at the time of the first outbreak. Justinian himself was affected by the disease, but survived.

## The Black Death (1347-1353 AD, with recurrences until 1499 AD)

### Introduction

The Great Plague, or Black Death, caused by *Yersinia pestis*, probably started in China about the middle of the fourteenth century. Then it traveled to the North of India, spreading out, without control, along the Silk Road with the Mongolian army to Crimea, Constantinople, Syria, Egypt, and Italy, leaving death and devastation in its tracks.<sup>1</sup> It reached Sicily with a commercial ship in 1347, and from there it expanded rapidly through Italy, France, Central Europe, and Poland. In Florence, the number of deaths reached 60,000; in Siena 70,000; in Venice 100,000; in Paris 50,000; in Avignon 60,000; in all Germany 1,500,000. In 1348, the plague entered England resulting in more than 100,000 deaths in London alone. In 1349, it appeared in Norway, Iceland, and by 1350 in Russia. Before that, in 1347, the disease traveled to Palestine, Lebanon, Damascus, Mecca and Baghdad.

Judging from the symptoms, the Black Death possibly included all forms of plague, not only the most common bubonic type. This may account for the rapid growth of the disease. During this period of time, it has been calculated that the number of deaths reached 150-200 million people, at least a quarter of the European population in a series of expanding waves of infection.

Around 1372, after a 25 year interval, a second wave of plague occurred in Constantinople and from there reaching Venice and Genoa with commercial ships, and then Middle Europe. It arrived again in London in 1499, when about 30,000 people died. Towns and villages were completely emptied.

The Black Death, probably the most devastating pandemic in the history of the world, never disappeared, periodically recurring also during the 16th century, bringing Europe terror and tragedy.

Many famous people died during the various plague epidemics: Alphonse XI, King of Spain in 1350; Galeazzo Visconti in 1378; Ladislaus, King of Bohemia and Hungary in 1437; the physician and philosopher Gentile da Foligno in 1348; the painters Domenico Ghirlandaio in 1494, Giorgione 1511, Perugino 1523, Hans Holbein the younger 1543, and Titian 1576.

#### *The scenario*

Why this continuous devastating expansion? Most European cities were considered unsafe for the total lack of sanitation measures. Garbage was piled high in front of the houses, the air was malodorous. Infected rats, mice, wild dogs, and pigs roamed the streets freely. Pure water was unavailable at home so canals had to be used instead. For personal cleaning, public baths were built. However, it was soon noted that they were at risk of contagion. The plague struck families living in poor, dirty city centers. This explains how it was possible for the epidemic to diffuse rapidly with surprising aggressiveness across Europe. To feel safer, people preferred to stay in the countryside with clean air, pure water, better hygiene and less possibility of contagion and thus they fled the cities.

#### *Astral origin of the plague*

Astrologic influence was regarded important in causing the plague outbreak. Some took the noxious vapors polluting the air as the result of the conjunction of Saturn, Jupiter and Mars that occurred on March 24, 1343 into account, whereas others blamed the tails of comets (**Figure 1**). Seven were seen between 1298 and 1314 and numerous others between 1500 and 1543.

#### *Measures of protection and prevention*

The physician Gentile da Foligno (about 1290-1348), who died of plague in 1348, wrote a manuscript *Consilia contra pestilentiam* (Suggestions against the plague) containing numerous recommendations for the plague patient. First of all, isolation of the sick, a measure particularly important to control the spreading of the epidemic, was strongly advocated. This occurred for the first time in the history of medicine. Then he favoured hygienic rules. They included light diet, use of fresh fruits, airing the rooms of the sick, continuous cleaning with rose water containing vinegar, burning of clothes, avoidance of public baths, no weddings, no sex. He suggested the smelling of various aromatic herbs, the washing of the mouth and nostrils with vinegar, the washing of hands, and the lighting of fires in the streets and squares, using the trash removed from the homes. Finally, use of big fires in front of the house to keep animals away was recommended.

