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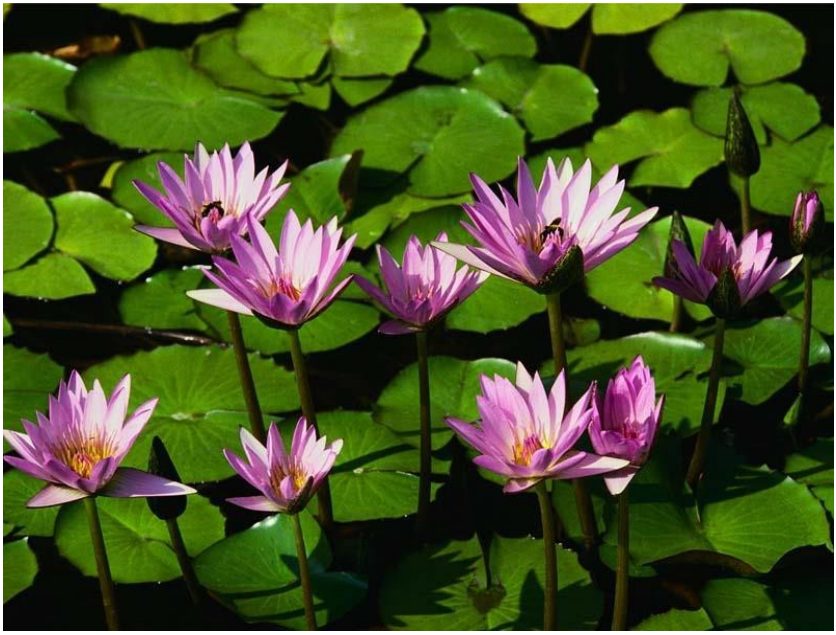
REGIONE AUTONOMA FRIULI VENEZIA GIULIA

INFORMATION ON "BREAST RECONSTRUCTION"



Department of Plastic and Reconstructive Surgery
Director: Prof. Giovanni Papa
(Azienda Sanitaria Universitaria Integrata di Trieste)
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Dear Madam,
This booklet has been written with the aim of providing you with some information concerning the diagnosis, treatment and rehabilitation process in our Plastic Surgery Department for women with breast disease.
This information does not replace direct contact with the surgeon and healthcare professional.

1.What is breast reconstructive surgery?

Reconstructive Plastic Surgery includes all the interventions that aim to restore shape and volume after a demolition surgery of quadrantectomy or mastectomy.
Plastic Surgery is a division of the Breast Unit and includes several services located in different facilities as well as a multidisciplinary team of specialists who deal with the prevention, early diagnosis of breast cancer and who take in charge the person as well as the rehabilitation.
The Radiologist, the General Surgeon, the Plastic Surgeon, the Pathologist, the Oncologist, the Radiotherapist, the Nurse, the Data Manager, the Psychologist, the Physiatrist, the Radiology Technician, the Physiotherapist, the Geneticist, the Nuclear Doctor, the Health Physicist and the Gynaecologist are part of the team. The goal is to allow women to face the disease with the security of being followed from a physical and psychological point of view and treated according to the highest European standards.

2. Main types of surgery

The purpose of the reconstruction is to reduce the psychological impact resulting from the demolition of all or part of the breast, in order to obtain an aesthetically acceptable result, within the limits of the reconstructive possibilities.
In most cases, it is a pathway consisting of several steps.
Breast reconstruction does not affect prognosis, adjuvant therapies, or oncological follow-up.

Reconstruction timing

The reconstruction can be IMMEDIATE, i.e. simultaneously with the demolition intervention, or DEFFERED, after months/years from the intervention.

