

A giant papillary carcinoma of the breast treated with mastectomy and bipediced TRAM flap



Ann. Ital. Chir., 2006; 77: 341-344

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Although the surgical treatment of breast cancer has become more conservative in the last decades, some patients still arrive at the first physical examination with advanced diseases and with large skin infiltration. We report an unusual case of giant invasive papillary carcinoma of the breast underwent mastectomy and reconstruction with a bipediced transverse rectus abdominis myocutaneous (TRAM) flap.

KEY WORDS: Bipediced TRAM flap, Breast reconstruction.

Introduction

In cases of large tumours with skin infiltration the radical mastectomy with breast reconstruction may be the first indication. Many surgical options are available. However, since Hartrampf first described the transverse rectus abdominis myocutaneous (TRAM) flap for breast reconstruction in 1982, this procedure has become very popular and largely used both for breast reconstruction and thoracic wall repair¹. Many variations of the TRAM flap breast reconstruction have been attempted since the procedure was first described: the flap can be harvested as a monopedicled island unit, a bipediced one and as a microvascular transfer. The TRAM flap procedure, in all its varieties, now comprises 25-50% of breast reconstructions performed in the United States and has become the autogenous tissue of choice for breast reconstruction². The use of the bipediced TRAM is not as common as the single muscle pedicle or free TRAM variants but is still indicated in certain situations. We report an unusual case of giant invasive papillary carcinoma of the breast treated with mastectomy in

which we decided to split a bipediced TRAM flap to cover the thoracic wall defect achieving an acceptable cosmetic result.

Case Report

A 70 year-old woman, non-smoker, with not balanced diabetes, presented with a large right breast mass (Fig. 1). Although she had noticed a mass 5 years pre-



Fig. 1: Preoperative view: a large breast tumour with wide skin infiltration.

Pervenuto in Redazione Aprile 2006. Accettato per la pubblicazione Giugno 2006.

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viously, she had not sought treatment. The physical examination revealed an evident asymmetry of the breast because of the presence of a large, ulcerated and not well-defined tumour, measured 12 x 15 cm, with wide skin infiltration.

Mammography was not performed because of the dimension of the lesion. On sonography an inhomogeneous mass with cystic-like areas and hypervascular solid components were depicted. Dynamic magnetic resonance imaging showed a circumscribed complex mass with cystic formations and solid enhanced components; normal lymph nodes were present in the axilla (Fig. 2).

The patient underwent right modified radical mastectomy with wide skin removal, due to the large size of the tumour and wide skin infiltration (Fig. 3). An imme-

diately breast reconstruction using a bipediced TRAM flap was performed (Fig. 4a); the pedicles were identified using an intraoperative doppler probe and carefully preserved (Fig. 4b). Abdominal closure was performed with synthetic mesh. Postoperative period was uneventful and early postoperative results are shown (Fig. 5).

Histopathological findings revealed invasive papillary carcinoma with presence of estrogens and progesterone receptors. There were no lymph node metastases. Subsequently, the patient received postoperative radiotherapy and tamoxifen therapy.

Six months postoperatively, the patient remains well without evidence of tumour recurrence. Cosmetic result is good, as judged by both the patient and the surgeons.