#### *Visit to the plague patient*

Visiting a plague patient required great precautions.

To protect himself, the plague doctor wore a typical long white gown, completely covering his body, gloves, and a cap for the head and face. With the left hand he held a sponge full of vinegar mixed with aromas, like cloves or cinnamon, in front of the nasal airway. (**Figure 2**) The visit was rather short to avoid contagion; however, it included taking the pulse with the right hand and the traditional urine examination. At the end, the plague doctor prescribed a detailed therapy.

#### *Therapy*

Human beings have always been fascinated by the idea of a miraculous remedy, beneficial for every possible disease. Theriaca was the name given to this incredible mixture of more than 40 ingredients and Nicander, a Greek physician and herbalist, living about 280 BC., was the inventor. Others attributed it to Mithridates VI, King of Pontus (120-63 BC). Depending on its proportions, this universal antidote could be used either for the treatment of a certain disease or against it, for a specific remedy or cure-all. Basically, it contained opium (for pain relief), myrrh, saffron, ginger, cinnamon, castor oil, and numerous other ingredients. At the time of the Roman Emperor Nero, Andromachus, the

personal physician to the Emperor, added viper's flesh to the original Mithridate's recipe. Then, the total number of theriac's ingredients became 80. Theriac, the most expensive of medications, was difficult to prepare and subject to strict regulations and controls. Among the numerous plagues' medicines, theriac was one of the most popular, used either for prevention or for treatment.<sup>2</sup> Gentile da Foligno recommended that to enhance its efficacy against plague, it should be aged at least a year and contain viper's flesh. Supply was in the form of pills, syrups or electuaries (drug mixed into a pastry substance with honey for oral administration as a syrup). **(Figure 3)** Its manufacture was closely guarded by the apothecary, although many plague doctors were well informed about the ingredients. **(Figure 4)**

The external swellings (buboes) were softened with figs and cooked onions peeled and mixed with yeast and butter, then opened and treated like ulcers.

Finally, periodic bloodletting and purgatives were strongly encouraged, when circumstances were favourable.

A contemporary report on plague outbreak in Avignon

Guy de Chauliac (about 1300-1368) **(Figure 5)**, the renowned fourteenth century French surgeon, stayed in Avignon during the Black Death that struck in 1348, caring for numerous plague patients. He fell ill of bubonic plague, but miraculously recovered. Lets go through his detailed report, which appears under the title:



Figure 5 - Portrait of Guy de Chauliac (about 1300-1368).

*The great Mortality of 1348 and 1360 (Second Treatise, Doctrine Two, Chap. 5), one of the earliest records of plague, translated from "La Grande Chirurgie" (Great Surgery).*<sup>3</sup>

*"This mortality began in January and lasted seven months. It was of two kinds. The first lasted two months with continuous fever and blood spitting. Death occurred in three days. The second lasted for the rest of the time, also with continuous fever and abscesses and carbuncles on the external parts, mainly in the groins and axillae and death in five days. So contagious was the disease, especially with blood spitting,*

*that no one could approach or even see a patient without taking the disease. The father did not visit the son, nor the son the father. Charity was dead and hope abandoned. I called it the Great Mortality for it began in the Orient and shot its arrows against the world. It was so great that it scarcely left a fourth of the population. It was useless and shameful for the doctors, because they did not dare to visit the sick for fear of becoming themselves infected and if they visited them, they prescribed nothing, for all the afflicted died except a few who toward the end escaped with buboes. (...) For self preservation there was nothing better than to flee the region before becoming infected and to purge one's self with pills of aloe, to diminish the blood by bloodletting, and to improve the air by fire and to comfort the heart with*