Post quadrantectomy reconstruction

Quadrantectomy consists of a more conservative intervention compared to mastectomy, which however inevitably results in more or less evident distortions of the natural shape of the breast, such as asymmetries, volume deficits with respect to the healthy breast and possible dislocations/retractions of the nipple areola complex.
These changes are highly dependent on the size of the tumour, the tumour/breast volume ratio and the location of the tumour. Large tumours, located in medium-small breasts, located at the level of the medial or central quadrants are those that leave aesthetically less acceptable results.
There are two reconstructive techniques:

- volume replacement
- volume displacement

In this case, breast reduction techniques commonly used in aesthetics are used: the intervention of the plastic surgeon aims to remodel the residual tissues, in order to improve the shape of the breast and reduce any deviations of the nipples. It is often associated with the reduction/remodelling of the contralateral breast, in conjunction with the demolition surgery or later, after stabilization of the framework, to improve the symmetry of shape and volume.
Although radiotherapy is essential for the oncological outcome, it is important to underline that it causes an increased risk of complications, fibrosis, hardening of the tissues and it reduces vascular supply, thus worsening healing and the final result in the long term.
Furthermore, if it is performed before reconstructive surgery, it contraindicates this technique.
Cigarette smoking is not an absolute contraindication to surgery, but the risk of complications increases significantly.

Volume replacement

This technique is indicated for lateral defects of the breast and exploits the nearby tissues to replace the loss of substance due to the demolition intervention.
Generally a portion of skin and subcutis lateral to the breast is used (LICAP flap) which is used as a "filler"; the residual scar is at the level of the side and extends dorsally. There are some lesser-used variants of this technique which involve the removal of skin and subcutis in the more posterior dorsal region (TAP flap) or the removal of the Great Dorsal muscle in selected cases.
The advantage of this technique is to allow volumetric restoration without reshaping the contralateral breast.
The final result is also in this case subject to variations after the adjuvant radiotherapy treatment.
Cigarette smoking is not an absolute contraindication to surgery, but the risk of complications increases significantly.

Autologous reconstruction

The flap is a portion of tissue with its own vascularization. The most commonly used sites for the removal of the flaps are the abdomen and the back.

DIEP flap and SIEA flap

The flap most used in breast reconstruction is the DIEP flap, consisting of skin and adipose tissue of the abdomen.
This type of flap provides excellent aesthetic results, as the shape and consistency of the reconstructed breast are comparable to those of the contralateral breast.
The reconstructed breast follows changes in the body by increasing or decreasing in volume due to weight changes and behaving very similarly to the original breast.

It is a complex microsurgical operation that involves the removal of the lower part of the abdomen together with an artery and a vein that vascularize it.
The rectus abdominis muscle is not removed.
It is important to correctly plan this intervention in order to reduce the operating times and increase the chances of success of the intervention, for which the patient undergoes an angio-CT scan for the study of the blood vessels (in the absence of adequate vessels, the reconstruction with this technique is not recommended).
The duration of the reconstruction surgery is 5-6 hours, under general anaesthesia.
Careful monitoring of the flap during the first three days is essential for the success of the operation, because these are microsurgical operations.
The purpose of this monitoring is to evaluate the viability of the flap and the correct functioning of the microvascular anastomoses. It may be necessary to resort to an additional emergency intervention to restore the flow inside the vessels in case of ischemic issues (artery problems) or congestion (vein problems).
The cicatricial outcomes at the level of the abdomen consist of a long scar in the area between the navel and pubis and a periumbilical scar, superimposable to those resulting from an abdominoplasty.
The average hospital stay is 8-10 days.
The use of a containment girdle and a sports bra with front lacing is recommended for a period of three months. Contraindications to the use of abdominal flaps are: inadequacy of the donor site due to lack of tissue, previous surgical interventions that may compromise the vascularity of the abdominal wall and poor health conditions.
Cigarette smoking is not an absolute contraindication to surgery, but the risk of complications increases significantly not only at the breast level, but also at the abdominal level.

The SIEA flap is a variant of the DIEP flap which involves the use of the same portion of the abdomen and the same microsurgical technique, with a different choice of vessels that vascularize the flap.
The advantage of this flap is that the continuity of the muscular fascia of the abdomen is not interrupted to pick up the vessels as happens in DIEP, reducing the possibility of problems at this level.
The vessels to prepare the SIEA flap are inconstant in the population and are highlighted in the preoperative CT angiography. The risks are slightly increased due to the different characteristics of the vessels.