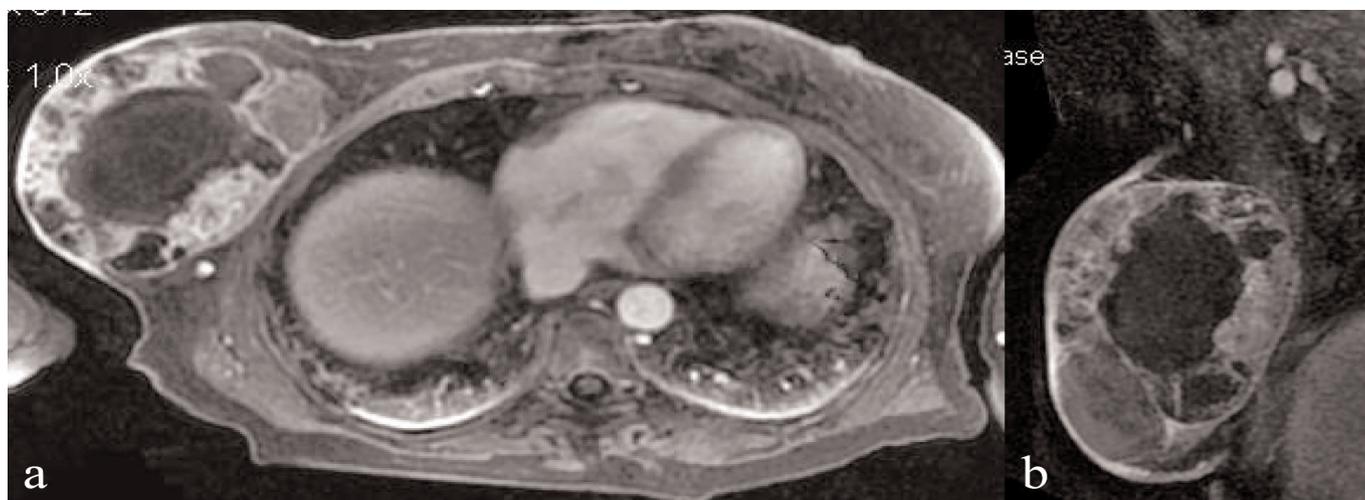


Fig. 2: MRI, axial (a) and lateral (b) T1 fat suppression post contrast sequences. Well defined large mass with cystic areas and enhanced solid components deforms the right breast. Normal lymph nodes were evident in the axilla in the lateral view (b).

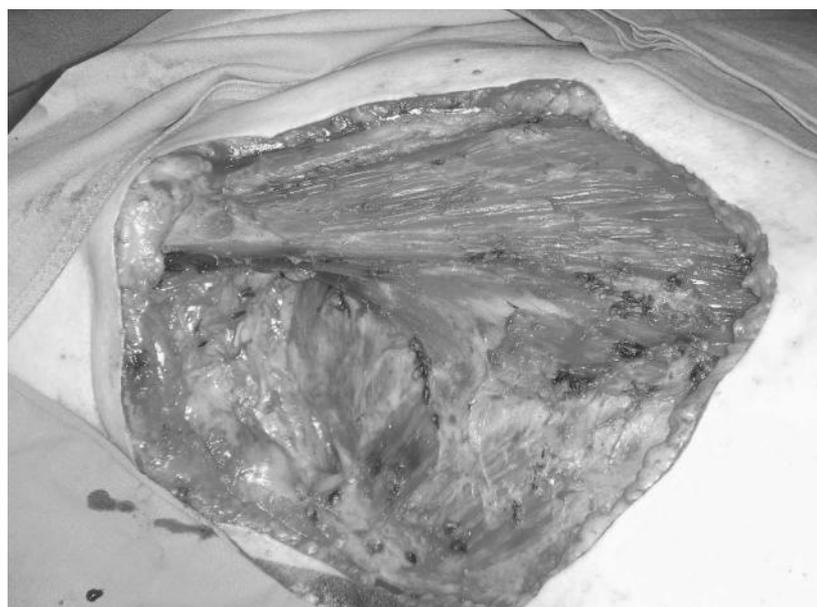


Fig. 3: Intraoperative view: a large thoracic wall defect after right modified radical mastectomy requiring wide skin removal.

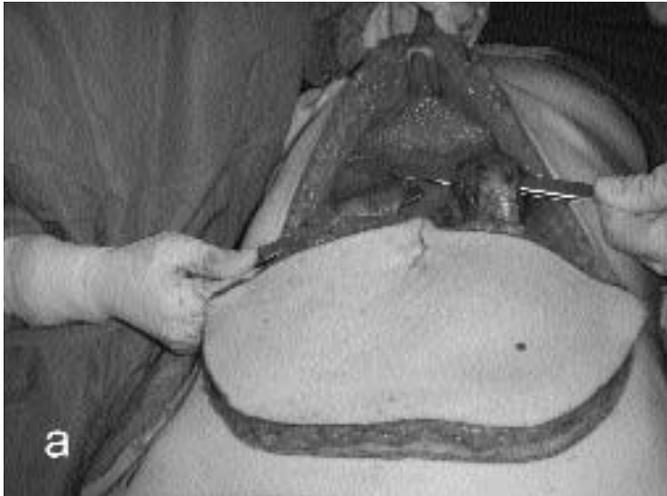


Fig. 4: Intraoperative view: a bipediced TRAM flap is performed (a); the pedicles, identified using an intraoperative Doppler probe, are carefully preserved (b).