*senna and things of good odor, and to soothe the humors with Armenian bole and to resist putrefaction by means of acid things. For the cure bloodlettings, evacuations and electuaries and cordials were used. The external swellings were softened with figs and cooked onions peeled and mixed with yeast and butter, then opened and treated as ulcers. The carbuncles were cupped, scarified and cauterized. As for me, in order to avoid infamy, I did not dare absent myself, but with continuous fear I preserved myself, so that I was able to apply the above mentioned remedies. Nevertheless, toward the end of the epidemic, I fell ill with a continuous fever and a swelling in the groin and was ill for six weeks.*

*I was in such grave danger that my companions thought I would die, but the abscess became ripe and was treated, as I said, and I survived by the Grace of God.*

*Later (...) after recrossing Germany and the Northern Countries, the mortality returned to us. (...) During this, I assembled and compiled one of those theriacal electuaries. (...). I took it like a theriac and I was protected, with the aid of God."*

Guy de Chauliac strongly supported the contagious nature of the disease. He wrote: "And so great was the contagion that one could catch the plague from the neighbor, not only by staying with him, but simply by looking at him." Pursuing



Figure 3 - The preparation of theriac. From: Brunschwig H. *Cirurgia*, Strassburg 1497.



Figure 4 - The visit to the apothecary shop to buy theriac. From: Brunschwig H. *Cirurgia*, Strassburg 1497.

the concept of the contagious nature of the infection, Guy regarded contact among people as the main cause of the spreading of the disease.

#### Prevention

Plague devastated Milan once again in 1374 causing one death in every three people. To prevent future recurrences, Bernabò Visconti issued a very strict code of regulations. As it was with leprosy, every ill plague person had to be taken out of the city, into the fields either to die or to recover. Those who attended a plague patient had to remain isolated for ten days. Something similar had already been promulgated in Venice in 1348 during the Black Death pandemic. With the second plague outbreak in 1374, the Great Council of Venice, aware of contagion, formulated new measures. Indeed, Venice was the first city to forbid merchants and travellers potentially infected with plague to pass through the town gates. The corpses of the plague victims had to be buried in remote islands of the Laguna. Much attention was paid to burial regulations. "To prevent the infection of the air" graves had to be large and deep. In 1403, Venice, following the laws introduced by Ragusa

(see below), established the world's first known maritime quarantine station, the so-called lazzaretto, on the Island of Santa Maria di Nazareth, separated from the city center. These preventive measures were important in making the recovery quicker and in controlling the expansion of the disease.

#### The origin of quarantine

In 1377, Ragusa (nowadays Dubrovnik, Croatia), a city on the Dalmatian coast belonging to the Republic of Venice, during another plague's outbreak, decided to extend the isolation period from thirty days (Italian, *trenta*) to forty days (Italian, *quaranta*) thus changing the name *trentina* to *quarantina*. The term quarantine, first introduced on that occasion, is now part of the modern lexicon.

Ships and sailors, coming from plague-infested areas, had to remain in detention on surrounding islands for forty days. Visiting or disembarking were forbidden under penalty of remaining there for forty days. After the quarantine, ships were emptied, fumigated and in some cases, goods destroyed, whereas sailors undressed and were exposed to the sun.

The rationale for changing the isolation period from thirty days to forty days was not by chance, but the result of several factors: medical, alchemical and religious. Forty days was regarded as the limit of separation between acute and chronic disease. Forty days, from an alchemical point of view, corresponded to the so-called philosophical month, considered the time necessary to obtain more durable changes. Finally, forty days was the biblical flood, the period Moses remained on Mount Sinai, and Jesus in the desert.

It was the increasing attention paid to contagion during the late fifteenth and early sixteenth centuries, and in particular to the quarantine isolation, that led Gerolamo Fracastoro (1478-1553) to publish his masterly work *De contagionibus et contagiosis morbis* (On contagions and contagious diseases) in 1546. Fracastoro laid the foundations of the modern doctrine of infectious diseases.

