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SCIENTIFIC ARTICLES

Combining implants and lipostructure in mammoplasty

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ABSTRACT

In this work we show our experience in combining lipostructure and implants. After six year of working in single lipostructure, there are some cases where we could not do it.

For example in very thin patients, also in patients who wish a complete fill upper pole, that lipostructure will not get it or in patients that do not accept a massive lipostructure for different reasons.

So in the same way we do not want to dispense the advantages that lipostructure give us in fill inter mammary sulcus or inferior mammary pole, over a single implants.

It is the reason for combining these two techniques.

Besides that, we expose the techniques and particularities, the indications in relationship with lipostructure without implants. And we explain the more frequent complications.

Key words

Inter mammary fat graft, separate breast and implants.

INTRODUCTION

After some years of doing breast augmentation with implants and lipostructure separately and after having seen the advantages of every techniques. I thought: Why do we not combine both?

It is really, that in some patients it is not indicated an extensive liposuction, because they are thin, or they have very flaccid skin, but at the same time the distance between their breast are very wide and with an only implant will not solve this problem.

Also we have tuberous or pseudo tuberous breast with similar problems that it can be resolved with lipostructure and implants.

On the other hand, we have patients with a very good indication for lipostructure but the most important thing for these is the upper pole fill that we can only solve with an implant[1].

For all these reasons we decided to combine both techniques.

Now I want to introduce this article with a brief history about fat graft and implants.

The first fat graft in breast was carried out in (1895) by Dr Czerny[2], He used a large lipoma to fill a defect in the breast following resection of a benignly mass. The breast transplanted, showed darkening of colour and smaller in volume than the opposite side.

After him, many others have used this technique like Dr. May (1941)[3], using free fat auto graft. Peer (1956)[4] used a dermis fat graft. Shorcher (1957)[5] reported autogenous free fat transplantation to treat hypomastia. He noted that if the graft was in several pieces, it would receive better nourishment for the recipient site. Bircoll[6] (1984) was the first to inject autologous fat from liposuction around the breast. He used small droplets of fat (1 ml for each deposit), with a maximum of approximately 130 ml.

After him, others surgeons used this technique until 1992 the year in that (APSPRS) American Society of Plastic and Reconstructive Surgery produced a position Statement, which stated that the society "strongly condemns the use of fat injections for breast enlargement".

It is for this reason that the mammary implant over more than ten years (1992-2003) was the only way for breast enlargement.

Finally the American Plastic Surgery Association in 2003 made a release, supporting this technique.

Curiously after ten years this technique has not been popularized like it had been expected.

The history of mammary implants it is totally different. It was more popular from the beginning and quickly had a great recognition for the most of plastic surgeons from the year 1961. In that, the American plastic surgeons, Thomas Cronin and Frank Gerow, and the Dow Corning Corporation, developed the first silicone breast prosthesis, filled with silicone gel.

The first augmentation mammoplasty was performed in 1962 using the Cronin–Gerow Implant, prosthesis model 1963.

After all that in 1964, the French company Arion Laboratories developed and manufactured the saline breast implant, filled with saline solution, and then introduced it for use as a medical device in 1964.

Since this time more than 50 years have past and the mammary implants are more and more popular despite many problems known about the implant industry, remember (Trilucent, P.I.P, Cereform) and the itself implant complications.

Perhaps the marketing of every technique is different, and the implant industry would have to say something about this.

About the association of implants and lipostructure in the same patient I did not find, too much in medical literature. Only a work from Christophe Ho Quoc[7] "breast asymmetry and pectus excavatum improvement with fat grafting" in which combines the two techniques and the Benito-Ruiz work[8].

It was a surprise for me that so little literature is available in this field.

MATERIAL AND METHODS

I began to combine lipostructure and implants just a year before. My experience in this field has been limited and I have only fourteen patients that I have operated on.

But I have found some interesting aspects in this technique.

There are two cases that improve the results of implants.

First, in distant breast between itself. In these cases if you put the implant in subpectoral plane you will have a limitation in the muscular detachment, near the insertion, and you can produce a muscular damage if pretend to put the implant very close to each other. In this case it can be very satisfactory the inter mammary lipostructure.

