Oncoplastic reshaping in breast-conserving surgery in a peripheral hospital. The Novi Ligure “San Giacomo” hospital experience


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AIM: To confirm that oncoplastic approach to cancer is a fundamental part of modern breast conserving surgery also in a suburban hospital.

MATERIAL OF STUDY: The Authors used oncoplastic techniques in 60 cases including 45 first level and 15 second level procedures: they show some cases of conservative surgery and breast reshaping with upper, medial and lower pedicle.

DISCUSSION: Screening programs are able to identify early breast cancer; the breast conserving surgery with oncoplastic glandular reshaping should be an established custom to ensure oncological safety with the best cosmetic result.

CONCLUSIONS: The oncoplastic approach to breast cancer should be the theoretical and practical knowledge of the breast surgeon. Today in fact the breast surgeon must be a “vertical surgeon” in order to treat cancer completely, interfaced with a multidisciplinary team to ensure a personalized treatment for each patient. In this presentation the Authors want to focus on oncoplastic surgery in a medium flow suburban hospital.

KEY WORDS: Breast conserving surgery, Oncoplastic breast surgery, Screening

Introduction

Oncoplastic breast surgery is by definition a destructive operation that must be strictly radical and that is often associated with common reconstructive plastic surgery techniques, aimed at ensuring the maximum oncological result and the best possible aesthetic outcome. Applying oncoplastic techniques, though, adds additional time to the breast resection surgery, which is no longer the “freshman’s task” but has become a complex surgery in terms of preoperative drawing, intra-operative set-up and final conditioning in order to get an aesthetically pleasing result1.

Patients and Methods

185 breast surgeries were performed between January 2008 and April 2012 at the San Giorgio hospital of Novi Ligure; in 60 cases oncoplastic surgery techniques were applied, of which 45 were first level and 15 second level. Here are reported only a few examples of first
and second level oncoplastic reshaping, performed after breast-conserving surgery at the General Surgery Unit in Novi Ligure.

**Case 1**

39 year-old patient with bilateral mastodynia and palpable mass in Q1-Q2 of the left breast and Q3 of the right breast. Mammography, ultrasound and magnetic resonance were negative for focal nodule lesions, but highlighted areas of inhomogeneous structure; the patient underwent ultrasound-guided core biopsy in the areas with most irregularity. The micro-histological examination highlighted atypical duct hyperplasia (DIN 1 b) diagnosis with high mitosis rate, Ki67 15%, negative ER/PgR. The intervention included a broad resection at the convergence of the upper left quadrants and lower external quadrant of the right breast and, given the fairly high degree of ptosis, the designed access was round block (Figg. 1, 2).

**Case 2**

54 year-old patient suffering from severe fibrocystic dysplasia with subversion of the gland structure. The mammography was negative for micro-calcifications but did not clarify the lump situations because of the very dense appearance of the gland. Ultrasound and magnetic res-
onance confirmed the ubiquitous distribution of simple cysts with maximum diameter of 6 cm and allowed to identify a solid lesion featuring suspect characteristics (BiRADS U4). The ultrasound-guided suction needle resulted in yet another diagnostic suspicion (C4 according to the European guidelines). The measure of choice was to perform core biopsy. In order to obtain a better acoustic window and, most importantly, reach the nodule easily, cystocentesis was in order. The micro-histology examination result confirmed the malignancy (B5b). The staging process was completed with axillary ultrasound and cytology test on a suspect lymph node (positive search of epithelial cells). The gland structure did not allow to perform quadrantectomy and 1st level oncoplastic remodelling, therefore the approach consisted of nipple-sparing mastectomy and immediate reconstruction with implant and contralateral adjustment (picture 3). NAC dissection was performed by means of the “hydro-dissection” technique, recently described by Folli, while the reconstruction (310 g implant) included the creation of a sub-muscular pocket with full sparing of the distal insertion of the pectoralis major muscle. The tissue gap between the lateral margin of the pectoralis major and that of the serratus anterior muscle, which would have left the implant in direct contact with subcutaneous tissue, was filled with composite mesh (picture 4). Contralateral adjustment took place by means of augmentative mastoplasty (dual plane technique) and insertion of 140 gr sub-muscular implant (Fig. 5).