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END OF PART ONE

(To be continued in the September issue of *ISAPS News*)



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21. **ECUADOR**  
Sociedad Ecuatoriana de Cirugía Plástica, Reconstructiva y Estética (SECPRE)
22. **EGYPT**  
Egyptian Society of Plastic and Reconstructive Surgeons (ESPRS)
23. **ESAPS**  
European Society of Aesthetic Plastic Surgery (ESAPS)
24. **ESPRAS**  
European Society of Plastic, Reconstructive and Aesthetic Surgery (ESPRAS)
25. **FINLAND**  
Suomen Esteettiset Plastikkirurgit ry. (SEP)
26. **FRANCE**  
Société Française des Chirurgiens Esthétiques Plasticiens (SOFCEP)
27. **GEORGIA**  
Georgian Society of Plastic Reconstructive and Aesthetic Surgery (GEOPRAS)
28. **GERMANY**  
Deutsche Gesellschaft der Plastische, Rekonstruktive und Aesthetische Chirurgie, e.V. (DGPRÄC)
29. **GERMANY**  
Vereinigung der Deutschen Aesthetisch Plastischen Chirurgen (VDAPC)
30. **GREECE**  
Hellenic Society of Plastic, Reconstructive and Aesthetic Surgery (HESPRAS)
31. **GUATEMALA**  
Asociación Guatemalteca de Cirugía Plástica Estética y Reconstructiva (AGCOPER)
32. **HUNGARY**  
Hungarian Society for Plastic, Reconstructive and Aesthetic Surgery (HSPRAS)
33. **INDIA**  
Indian Association of Aesthetic Plastic Surgeons (IAAPS)
34. **INDONESIA**  
Indonesian Association of Plastic Reconstructive and Aesthetic Surgeons (InaPRAS)
35. **IRAN**  
Iranian Society of Plastic and Aesthetic Surgeons (ISPAS)
36. **IRELAND**  
Irish Association of Plastic Surgeons (IAPS)
37. **ISAPS**  
International Society of Aesthetic Plastic Surgery (ISAPS)
38. **ITALY**  
Associazione Italiana di Chirurgia Plastica Estetica (AICPE)
39. **ITALY**  
Società Italiana di Chirurgia Plastica Ricostruttiva ed Estetica (SICPRE)
40. **JAPAN**  
Japan Society of Aesthetic Plastic Surgery (JSAPS)
41. **JORDAN**  
Jordanian Society for Plastic and Reconstructive Surgeons (JSPRS)
42. **KAZAKHSTAN**  
Kazakhstan Society of Aesthetic and Plastic Surgery (NSAPS)
43. **KOREA**  
Korean Society of Aesthetic Plastic Surgery (KSAPS)
44. **KUWAIT**  
Kuwait Society of Plastic Surgeons (KSPS)
45. **LEBANON**  
Lebanese Society of Plastic, Reconstructive, and Aesthetic Surgery (LSPRAS)
46. **MALAYSIA**  
Malaysian Association of Plastic, Aesthetic and Craniomaxillofacial Surgeons (MAPACS)
47. **MEXICO**  
Asociación Mexicana de Cirugía Plástica Estética y Reconstructiva (AMCOPER)
48. **MOROCCO**  
Société Marocaine des Chirurgiens Esthétiques Plasticiens (SOMCEP)
49. **NETHERLANDS**  
Nederlandse Vereniging voor Esthetische Plastische Chirurgie (NVEPC)
50. **NICARAGUA**  
Asociación Nicaragüense de Cirugía Plástica (ANCP)
51. **NORWAY**  
