Use of Double Myocutaneous Flap after Extended Resection of Locally Advanced Ulcerated Breast Carcinoma

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Summary: Locally advanced ulcerated breast neoplasm is a condition that frequently occurs in developing countries. Generally, it is centrally localized and submitted to neoadjuvant therapy; thereafter, upon disappearance of the ulceration, it is submitted to radical mastectomy. Presence of axillary infiltration and ulceration with incomplete response makes it necessary for the use of surgical flaps for skin closure. We report a case in which primary reconstructive surgical procedure and skin closure was necessary, where we used double myocutaneous flaps—the latissimus dorsi and VRAM (vertical rectus abdominis myocutaneous) flap. We discussed treatment of the ulcerated lesions, possible surgical solutions, and the conditions associated with the use of double flaps. For primary closure of extensive areas, double myocutaneous flaps can be used as a solution in cases where skin grafts or surgical microsurgical flaps are not able to serve as a surgical solution. Myocutaneous flaps are associated with lower rates of complication, allowing for rapid recovery without increasing the time necessary before the next adjuvant therapy.

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Locally advanced breast cancer is a frequent occurrence in Brazil. This fact is due to difficulties in access, navigation, delayed diagnosis, patient denial, and influences in tumor biology. Neoadjuvant chemotherapy aims to reduce the size of the lesion and increase resectability.

Nonetheless, even with the use of neoadjuvant chemotherapy, for primary closure of an extended skin resection associated to radical mastectomy, it is generally necessary to use local flaps—thoracoabdominal or myocutaneous flaps. The choice of flaps depends on the size of the thoracic defect, patient conditions, and the experience of the surgeon. Myocutaneous flaps are associated with lower rates of necrosis and early surgery recovery.

The indication can be performed by a breast surgeon, but for surgery in locally advanced breast cancer, the presence of a plastic surgeon or a breast surgeon specialized in reconstructive surgery is advised. Furthermore, challenges occur when planning or intraoperatively, and the use of only one flap does not always allow for the primary closure of the defect.

CASE PRESENTATION

A patient, aged 59 years, with an ulcerated tumor in the right breast underwent local biopsy, which showed ductal invasive carcinoma, histological grade 2, triple negative; ki67 50%; body mass index of 20.7 (Weight = 48.6; Height = 1.53). Upon physical examination, the presence of an extensive nonmetastatic ulcerated lesion extending to the armpit (TNM T4bN1M0) was identified. She was submitted to neoadjuvant chemotherapy, observing a reduction of the tumor. The regimen initially considered was four cycles of Adriamycin and cyclophosphamide (4AC) followed by 12 cycles of Taxol (12T). During chemotherapy the patient had four episodes of febrile neutropenia.

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and six cycles of Taxol were performed (4AC + 6T). It was observed a tumor reduction and the patient was released for surgery.

A curative surgery was considered. Due to the presence of an ulcerated tumor, the surgical area was found to be infected; therefore, before surgery, a broad-spectrum antibiotic therapy with cefepime and clindamycin was instituted and the entire tumor was covered.6 (See figure 1, Supplemental Digital Content 1, which displays transoperative findings: (a) lesion; (b) resected area; (c) Early postoperative. http://links.lww.com/PRSGO/B941.)

She was submitted to a modified radical mastectomy, with partial resection of the pectoralis major and serratus muscles, and despite an infiltrative lesion in the axilla, it was possible to preserve the thoracodorsal pedicle. Primary reconstruction was performed because the dimension of the defect area was 30×20 cm (SDC1b). The tumor was resected in supine position, and the patient was put in lateral position to prepare the latissimus dorsi myocutaneous flap. The availability of the latissimus dorsi pedicle enabled the selection of this flap; however, due to the extension of the surgical wound, it only allowed for partial coverage of the defect. (See figure 2, Supplemental Digital Content 2, which displays (a) the latissimus dorsi flap; (b) VRAM flap. http://links.lww.com/PRSGO/B942.)