**Case 3**

51 year-old patient, palpable right retro-alveolar node, NAC deformation and nipple retraction. Mammography, ultrasound and magnetic resonance described a neoplasm with maximum diameter of 2 cm and the involvement of the homo-lateral axillary lymph nodes (BiRADS R5/U5); the FNAC performed both on the breast neoplasm and on the suspect lymph node in axillary confirmed the malignancy (C5). The suggested surgery was central quadrantectomy, 2nd level upper pedicle oncoplastic reshaping with inverted T scar, dermo-glandular inferior flap prosthesis, immediate reconstruction of the nipple-areola complex with dermal local flaps, axillary dissection and contralateral adjustment (Figg. 6, 7).

**Case 4**

78 year-old patient with an history of right breast upper quadrantectomy with sentinel lymph node biopsy 5 years before. Over the latest examinations a distortion appeared with microcalcifications (BiRADS R5) in left Q1. An ultrasound-guided core biopsy was performed in the dis-
tortive area, showing high-degree DCIS. Following the previous surgery on the right breast, performed in another centre, the patient showed clear breast asymmetry. The surgery included a large excision of the outer left quadrant with subsequent 1st level oncoplastic reshaping, centralization of nipple-areola complex and sentinel lymph node biopsy (Figg. 8, 9).

CASE 5

61 year-old patient with palpable node at the convergence of the upper quadrants; ultrasound and mammography confirmed the presence of a 2 cm node (BiRADS R5/U5) and cytology highlighted a malignant neoplasm diagnosis (C5). The patient did not ask for contralateral adjustment, hence we offered lumpectomy of the junction of the upper quadrants with 2nd level oncoplastic reshaping with inferior pedicle flap (Figg. 10, 11).

Discussion

The surgical treatment of breast carcinoma is based on a glandular resection which must comply with an oncological limit – which has not been well and completely identified yet – of at least 1 cm from the apparent edge of the neoplasm at surgery and higher than 2 mm at histology in case of infiltrating neoplasm 4 and at sentinel lymph node biopsy for staging purposes. The sentinel lymph node micro-metastasis response is no longer a necessary indication for axillary dissection, which will
remain a passage, no longer compulsory, only in case of macro-metastases. It is therefore crucial to accurately plan the surgical operation by means of ultrasound axillary examination, as well as fine needle aspiration cytology or core biopsy of the suspect lymph node. Oncoplastic surgery results from the need to perform oncologically correct surgery operations while sparing the aesthetic of the patient. It is a known fact that removing a portion higher than 20% of the whole breast volume is a predictive factor of poor aesthetic outcome. Oncoplastic surgery is comprised of two levels of intervention: the first level consists of the creation and arrangement of skin and gland flaps upon undermining the skin envelope along the avascular plane of the fascia superficialis and from the pre-pectoral one in order to conceal the resection defect and, if necessary, centring the NAC. The second level is typical of reconstructive surgery and leverages, in case of mid-large breasts, the volume displacement techniques, that is, the creation of upper, mid, lower and lateral pedicle flaps. The volume replacement techniques are more complex and require the creation of muscular flaps from the rectus abdominis or latissimus dorsi. Last, there are some techniques that include corrections, such as the reconstructive operation of the NAC by means of local dermal flaps. During the latest European Breast Cancer Conference held in Vienna a decision was made to rank oncoplastic techniques into four levels:

- **1st level**: reshaping with glandular flaps with/without contralateral carried out by oncoplastic breast surgeon;
- **2nd level**: glandular reshaping by means of upper, mid, lower and lateral peduncle flaps, performed by the oncoplastic breast surgeon and without the support of the plastic surgeon;
- **3rd level**: “conservative mastectomies” (nipple sparing, skin sparing, skin reducing) and reconstruction with expandable implant, performed jointly by the breast and plastic surgeons;
- **4th level**: complex mammary reconstruction with muscle and skin flaps that require the exclusive presence of the plastic surgeon.