Norwegian Society of Aesthetic Plastic Surgery (NSAP)
52. **OMAN**  
Omani Society of Plastic, Reconstructive and Aesthetic Surgery (OSPRAS)
53. **OSAPS**  
Oriental Society of Aesthetic Plastic Surgery (OSAPS)
54. **PAKISTAN**  
Pakistan Association of Plastic Surgeons (PAPS)
55. **PANAMA**  
Asociación Panameña de Cirugía Plástica, Estética y Reconstructiva (APCOPER)
56. **PERU**  
Sociedad Peruana de Cirugía Plástica (SPCP)
57. **PHILIPPINES**  
Philippine Association of Plastic, Reconstructive and Aesthetic Surgeons (PAPRAS)
58. **POLAND**  
Polish Society of Plastic, Reconstructive and Aesthetic Surgery (PSPRAS)
59. **PORTUGAL**  
Sociedade Portuguesa de Cirurgia Plástica Reconstructiva e Estética (SPCPRE)
60. **ROMANIA**  
Romanian Aesthetic Surgery Society (RASS)
61. **RUSSIA**  
Northeastern Society of Plastic and Reconstructive Surgeons (NESPRS)
62. **RUSSIA**  
Russian Society of Plastic, Reconstructive and Aesthetic Surgery (RSPRAS)
63. **SAUDI ARABIA**  
Saudi Plastic Surgery Care Society (SPSCS)
64. **SERBIA**  
Serbian Society of Aesthetic Plastic Surgeons (SRBSAPS)
65. **SERBIA**  
Serbian Society of Plastic, Reconstructive, and Aesthetic Surgery (SRBPRAS)
66. **SINGAPORE**  
Singapore Association of Plastic Surgeons (SAPS)
67. **SOUTH AFRICA**  
Association of Plastic, Reconstructive and Aesthetic Surgeons of Southern Africa (APRASSA)
68. **SPAIN**  
Asociación Española de Cirugía Estética Plástica (AECEP)
69. **SPAIN**  
Sociedad Española de Cirugía Plástica Reparadora y Estética (SECPRE)
70. **SWEDEN**  
Svensk Förening för Estetisk Plastikkirurgi (SFEP)
71. **SWITZERLAND**  
Schweizerische Gesellschaft für Aesthetische Chirurgie (SGAC)
72. **SWITZERLAND**  
Swiss Society of Plastic, Reconstructive and Aesthetic Surgery (SSPRAS)
73. **TAIWAN**  
Taiwan Society of Aesthetic Plastic Surgery (TSAPS)
74. **TAIWAN**  
Taiwan Society of Plastic Surgery (TSPS)
75. **THAILAND**  
Society of Aesthetic Plastic Surgeons of Thailand (THSAPS)
76. **TURKEY**  
Turkish Society of Aesthetic Plastic Surgery (TSAPS)
77. **UKRAINE**  
Ukrainian Association of Plastic, Reconstructive and Aesthetic Surgeons (UAPRAS)
78. **UKRAINE**  
Ukrainian Society of Aesthetic Plastic Surgeons (USAPS)
79. **UNITED ARAB EMIRATES**  
Emirates Plastic Surgery Society (EPSS)
80. **UNITED KINGDOM**  
British Association of Aesthetic Plastic Surgeons (BAAPS)
81. **UNITED KINGDOM**  
United Kingdom Association of Aesthetic Plastic Surgeons (UKAAPS)
82. **UNITED STATES**  
American Society for Aesthetic Plastic Surgery, Inc. (ASAPS)
83. **VENEZUELA**  
Sociedad Venezolana de Cirugía Plástica, Reconstructiva, Estética y Maxilofacial (SVCPREM)
84. **VIETNAM**  
Vietnamese Society of Aesthetic and Plastic Surgery (VSAPS)