Fig. 5: Early postoperative view (A): final result (B).

Discussion

Over recent decades the management of the breast carcinoma has undergone a considerable evolution. Thanks to early diagnosis, the surgical approach has progressively become more conservative leading to less disfigurement and to an important improvement in quality of life. Nevertheless, some patients still arrive at the first physical examination with advanced diseases and with large skin infiltration. In these cases, a radical mastectomy with following breast reconstruction must be

performed. Several surgical solutions are available for breast reconstruction and thoracic wall repair: local skin flaps, omental flap, myocutaneous flaps and micro-vascular transfers¹⁻³. Above all the transverse rectus abdominis musculocutaneous (TRAM) flap has become a very popular and largely used technique that provides a new breast of adequate volume, ptosis and natural appearance. The deep superior epigastric vessels are the dominant blood supply to the TRAM flap, and perfusion of the flap is least reliable in the zones farthest from the vascular pedicle. These zones are usually exci-

sed so that only well-perfused tissue is retained, resulting in a flap with a volume sufficient for unilateral breast reconstruction in most cases⁴⁻⁵. The unipedicle TRAM flap remains a reliable method for breast reconstruction for low-risk patients but the cases with multiple risk factors require modifications of the surgical procedure. Radiation, obesity, vasoconstriction or any disorders affecting microcirculation may affect the circulation⁵⁻⁶. In order to reduce the incidence of complications associated with tissue ischemia a bipediced TRAM flap may be used⁶. According to the literature, a bipedicle rectus harvest may be recommended to accommodate a bilateral reconstruction, to provide a more reliable blood supply to the unilateral reconstructive patients at higher risk for flap loss, such as obese, smokers or irradiated patients, or to support a larger flap for a unilateral reconstruction in patients with a radical mastectomy wide defect or a large contralateral breast⁶. In particular the advantage of the bipediced TRAM flap is to improve flap vascularity with double the arterial inflow, to decrease venous congestion with double the venous outflow and to eliminate the zone IV or III capture zone; so this surgical technique permits to use a wider flap with a greater safety and diminished risk of partial necrosis⁶⁻¹¹.

In the past, the disadvantages of the double-pediced TRAM flap were prolonged operating time, increased abdominal wall morbidity, increased difficulty in abdominal wall closure and greater difficulty in shaping the breast. The progress in surgical experience have made these disadvantages less significant and some authors have underlined that the double-pediced TRAM flap does not aggravate the risk of complications if compared with the unilateral technique¹²⁻¹³.

In this clinical case, the aim was to cover the large thoracic wall defect resulting after an extensive mastectomy and to reconstruct a "new symmetric breast". Local transposition of unipediced TRAM flap or a latissimus dorsi musculocutaneous flap was not large enough to cover the defect. Free flaps or microvascular transfer would have increased the risk of postoperative complications. For this reasons, we decided to use the bipediced TRAM flap; it provides an improved flap vascularity and supports a larger flap in radical mastectomy defect which requires a large amount of tissue.

Conclusion

Although the surgical treatment of breast cancer has become more conservative, in cases of large tumours with skin infiltration the radical mastectomy with large skin removal still represents the first indication. This report shows that a reconstruction with a bipediced TRAM flap may provide a more reliable blood supply and support a larger flap in radical mastectomy defect which requires a large amount of tissue.

Riassunto

Sebbene, negli ultimi anni, il trattamento chirurgico del carcinoma della mammella sia divenuto sempre più conservativo, alcune pazienti giungono ancora oggi alla prima visita senologica con neoplasie della mammella in stadio localmente avanzato ed ampia infiltrazione della cute. In questi casi spesso è necessario eseguire interventi chirurgici ampiamente demolitivi di mastectomia e ricostruzione mammaria. Gli Autori riportano un inusuale caso di voluminoso carcinoma papillare invasivo della mammella trattato con mastectomia radicale e ricostruzione immediata con lembo miocutaneo di retto dell'addome bipeduncolato.

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