Great Dorsal Flap

The back is another donor site used for autologous breast reconstruction, reserved for medium-small breasts if the abdominal flap cannot be used.
The great dorsal muscle is used alone or, if required, together with a skin island.
In this case the flap is pedunculated, so it is not completely detached but partially lifted and moved anteriorly to fill the defect left by the mastectomy, without resorting to the use of microsurgical techniques.
The duration of the reconstruction surgery is 2-3 hours, under general anaesthesia.
The scar results consist of a horizontal scar at the level of the back that can be covered by the bra in the case of using muscle and skin or a vertical scar on the side if only the muscle is used.
The average hospital stay is 7-8 days.
A sports bra with front lacing is recommended for a period of three months.
Cigarette smoking is not an absolute contraindication to surgery, but the risk of complications increases significantly not only at the breast level but also at the dorsal level.

Alternative flaps

If the aforementioned options are not adequate, alternative flaps can also be used in autologous reconstruction, although they are often considered as a second choice.
They are generally indicated for the reconstruction of medium-small breasts and require the use of microsurgical techniques as for the DIEP flap.
In this case the most frequent donor sites can be:

- inner thigh: TUG flap
- buttocks: S-GAP or I-GAP flap

There are other possible donor sites, even less used, which we do not consider appropriate to discuss here but we remain available for further clarifications and/or insights.
Cigarette smoking is not an absolute contraindication to surgery, but the risk of complications increases significantly not only at the breast level, but also at the level of the donor site of the flap.

Prosthetic reconstruction

Prosthetic reconstruction consists of using prostheses to reconstruct the breast.
There are more possibilities, both in terms of the position of the prosthesis and in terms of the type of procedure:
- positioning of an expander under the pectoralis major muscle and subsequent replacement of the same at a later surgical step with a definitive silicone gel prosthesis. The expander is a deflated prosthesis positioned below the pectoral muscle that is inflated with physiological solution (a painless process) on an outpatient basis every three weeks until the desired volume is reached. The replacement surgery expander with the prosthesis is done on average 6-8 months after the first operation (the timing may vary according to any adjuvant therapies): the prosthesis is aesthetically more natural and softer in consistency than the expander that results therefore only a temporary intervention
- direct positioning of a prosthesis partially under the pectoralis major muscle (which will not be sufficient to completely cover it) in association with a matrix (laboratory material) which guarantees adequate coverage of the prosthesis in the lower pole of the breast
- direct positioning of a prosthesis or an expander, depending on the case, at the pre-pectoral level, therefore without the need to detach the pectoral muscle, completely covered with a matrix that guarantees adequate coverage. There is currently no important scientific evidence

regarding long-term results due to the relatively recent use of this method.

The choice of one or the other technique is subject to numerous variables, which often leave no alternatives.
The safest and currently most used method is fully submuscular reconstruction in two surgical steps, as it offers adequate coverage of the implants without the need to use external matrices which can increase the risk of complications.
The use of other techniques, which allow the direct positioning of a prosthesis and/or the saving of the pectoral muscle, are for now to be reserved for extremely selected patients, with medium-small breasts, possibly non-smokers and non-obese, but especially with a residual skin after the demolition surgery absolutely capable of guaranteeing an adequate and safe coverage of both implants (prosthesis and/or expander and matrix), under penalty of complete loss of the reconstruction in case of complications.
The indications are therefore rather restricted and often the final decision is taken intraoperatively once the viability of the skin flaps has been assessed.
The advantages of prosthetic reconstruction are the short times, the simplicity of execution and the absence of additional scars (accessed from that of the mastectomy), at the expense of a less natural result compared to autologous reconstruction.

Contraindication to the reconstruction with prosthesis, especially in the case of the use of matrices, is the previous or planned radiotherapy of the chest wall, due to the increased risk of both short and long-term complications.
The duration of the reconstruction surgery is 1 hour, under general anaesthesia.
The scarring results are those of mastectomy. The average hospital stay is 7-8 days.
A sports bra with front lacing is recommended for a period of three months.
Cigarette smoking is not an absolute contraindication to surgery, but the risk of complications increases significantly.