# ISAPS Welcomes New Members

March 2020 through May 2020

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Thiago MORAIS, MD  
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Ahmed KHAZBAK, MD, ABOPRS,  
FEBOPRAS, MSc (Microsurg.)  
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Ovidiu IVAN, MD  
Oana MANCIU, MD  
Luana NUVOLI, MD  
Veronica ROMANESCU, MD  
Corina STEFAN, MD

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Adranik CHAKRIAN, MD

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Hasan ALAJMI, MD  
Ezdehar FALLAHDAR, MD  
Ehab NASSAR, MD

**SINGAPORE**

Wei Chen ONG, MD

**SOUTH AFRICA**

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Diolanda DE ABREU, MD  
Itziar MADRAZO, MD  
Jose Luis MORIENTE, MD

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**TUNISIA**

Slim HARBI, MD

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Mahmut YILMAZ, MD

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Caghan BENLI, MD

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Hazim SADIDEEN, MD  
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# MEETINGS CALENDAR



Dates: **Every Friday, June 20 - December 19, 2020**  
Topic: Weekly topics in Aesthetic Plastic Surgery  
Origin: London, UK  
Time: 1300 UTC  
Link to register:  
<https://www.isaps.org/webinars/master-class-webinar-series/>  
Time Zones: To find your time [click here](#)

## POSTPONED TO 2021

### 15TH BODY LIFT COURSE – ISAPS ENDORSED

Dates: June 2 – 4, 2020  
Location: Geneva, SWITZERLAND  
Venue: Hotel President Wilson  
Contact: Charles-Henri Pascal  
Tel: +33 683 689 907  
Email: [charles@ipsac.eu](mailto:charles@ipsac.eu)  
Website: <http://www.ipsac.eu/Courses/Live-Surgery-Course>

## POSTPONED TO 2021

### LIVE SURGERY COURSE - BODY CONTOURING – ISAPS ENDORSED

Dates: June 10 – 12, 2020  
Location: Lyon, FRANCE  
Venue: Hotel Marriott Lyon and Clinique du Parc  
Contact: Charles-Henri Pascal  
Tel: +33 683 689 907  
Email: [charles@ipsac.eu](mailto:charles@ipsac.eu)  
Website: <http://www.ipsac.eu/Courses/Live-Surgery-Course>

## COURSE CANCELLED

### 18TH INTERNATIONAL BEAULI SYMPOSIUM – ISAPS ENDORSED

Fat Graft & Stem Cells  
Dates: June 12-13, 2020  
Location: Berlin, GERMANY  
Email: [info@park-klinik-birkenwerder.de](mailto:info@park-klinik-birkenwerder.de)  
Clinic Website: [www.park-klinik-birkenwerder.de](http://www.park-klinik-birkenwerder.de)  
Meeting website: <https://www.beauli.de/>

## COURSE CANCELLED

### ISAPS COURSE - SPAIN

Marbella International Plastic Surgery Summer School (MIPSS)  
Dates: June 18-20, 2020  
Location: Marbella, SPAIN  
Contact: Vanessa Garcia  
Tel: +34-653-503-549  
Email: [info@mipss.eu](mailto:info@mipss.eu)  
Website: [www.isapscourse.es](http://www.isapscourse.es)

### ISAPS SYMPOSIUM - CHILE

Dates: August 7-8, 2020  
Location: Santiago, CHILE  
Venue: Hotel Plaza El Bosque Nueva Las Condes  
Contact: Dr. Montserrat Fontbona  
Tel: 56-226-320-714  
Email: [soccpchile@gmail.com](mailto:soccpchile@gmail.com)  
Website: <http://www.sccp.cl>

### ISAPS COURSE - HUNGARY

Dates: October 29-31, 2020  
Location: Debrecen, HUNGARY  
Venue: Kölcsey Convention Center Debrecen  
Contact: Dr. Csaba Molnár  
Email: [convention@convention.hu](mailto:convention@convention.hu)  
Tel: (+36 1) 299 0184  
Website: <http://www.isaps-debrecen2020.hu/>

### GLOBAL AESTHETICS 2020

Dates: November 5-8, 2020  
Location: South Beach, Miami, Florida, USA  
Venue: Loews Miami Beach Hotel  
Telephone: US Toll free: 1-859-202-3801  
Email: [dee@gaconference.com](mailto:dee@gaconference.com)  
Website: <https://globalaestheticsconference.com/>