The patient was put in supine position, and we then opted for the use of a second myocutaneous flap, by utilizing the vertical myocutaneous flap of the contralateral rectus abdominis muscle (VRAM) (SDC2b, http://links.lww.com/PRSGO/B942), thus allowing for the complete closure of the open area (SDC1c, http://links.lww.com/PRSGO/B941). Although the surgeons considered resection with disease, the pathological evaluation showed free surgical margins. Double flap for breast cancer is an extremely rare condition.7 No postoperative complication was observed.

When we asked the patient about the potential improvement in quality of life, within a score of 0–10, she reported a score of 10. The patient received eight cycles of adjuvant capecitabine. The patient had a 12-month follow-up without disease recurrence.

DISCUSSION

In the past, skin grafts have been used for patients submitted to extensive resections, and were used as the only option or were added to local flaps; however, the problem was that a longer recovery time was necessary.8 Thoracoabdominal flaps have been used for small and medium defects, with a variability of options, but are often associated with higher rates of local complications. Myocutaneous flaps have been used for large defects, and are associated with more morbidity but lower rates of necrosis, allowing for early recovery before the next adjuvant therapy, but they require a reconstructive team.3,4 The use of microsurgical flaps requires a more surgical specialty in plastics.

The simple presence of ulceration is associated with more febrile neutropenia events, and this patient had four events. Evaluation of ulcerative tumors’ febrile events may be considered, and the surgeon must evaluate the pros and cons of primary resection without chemotherapy.9 The patient presented initially with an unresectable ulcerated tumor. To increase the resectability of locally advanced breast cancer, patients are generally submitted to neoadjuvant therapy, allowing for tumor response and a decrease in the size of the resection, as observed in the present case. Also, the tumor was ulcerative, requiring some care during surgery (ie, culture and antibiogram of tumor flora, covering of the tumor during surgery, and therapeutic antibiotic therapy). An infection can result in a drastic condition.5 Therefore, all these precautions were performed, and no postoperative infectious complication was observed.

If we do not consider microsurgical flaps, four main myocutaneous flaps are described as adjuvant to radical mastectomy: the latissimus dorsi, the oblique flap, and the rectus abdominis flap (vertical or horizontal). The latissimus dorsi is the primary flap to be considered as it is associated with a lower rate of necrosis; however, it requires patient mobilization.1 The rectus abdominis myocutaneous flap represents another option, which can be performed with a vertical (VRAM) or transversal (TRAM) incision; however, it is associated with abdominal wall fragility.2,9 Low rates of necrosis have been observed in VRAM flaps associated with breast cancer.10 The oblique myocutaneous flap allows for use in higher areas of defect, resulting in an abdominal scar, and it does not require mobilization of the patient.8 Recently, a modification for larger areas of resection has been described but it has also been associated with higher rates of local necrosis and the author does not recommend its use in thin patients, as the present case.3

This patient had many unfavorable conditions, which made the use of only one flap unfeasible. Some factors contributed negatively to the exclusive use of the latissimus dorsi: the patient was thin (little subcutaneous tissue); the skin on the back near the latissimus dorsi was hardened, a fact influenced by prolonged use of local dressings; and the resection area extended into the axillary cave, requiring larger areas of flap, with the intent to allow for an adequate mobilization of the upper limb.

Given the impossibility of primary suturing of the open area with the latissimus dorsi muscle, an additional flap was needed. The external abdominal oblique myocutaneous flap vascularization could be compromised by latissimus dorsi detachment and result in potential injury to some of the oblique perforators.7 We then opted for use of the VRAM flap. We were not prepared to perform microsurgical flaps, and we opted to not perform a TRAM flap as the patient had little subcutaneous tissue (thin patient), the study of vascularization and previous autonimization were not performed, and the VRAM flap give us the sufficient skin for primary closure. The patient progressed favorably, with no local dehiscence, good skin coverage, and good mobility of her upper limb.

CONCLUSIONS

For patients with extensive defects after mastectomy, especially with axillary involvement, a multidisciplinary
discussion must be considered before surgery, and for primary closure, the use of double flaps or microsurgical flaps can be the surgical options.

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