Prosthetic + autologous reconstruction

In selected cases, the two techniques can be combined.
The most frequent combination involves the use of a prosthesis that is covered by the Grand Dorsal muscle flap.
The indications are rather limited and may include:
- the need for autologous reconstruction, for example, in the case of previous radiotherapy of the chest wall where the prostheses alone are contraindicated and in the absence of donor sites for other flaps (or in patients not candidates for complex microsurgical interventions) in breasts in which the only Grand Dorsal flap would not be sufficient to ensure adequate volume
- rescue interventions, for example in case of skin necrosis and prosthetic exposure to save the reconstruction and prosthesis

Accessory procedures

Lipofilling

This procedure allows to correct any localized contour and/or projection deficits following the reconstruction with one of the aforementioned methods.
It involves the use of autologous adipose tissue (from the same patient) taken from the thighs, abdomen or other available locations, taken by liposuction.
The removed fat is subsequently processed and injected into the mammary region.

The injected fat is reabsorbed in variable quantities (30-50%) and often requires multiple interventions to obtain the desired result.
The duration of the reconstruction surgery is 1 hour, under general anaesthesia.
Scarring is minimal. The average hospital stay is 2 days.
It is recommended to wear a containment sheath for one to two months in correspondence with the area subjected to liposuction.

Adjustment of the contralateral breast

Often the reconstructed breast fails to faithfully reproduce the shape and volume of the healthy breast.
Therefore, a symmetrisation operation of the healthy breast may be necessary and it can be performed simultaneously with the reconstructive one, or at a later time after stabilization of the situation.
The interventions that can be carried out are:

- mastopexy (gland lifting), in the case of ptotic breasts
- breast reduction (lifting + volume reduction), in the case of large-volume and ptotic breasts
- breast augmentation (prosthesis), in case of small and/or emptied breasts

There is the possibility of combining the aforementioned techniques, for example by lifting the gland by means of a mastopexy and at the same time implanting a prosthesis to increase the volume and stretch the skin better, so as to give greater tone to the breast.
The duration of the reconstruction surgery is from 1 to 2 hours, under general anaesthesia.
Scarring outcomes are variable depending on the technique.
The average hospital stay is 3-4 days.
A sports bra with front lacing is recommended for a period of three months.
Cigarette smoking is not an absolute contraindication to surgery, but the risk of complications increases significantly.

CAC reconstruction

It is the last step of the reconstruction process.
It takes place in two steps: first we proceed with the reconstruction of

the nipple, with the use of local flaps of skin raised and modelled to recreate the three-dimensionality of the nipple.
A few months later, the areola is reconstructed using a surgical tattoo.
The duration of both reconstruction operations is 30 minutes, under local anaesthesia.

3. The preoperative period

It is the phase that precedes the surgery.
After being indicated for surgery by the breast surgeon, the first visit will take place in our clinic dedicated to breast pathology.
The plastic surgeon together with the nurse will show you all the types of reconstruction most suitable for you and the purchase of aids necessary for post-surgery.
At this stage, you will be provided with all the information to better face the pre and post-operative period.

Before admission: preoperative examinations

With regard to the reconstruction or replacement of the expander with the placement of the definitive prosthesis, the preoperative preparation will be our responsibility at the outpatient clinic of the department.
For other demolition interventions, on the other hand, the examinations will be managed in the preoperative outpatient clinic of General Surgery.

The day of admission

Hospitalization generally takes place the day before the surgery.
You will arrive at the hospital at the scheduled time and for any blood test it is desirable that you fast from midnight.
You will be welcomed by the nursing staff and will receive all the information useful for your stay in the hospital.
In some cases, hospitalization could take place on the same day as the surgery, in this case you will arrive at the hospital on a complete fast from midnight, after a light dinner, and having already taken care of the armpit hair removal and your personal hygiene. It is recommended to abstain from smoking for at least 3 days.
We also recommend that you:

- follow the instructions provided during the anaesthetic visit on the drugs you usually take and/or any prophylaxis