### TD ABS, THE MEETING – ISAPS ENDORSED

Dates: November 6 – 8, 2020  
Location: Bogota, COLOMBIA  
Venue: Estelar Hotel & Convention Center, Cartagena  
Contact: Johana Poveda/Commercial Director  
Tel: +57 310 262 8693  
Email: [info@tdabsmeeting.com](mailto:info@tdabsmeeting.com)  
Website: <https://tdabsmeeting.com>

### ISAPS F.A.S.T. ADVANCED 2020 – COMPLICATIONS AND DIFFICULT CASE MANAGEMENT

Dates: November 20-22, 2020  
Topic: BodyAdvanced  
Location: Moscow, Russia  
Venue: Golden Ring Hotel, Smolenskaya str., 5  
Contact: Anna Pimenova  
Tel: +7 (495) 287-46-45  
Fax: +7 (495) 287-46-45  
Email: [orgcom@isapsfast.ru](mailto:orgcom@isapsfast.ru)  
Website: [isapsfast.ru](http://isapsfast.ru)

### CLOSED ATRAUMATIC RHINOPLASTY COURSE II – ISAPS ENDORSED

Dates: November 28-29, 2020  
Location: Istanbul, TURKEY  
Venue: Online  
Contact: Dr. Suleyman Tas  
Tel: +90 530 600 8271  
Email: [info@drsuleymantas.com](mailto:info@drsuleymantas.com)  
Website: [www.drsoleymantas.com/course](http://www.drsoleymantas.com/course)

**INTERNATIONAL FRESH CADAVER AESTHETIC  
DISSECTION COURSE ON FACIAL ANATOMY AND  
RHINOPLASTY**

Dates: 21-23 January 2021  
Location: Liege, BELGIUM  
NOTE: Limited to 32 participants  
Contact: Mrs. Anne-Marie Gillain  
Tel: 32 (0)4 242-5261  
Fax: 32 (0)4 366-7061  
Email: [amgillain@chu.ulg.ac.be](mailto:amgillain@chu.ulg.ac.be)  
Website: [www.isapscourse.be](http://www.isapscourse.be)

**ISAPS.AESURG 2021 – ISAPS ENDORSED**

Date: February 9-13, 2021  
Location: Surajkund, Delhi NCR, INDIA  
Venue: Taj Vivanta  
Contact: Dr. Rakesh Kalra  
Tel: +91 9760077000  
Email: [isaps.aesurg2021@gmail.com](mailto:isaps.aesurg2021@gmail.com)  
Website: [www.aesurg2021.com](http://www.aesurg2021.com)

**55TH BAKER GORDON EDUCATIONAL SYMPOSIUM –  
ISAPS ENDORSED**

Date: February 11-13, 2021  
Location: Miami, FL, USA  
Venue: Hyatt Regency Hotel  
Contact: Mary Felpeto  
Tel: 1-305-854-8828  
Fax: 1-305-854-3425  
Email: [maryfelpeto@bellsouth.net](mailto:maryfelpeto@bellsouth.net)  
Website: [www.bakergordonsymposium.com](http://www.bakergordonsymposium.com)

**ISAPS COURSE – GREECE**

Dates: April 1-3, 2021  
Location: Athens, Greece  
Venue: Radisson Blu Park Hotel  
Contact person: Vicky Delidimitriou  
Email: [vdelidimitriou@noufio.gr](mailto:vdelidimitriou@noufio.gr)  
Tel: +30 210 – 2775219  
Fax: +30 210 – 2714437  
Website: [www.isapscourseathens2020.gr](http://www.isapscourseathens2020.gr)  
Organizing Secretariat: NOUFIO [www.noufio.gr](http://www.noufio.gr)