Secondly, in tuberous breast, thanks to lipostructure you can get better fill of inter mammary zone and lower pole.

The most patients were under forty years of age. So when I carried out only lipostructure I had never operated on patients that were older, in order to avoid mammography distortion problems.

On the contrary, when I used the combined technique that I only put the graft in inter mammary space or lower pole and less fat amount then in regular lipostructure, I operated on patients over forty without any mammography distortions problems.

Besides you need less fat grafting, avoiding flaccidity problems in liposuction.

All these operations were looking to improve aesthetic results.

The harvesting zones have been wherever in the same places like a regular liposuction. However, I took the graft more frequently from the belly and high hips, for my comfort (I keep patient in supine position).

The infiltration technique is the Coleman[9] method. I adjust my technique to use the original method without making modifications.

The local anaesthesia is tumescent technique (Lidocaine 5 ml to 5% and 0.5 mg of adrenaline in 500 ml of physiological serum) in harvesting areas, (1\1 relation. 500ml of tumescent anaesthetic for 500 ml of suction) while in grafting zones we used only a Little amount of local anaesthetic solution to get vasoconstriction (1\10 relation).

The local anaesthesia technique is always accompanied by deep sedation or general anaesthesia by anaesthetists.

The amount of fat graft to infiltrate is from 50-100 ml in each breast. But we need to get about 200-400 ml, because we lose about 50% by centrifugation and decantation.

The first advantage of this combined technique is that we need just one surgical time, unlike that of the breast lipostructure single[1] (always two times in our practice).

In the same way that in lipostructure we make liposuction by empty pump in a 0.6 bar. Because if you use a high suction pressure there will be damaged tissue.

The fat obtained is collected in a sterile container and then is subjected to a process of decantation and centrifugation in centrifuge (Orto Alresa brand, Digitor 20 model) that allows centrifuge 4, 60 ml syringes of fat at once.

We use between 1800-2200 p.m.r for three minutes (the centrifuge´s radius is 10 cm).

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This is a Relative Centrifugal Force (R.C.F) of between 400-525 (G).

The varying use (R.C.F) depends on the cell fragility.

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If after the first centrifugation you get a lot of oil in the supernatant the best would be decrease the (R.C.F) to get a suitable graft.

We use intra and postoperative antibiotic (cephalosporin), and the combination of two antiinflammatory analgesics because unlike only lipostructure and the association with implants are painful (usually dexketoprofen and metamizol).

I always use gastric protection.

The patients dressing, with acupressure clothes for a period of three weeks.

After the operation we put an elastic thoracic band in the upper pole breast for at least one week or more. With this fact we try to adjust the implant at the lower pole avoiding the up emigration. I think that it is a very important aspect especially in totally submuscular implant.

We recommended lymphatic drainage massage for four weeks, at the rate of two for every week, in liposuction places.

We practice mammography preoperative and postoperative ultrasound four months after the operations in every patient.

SURGICAL TECHNIQUE

The first step we do is the liposuction as I explained before.

The harvest zone is usually in one place. The most common places are the abdominal or upper hip, but it can be taken from anywhere.

After harvesting we prepare the fat by centrifugation, and finally we do infiltration.

The technique that we use is the Coleman´s method, and the infiltration spot is better if it is carried out in submammary sulcus in one or two spots.

We infiltrated in a crisscrossing mode.

The amount it's about 40-50 ml in each breast, in the cases where the breast are far apart, and approximately 90-100 ml, if they are tuberous breast.

In a second time we proceed to put the implant.

We used interchangeable anatomic or round implant in different profiles or sizes in relationship with every patient´s case.

