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CASE REPORT

Immediate chest wall reconstruction during pregnancy: Surgical management after extended surgical resection due to primary sarcoma of the breast

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Summary *Background:* Breast sarcoma during pregnancy is an extremely rare event and represents a complex problem because of a more advanced stage at presentation.
Method: This report presents the first case of a 24-year-old woman with a gestational age of 20 weeks with a fast growing tumour in her left breast (29 × 19 × 15 cm) and infiltrating the skin/pectoralis muscles. Radical mastectomy was performed with a gestational age of 22 weeks and a different design was planned for the latissimus dorsi musculocutaneous flap (LDMF) with primary closure in the V—Y pattern.
Result: Satisfactory chest wall coverage and contour were achieved. Final histopathological findings allowed a diagnosis of undifferentiated sarcoma. With a gestational age of 37 weeks, a healthy infant was delivered by means of a caesarean section. The patient is currently in the second postoperative year and no recurrence has been observed.
Conclusion: Management of a large breast sarcoma in a pregnant patient presents unique challenges in consideration of the potential risks to the foetus and the possible maternal benefit. The results of this study demonstrate that the VY-LDMF is a reliable technique and should be considered in cases of immediate large thoracic wound reconstruction.

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Management of locally advanced breast sarcoma, especially in pregnant women, poses several dilemmas and immediate reconstruction during this period is controversial.[1–3] However, in specific situations locally advanced breast cancer (LABC) requires tissue coverage of an extensive chest wall defect at mastectomy.[2,3] Among the main techniques available, the latissimus dorsi myocutaneous flap (LDMF) has been an option.[7–10] However, recommendation of its use in LABC reconstruction is not advocated, because the conventional design of the skin island is sometimes limited.[7] Although immediate breast reconstruction is a well-described procedure,[7–10] there are few reports regarding the outcome following wide chest wall resection.[7–9] Moreover, no information is available concerning the surgical planning of large thoracic wound reconstruction in a pregnant patient. Thus, the purpose of this article is to describe the surgical approach in this particular scenario focussing attention on operative planning and advantages of the technique.

Clinical case and methods

A 24-year-old woman with a gestational age of 20 weeks was admitted at Instituto do Câncer do Estado de São Paulo (ICESP) with a fast growing tumour in her left breast (Figure 1). Thoracic tomography performed elsewhere before her admission revealed an expansive lesion of left breast and chest wall origin (29 × 19 × 15 cm), infiltrating the skin and pectoralis major and minor muscles. Incisional biopsies were carried out and were compatible with sarcoma. The patient decided to continue her pregnancy after a detailed discussion. The mother and the foetus were monitored with standard prenatal care and an ultrasound of the foetus was performed to be sure of the gestational age, the date of delivery and good foetal conditions.

- *Oncological Surgery*: Radical mastectomy — Surgery was performed with a gestational age of 22 weeks. A large portion of the skin extending from the sternum to the left axilla and from the left clavicle to the 10th left rib was resected (Figure 2). As the dissection was taken deep, the breast, pectoralis major and minor muscles and part of the serratus anterior muscle were removed en bloc.
- *Chest Wall Reconstruction*: The patient was placed in a lateral position (Figure 3). The flap presents a triangular shape whose base is the lateral aspect of the mastectomy wound. The dissection proceeded in the muscular plane in a caudal direction to the iliac crest and cranially to the scapular bone. Once the LD muscle was totally visualised, the entire muscle was harvested in the usual fashion. Anteriorly, the flap was anchored to the underlying ribs/pectoralis muscle to maintain its final position and to avoid traction on the thoracodorsal vessels. Donor-site skin and subcutaneous tissues were widely undermined to relieve tension during primary closure.
- *Final histopathological examination*: Examination of the specimen confirmed a 27 × 26 × 16 cm (4920 g) breast and chest wall sarcoma invading the skin, pectoralis muscles and portion of the serratus muscle. The margin of resection was negative for the tumour with a tumour-free zone that ranged from 1.9 to 4.0 cm. Immunohistochemical and histopathological findings allowed a diagnosis of undifferentiated sarcoma.
- *Outcome*: Satisfactory chest wall coverage was achieved. After 4 months, with a gestational age of 37 weeks, a healthy infant was delivered by means of a scheduled caesarean section. The newborn's weight was about 3 kg and no neonatal complications were observed. After 3 weeks, the patient was submitted to radiotherapy (total 5040 cGy irradiation) as an adjuvant therapy. The patient is currently in the second postoperative year of the oncological treatment and chest wall reconstruction (Figure 4).

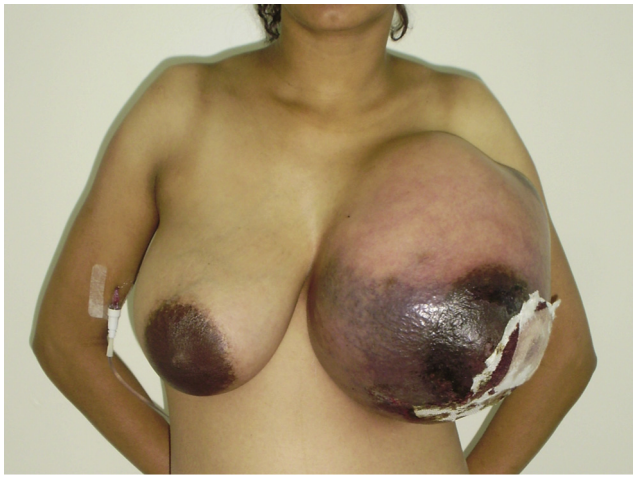

Figure 1 Preoperative anterior view of a 24-year-old woman with a gestational age of 20 weeks with locally advanced primary sarcoma of the left breast.

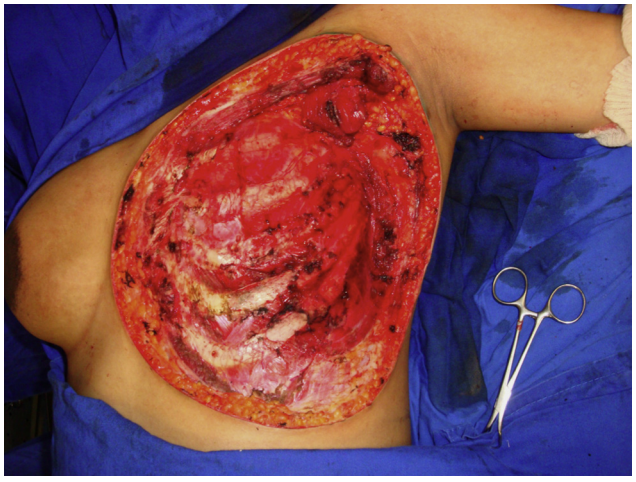

Figure 2 With a gestational age of 22 weeks, patient underwent a left radical mastectomy. A large portion of the skin extending from the sternum to the left axilla and from the left clavicle to the 10th left rib was resected. The resulting defect measured 45 × 33 cm and extended over the left thorax (1D).