**BARCELONA RHINOPLASTY 2ND COURSE – ISAPS  
ENDORSED**

Date: April 28 – May 1, 2021  
Location: Barcelona, SPAIN  
Venue: Centro Medico Teknon  
Contact: Silvia Vila  
Tel: 34 9 33933 128  
Email: [svila@vilarovira.com](mailto:svila@vilarovira.com)  
Website: <http://www.barcelonarhinoplasty.com>

**15TH INTERNATIONAL FRESH CADAVER COURSE ON  
FACELIFT AND PERI-ORBITAL PROCEDURES**

Dates: June 4-5, 2021  
Location: Utrecht, NETHERLANDS  
Venue: Medical University  
Contact: Jacques van der Meulen  
Tel: +31 641 461 496  
Email: [drvdMeulen@gmail.com](mailto:drvdMeulen@gmail.com)  
Website: <http://www.drvtulp.nl>

**33RD ANNUAL CONGRESS OF SOFCEP**

Dates: June 10-12, 2021  
Location: Les Sables d'Olonne, FRANCE  
Venue: Centre de Congres des Atlantes  
Contact: SOFCEP  
Tel: +33(0)53 431 0134  
Email: [sofcep@vous-et-nous.com](mailto:sofcep@vous-et-nous.com)  
Website: <http://www.chirurgiens-esthetiques-plasticiens.com/congres-sofcep-2/?lang=en>

**ISAPS SYMPOSIUM – GEORGIA**

Date: Final new dates pending  
Location: Tbilisi, GEORGIA  
Venue: The Biltmore Tbilisi Hotel, 29 Shota Rustaveli Ave, Tbilisi 0108  
Contact Name: Mariam Tsivtsivadze  
Tel: +995 322 420 420  
Email: [hello@kolkhida.org](mailto:hello@kolkhida.org)  
Website: [www.kolkhida.org](http://www.kolkhida.org)

**SECONDARY OPTIMIZING AESTHETIC SURGERY  
SYMPOSIUM (SOS) 2021**

Dates: September 7-8, 2021  
Location: Vienna, AUSTRIA  
Venue: Andaz Belvedere Vienna Hotel  
Contact: Barbara Boeld  
Tel: +49-89-18-90460  
Email: [congress@bb-mc.com](mailto:congress@bb-mc.com)  
Website: <http://www.sos2021.eu>

**25TH WORLD CONGRESS**

Dates: September 9-12, 2021  
Location: Vienna, AUSTRIA  
Venue: Austria Center Vienna  
Contact: Barbara Boeld  
Tel: +49-89-18-90460  
Email: [congress@bb-mc.com](mailto:congress@bb-mc.com)  
Website: <https://www.isapsvienna2021.com/>

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## ISAPS EXECUTIVE OFFICE STAFF

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**NEW DATES!**  
**WORLD CONGRESS**  
Vienna | Sept. 9-12, 2021

INTERNATIONAL SOCIETY OF AESTHETIC PLASTIC SURGERY

**The World Congress has been postponed to**  
**SEPTEMBER 9 - 12, 2021**  
**VIENNA, AUSTRIA**

After careful thought and consideration of the ongoing situation with coronavirus (COVID-19), the ISAPS Board of Directors has decided to postpone the upcoming ISAPS World Congress in Vienna, Austria to September 9-12, 2021. We understand that this change is an inconvenience, but we are confident that it is the right decision.

As an international organization, it is our goal to provide a stimulating environment that both features speakers from around the world and is accessible to our members from over 100+ countries. At the moment, travel bans, limits on event sizes, and social distancing measures are still in place in much of the world, and will likely remain in many regions. In light of this, we feel it is best to postpone the ISAPS World Congress for another year in order to ensure that our members will be able to join us in Vienna, no matter where they are located.

Thank you for your cooperation and understanding during these trying times. Despite this difficult situation, we appreciate your support and are working hard to ensure the 25th ISAPS World Congress is a success.

**We look forward to welcoming you in Vienna for the ISAPS World Congress in 2021!**

[www.isapsvienna2021.com](http://www.isapsvienna2021.com)