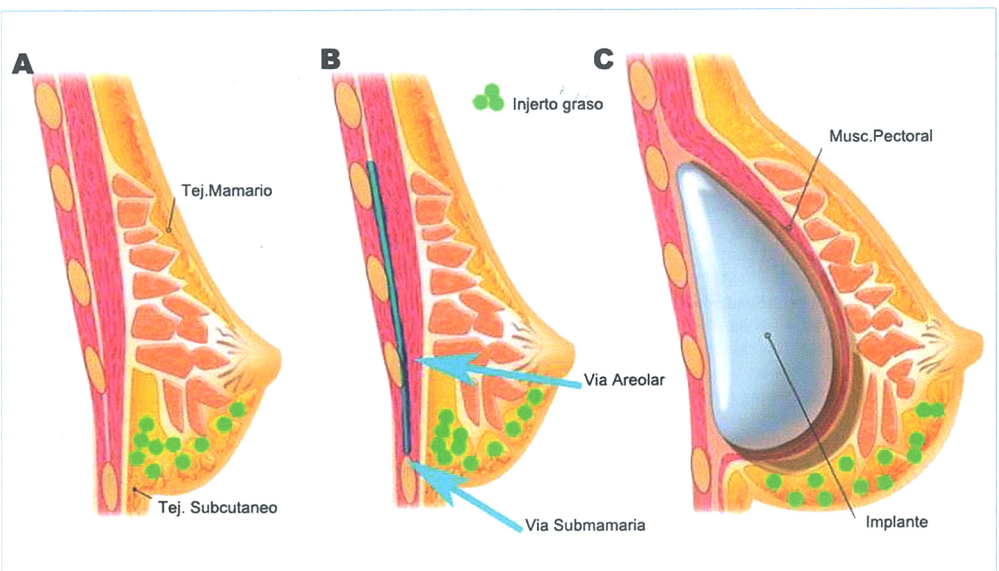

Fig. 1. Sequential technique. First, fat graft. Second, putting submuscular implant by any rout of approach: sub-mammary areola or axillary.

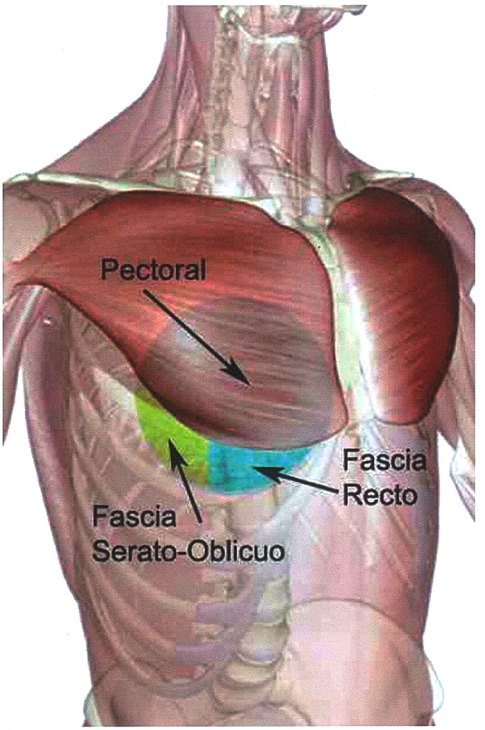

Fig. 2. The implant pocket must be totally submuscular, if it is possible.

The surgical approach is submammary, areolar or axillary according to each patient characteristics, or patient expectations.

In tuberous breast usually I use the areolar approach because we do periareolar pexy. Besides it is much easier to fill the lover pole.

It's very important to put the implant in a deep submuscular plane over all in lower pole and intra mammary space,"the sides of fat infiltration".

In this way the fat survival is much better and you can avoid like double bubble effect, which is more frequent when you put the implant in a partial retropectoral placement "Tebbetts technique"[10].

For this, is necessary to have a wide pocket, that includes all the pectoral detachment, and also the superior rectus and oblique fascia.

So the fat infiltrated will stay like a block in all thickness and the implant under the muscle.

Not always leave drains, only when I consider it necessary.

RESULTS

The results obtained by combining lipostructure and implants have been satisfactory in most cases.

Add a fat infiltration over an implant, is a way to refine the final result and get a better breast shape. It´s the manner of supply some defects that the only implant can not be resolved by itself.

I found this combination especially useful when we have a big distant between each breast and in some inferior pole defects.