With screening, the number of early breast neoplasm diagnoses increased, both in the intraductal (22%) as well as invasive forms. “Voluntary screening” allows women to get to the breast examination with small-sized lesion, hence surgery is mostly designed in terms of a quadrantectomy connected to sentinel lymph node biopsy and 1st level oncoplastic remodelling. Planning the surgical operation begins with the breast examination with axillary and breast ultrasound in order to later perform the FNAC or CB of the lesion and the suspect lymph-nodes. In 24 hours is then possible to offer the surgical approach and the most appropriate procedure for lymph node staging. If the ultrasound test of the axillary should be negative for suspect lymph nodes, a lymphoscintigraphy is performed (24 hours before) in search of the sentinel lymph node.

In oncoplastic surgery the operation must be carefully planned in advance in the form of accurate incision line drawings on the patient’s skin. As regards non-palpable lesions, these must be carefully identified; at our hospital we routinely use the traditional marker wire with metal hook placed the same morning of the surgery with ultrasound or stereotactic guide. The BiRADS U5 nodes, R5 with C4 cytology and diameter lower than one centimetre, are not subject to frozen assay and are immediately sent to definitive histology. The only this requested of the pathologist is the macroscopic edge evaluation. The surgical sample is usually weighted and well oriented by means of clips. For full-blown lesion with C5 cytology, the sentinel lymph node is sent to definitive histology or, in case of uncertain pre-operative cytology, to intraoperative examination. In case of micro-metastases with good prognosis tumours in older patients (Ki67 < 20%, ER +, PgR +, HER2 -), the case is subject to multi-disciplinary discussion and axillary lymphectomy is not performed. Otherwise the patient will be administered a traditional axillary dissection surgery, which in our centre is performed both with ultrasound dissector and with a radiofrequency system. The cases that were reported are just meant to provide a simple example on how oncoplastic surgery techniques have become an indispensable tool in the armamentarium of breast surgeon, who must become “vertical surgeon”, that is, capable of managing invasive diagnostics, oncological surgery, basic reconstruction and, in most complex cases, must work side by side with the plastic surgeon specialist. The patients operated at the San Giacomo hospital of Novi Ligure took the surgery plan well and showed a high degree of satisfaction in terms of the results accomplished.

**Conclusions**

The application of regional screening programmes for breast carcinoma allowed to reach the early diagnosis goal. Patient prognosis is directly correlated with the stage of the disease, hence the earlier the diagnosis the longer the survival and the closer we get to “zero mortality”. In this view surgery plays a key role in local control, though the need to rigorously comply with the rules of oncological surgery must not collide with the respect for women’s bodily image. Oncoplastic surgery allows to perform oncologically correct resections while attempting to achieve the best possible aesthetic result.

**Riassunto**

L’approccio oncoplastico alla moderna chirurgia della mammella deve costituire il bagaglio teorico-pratico del senologo. Al giorno d’oggi infatti il senologo è un “chirurgo verticale” che deve gestire la malattia in modo...
completo, interfacciandosi con un team multidisciplinare, al fine di garantire un trattamento personalizzato per ogni singola paziente. In questa presentazione di casi clinici si vuole porre l’accento sulla chirurgia oncoplastica in un ospedale di periferia a medio flusso: vengono presentati casi di ricostruzione mediante tecniche di primo e secondo livello con allestimento di lembi a peduncolo superiore, medio e inferiore. La chirurgia oncoplastica della mammella permette di trattare la malattia tumorale in modo radicale cercando di ottenere il migliore risultato estetico.

References