- bring your personal medicines with you in their original packaging and possibly with the package leaflet included (YOU SHOULD NEVER TAKE DRUGS OF YOUR INITIATIVE DURING HOSPITALIZATION)
- obtain a health card and identity document and any other health documentation
- do not have large sums of money or valuables with you
- do not wear jewellery and remove any piercings
- do not use cosmetic creams and nail polish
- if required, wear the prescribed bra

The day of the surgery

On the day of surgery you will have to respect the 24 hour fast and refrain from smoking. You will be invited to perform another shower with the antiseptic solution. Any medicament will be administered as indicated by the anaesthetist and you will usually be given a sedative drug with pre-anaesthesia functions about 30 minutes before going to the operating room. The operating room is located in the Operating Complex.

After the surgery you will be transferred to the Recovery Room, adjacent to the operating room, where you will spend a few hours under clinical monitoring, then you will return to the ward.

4. The postoperative period

During the postoperative period, you will be assisted by health professionals who will provide you with all the necessary information and reassurance as well as monitor your state of health.

We recommend that you take no initiative and always consult the professionals.

We will monitor your vital parameters, assess the presence or absence of pain, check the surgical wound dressing and any drainage, monitor your diuresis and educate you on proper mobilization.

In the first postoperative hours you will not be able to get out of bed, it will be necessary to continue fasting in order to avoid postoperative nausea and vomiting.

Hydration will be guaranteed through the administration of intravenous drips and any anti-nausea drugs.

The day after surgery, the bladder catheter can be removed and you can start eating.

We will educate you on how to get out of bed and accompany you to personal hygiene services and all other daily activities.

In the following days, in addition to the dressings of the surgical wound, any drainages will be removed and your autonomy will be gradually achieved, with the doctor's consent.

Monitoring of microsurgical flaps

The assistance will be of a semi-intensive type, i.e. a nurse will be dedicated to you in the first 48 hours in order to constantly monitor the post-operative progress. You will be educated on how and how much to move, because the type of intervention requires you to have an obligatory posture, and you will always be listened to resolve any doubts or needs.
The monitoring of the flap consists in the observation of its vascular perfusion through the use of a Doppler device, detection of colour and its temperature (non-invasive method). This practice can also be assisted by the use of electromedical equipment such as the O2C (non-invasive - external probe positioned on the grafting area using a patch) or the Licox (invasive-internal probe positioned during surgery).
In addition to monitoring the microsurgical flap, vital parameters (blood pressure, heart rate and saturation) and diuresis will also be measured every hour.
The detection period of all these parameters on an hourly basis will last for 72 hours after leaving the operating room, every 3 hours for the next 72 hours, and then 3 times a day until discharge.

5. Surgical follow-ups

On the day of discharge, you will be notified of the appointments at the "Breast Centre" outpatient clinic for dressing, for suture removal, any appointments for inflating the expander and checks at 1, 3 and 6 months from the date of the operation and subsequent annual checks.
Later, other reconstructive interventions will be planned, such as the replacement of the expander with the definitive prosthesis, any counter-lateral remodelling, surgical reconstruction of the nipple, followed by the tattoo.
The appointments will be scheduled by the clinic nurse, on the basis also of the other oncological and physiatric follow-up appointments. The necessary prescriptions will be requested by the clinic and it will not be necessary to go to the general practitioner in order to reduce inconvenience and delays.

Contacts

Breast clinic- 0403994242

Contact persons:

- dott.ssa Nadia Renzi
- dott. Stefano Bottosso
- dott.ssa Mariastella Manara (area isontina)
- infermiera Scandola Alessandra, Roberta Cernigoi

Preoperative out patient clinic – 0403994443

- Nurse Dorota Mich

Secretariat – 0403994258

- Elena Vattovani

Hospital ward – 0403994562

NOTE

This booklet contains information valid at the time of printing and is periodically updated. However, changes may occur between one edition and the following, therefore the information provided here is not binding.

Drafted by ASUGI's Communication, External Relations, Press Office, URP Office and based on the information provided by the Plastic surgery Department

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