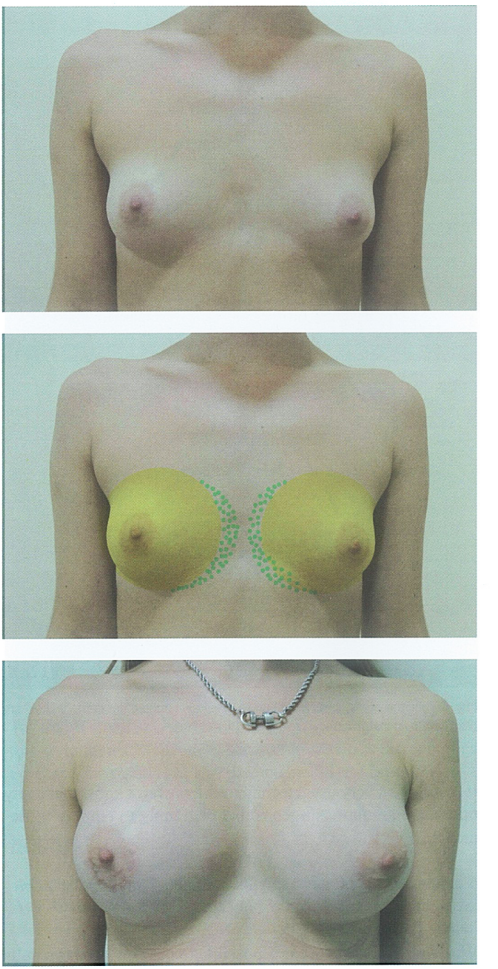

Fig. 3. Separated breasts between itself, case: preoperative, resolution ("green" fat graft, "yellow" implant) and postoperative result.

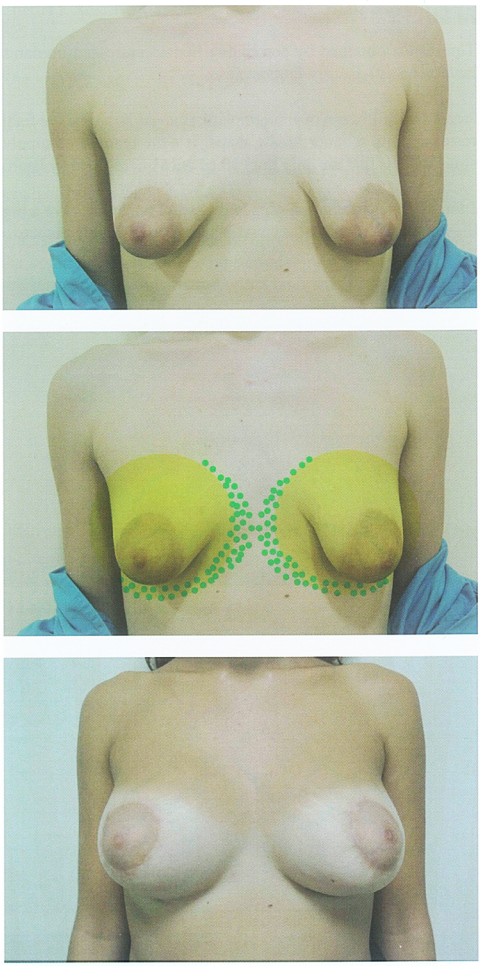

Fig. 4. Tuberous breast case: preoperative ,resolution ("green" fat graft, "yellow" implant) and postoperative result.

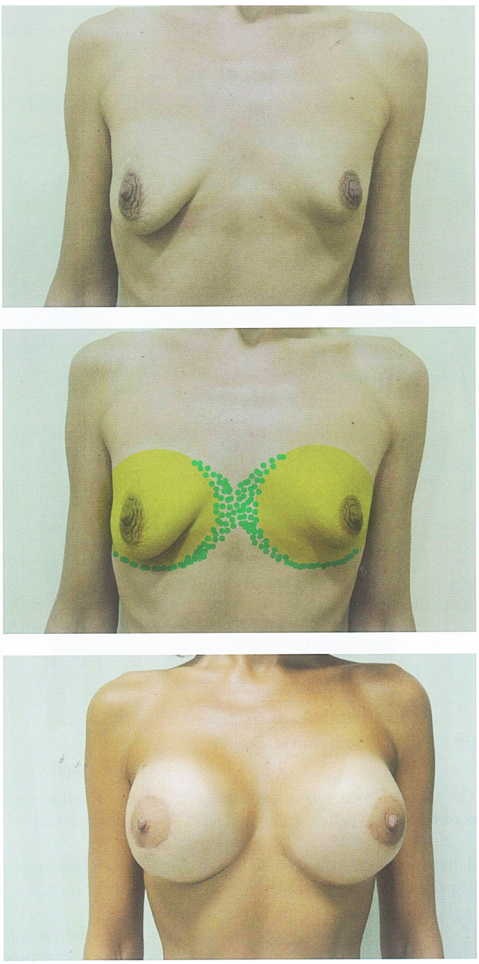

Fig. 5. Atrophic and asymmetric breast: preoperative, resolution ("green" fat graft, "yellow" implant) and postoperative result.

It is still not a very usual technique. However, I know that every time there are more surgeons that beginning to employ it. Benito-Ruiz[8].

The number of operated patients, fourteen. Nine for distant breast and three for lower pole defects.

With only lipostructure it is possible to get you similar results like this technique, but for that it will be necessary to obtain large amount of fat and never will reach the same upper pole fill like an implant.

For these reason this technic is a good options to get the same results in thin patients.

COMPLICATIONS

The complications are all possible at the implants itself: capsulation, reject, break down, seroma, infection and so on. I had

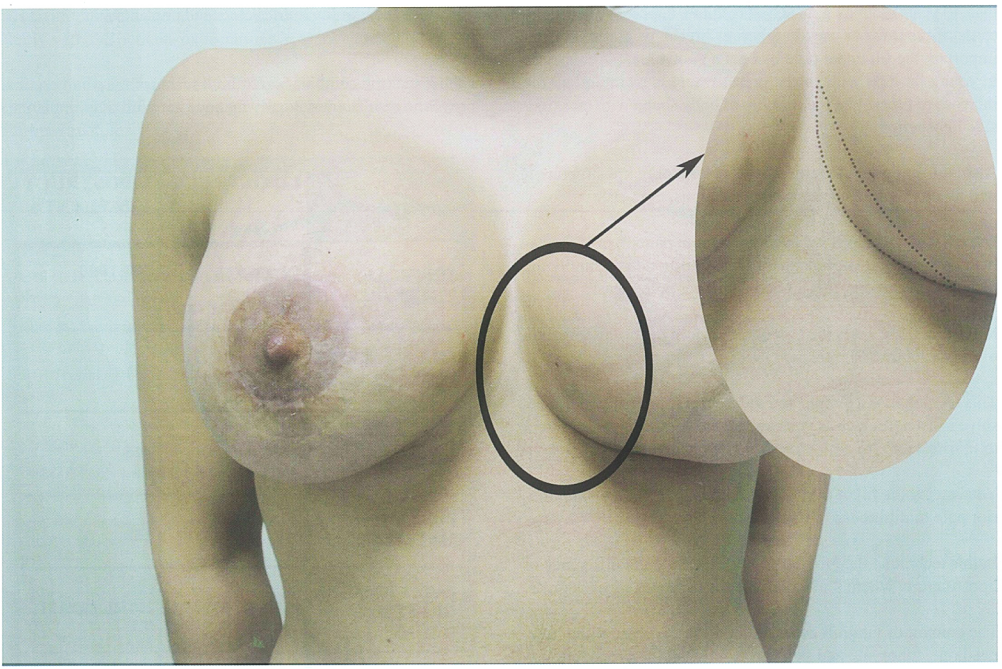

Fig. 6. Double bubble. More frequent if the implant is in dual plane (Tebbetts), or if the fat graft after implant substitution.

not more complications at implants only that when I combined lipostructure and implants.

In my fourteen cases I did, not have any capsulation, seroma, break of implant, or infection.

There are more swelling and the healing times is longer, but always less than in lipostructure.

Some times we see haematomas in infiltration zones more frequent than with implants only.

Also there is a possibility of complication such as: alteration at mammography pattern, reabsorption etc. These two last are less frequent than in lipostructure perhaps because the fat infiltration amount is less.

In case of liponecrosis or posterior "breast calcifications nodule", it will be ever in inferior or internal portions of breast. Less important risk zone of breast cancer in dfferential diagnosis.

On the other hand, the possible complication in the liposuction area will be less than in a lipostructure. The cause is a single liposuction zone to difference of lipostructure "two stages" and very extensive liposuction.

An effect like the double bubble can be possible in submammary fold, if the implants are above the muscle in this place, and we added fat graft.

The double bubble effect is the only unique complication of this technique and I think may be avoided, if you put the implants in submuscular plane.

To end off I will say, that it's not a good idea to apply lipostructure in implants exchanged, because it increases the complications and the results are less predictable, in my experience.

DISCUSSION

Do you not have any problems in larges distant breasts between themselves, or in a defect lower pole fill, if it can be done an extensive lipostructure, "besides you will get a fine body in shape".

Of course I practiced this technique whenever I have enough fat, because I think that it is the best way for young people less

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than 40 years old may get the best results[11]. Especially in several cases of tuberous or pseudo tuberous breast, where it is not so important the fill upper pole like get a good breast in shape. Or in young fat girls with an flat breast where is so important the increase of breast like the refining of body shape with an extensive liposuction.

Also, it is important to remember that with only lipostructure it will avoid possible implants complications.

But what can we do If we have a very thin patient, or if the patient does not want accept an massive liposuction or simply the patient expectations, it is a good fill upper pole breast?

Maybe, in these cases the best option would be the combination of lipostructure and implants.

This technique is a simple and quick operation that you can resolve in a single stage as you can get one or more sizes, different to lipostructure (two times to two sizes in my practice).

You can get the fill of every breast pole: upper, lateral and inferior pole to difference to lipostructure.

In this technique the ptosis it's not frequent to the difference of lipostructure, where it always happens in more or less degrees.

The amount of fat graft collected in these cases are small, only need one donor site and you can resolve all the procedure in a short time.

Besides the liposuction only needs a single place, and this does not lengthen the operation and healing time too much.

The only implants, are a way to resolve the problem, but if you add lipostructure it is a better solution because in lipostructure you can put the volume (fat graft) anywhere you need, while with only implants you are limited by the shape of the implant.

This is more evident in difficult breast, for example: very separated breasts between themselves, asymmetric or tuberous breast.

In these cases with fat graft you can get more exact results, in symmetry and volume than only with implants.

In the same way you can get a nice shape also in the lower pole of tuberous breast.

The results in the long term are predictable always that you make an careful technique, avoiding a great amount of fat graft and consequently the necrosis and reabsorbtion of it.

For that, we use an average between 40-60 ml fat maximum for of distant breast between themselves, and 50-100 ml max in lower pole cases.

The fact of combining lipostructure and implants don´t increases the complications.

I think that the combination of both technics may be very improve the results dramatically than we get with only implants.

	LIPOSTRUCT.	LIPOSTRUCT + IMPLANTS
SURGICAL TIMES	TWO TIMES (IN MY PRACTICE)	ONE TIME
FILL UPPER POLE	NO	YES
AUTOLOGOUS MATERIAL	YES	YES
FOREING MATERIAL	NO	YES
FAT GRAFTING GRAFTED	40-90 ML/ BREAST	250 ML/BREAST (IN MY PRACTICE)
AVERAGE SIZE GETTING	ONE SIZE FOR INTERVENTION	ONE OR MORE SIZEFOR INTERVENTION
MAMOGRAPHIC PATTERN CHANGES	ALWAYS	INFREQUENTLY
PTOSIS	ALWAYS	NO
LIPOSUCTION	EXTENSIVE	LOCALIZED

Fig. 7. Comparative table between lipostructure and implants added to lipostructure.

CONCLUSIONS

The combination of lipostructure and implants may be a new weapon in our array of procedures. In the same way that only lipostructure, it will have their specific indications.

It is not a difficult technique. It does not increase the surgical time too much and the healing time. Does not increase the complications, and besides improves results over implants "I don´t know about another way to fill a long inter-mammary space, or a lower pole in tuberous breast when the implant is not enough".

Using these techniques, we can achieve better results and comply with the patients expectations in many cases.

They are the long lasting results. We have more than one year experience with this combined technique and six year or more with lipostructure.

Yet all we know that nothing last forever but I think in some cases the fat will be more lasting than some implants "especially those of a dubiou quality".

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