

Conversion to Prepectoral Breast Implant Reconstruction after Chest Wall Resection for Desmoid Tumor

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Sir,

Desmoid tumors are locally aggressive cancers due to a proliferation of mesenchymal stem cell progenitors.¹ Breast desmoid tumors are rare, with fewer than 15 cases reported in the chest wall after mastectomy.² The differential diagnosis for a chest wall mass after breast cancer resection is wide and primarily includes recurrent breast cancer.³ Chest wall resection with concomitant breast reconstruction requires a multidisciplinary and carefully planned approach. We present a patient with a chest wall desmoid tumor diagnosed 2.5 years after mastectomy and initial breast reconstruction who required a chest wall resection. Her reconstruction was performed with secondary immediate implant using a subpectoral to prepectoral implant plane, allowing for concomitant chest wall reconstruction using the pectoralis major muscle.

A 33-year old Breast Cancer Gene-1 (BRCA-1)-positive woman was diagnosed with Estrogen Receptor/Progesterone Receptor (ER/PR)-negative, Her-2/neu-positive right breast cancer 3 years before presenting to our institution. She underwent neoadjuvant chemotherapy and bilateral nipple-sparing mastectomies with 2-stage subpectoral tissue expander/implant-based breast reconstruction, with ultimate placement of 600 ml smooth round silicone implants. Three years later, the patient noted progressive left chest enlargement and asymmetry. A magnetic resonance imaging revealed a 9 cm left chest wall mass adjacent to the fourth and fifth ribs, with biopsy exhibiting desmoid tumor (Fig. 1A). The patient underwent wide resection and chest wall/breast reconstruction. In the operating room, her prior inframammary fold incision was extended medially and the pectoralis major muscle overlying the implant was mobilized by delaminating the muscle from the implant and

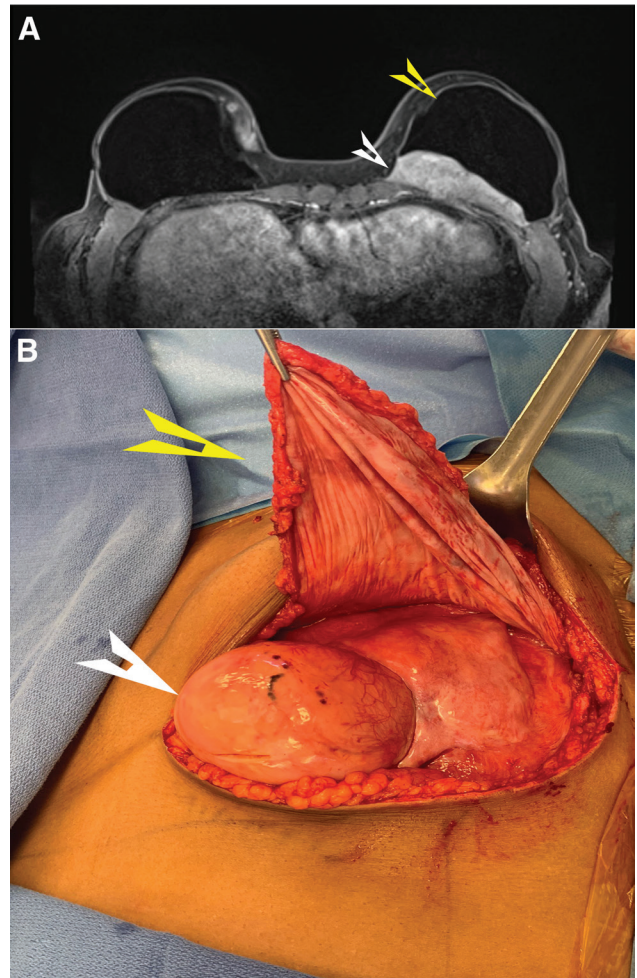


Fig. 1. A 33-year-old woman with a history of bilateral nipple-sparing mastectomy, subpectoral implant reconstruction, and a large 9-cm desmoid chest wall tumor. A, Magnetic resonance image of a desmoid tumor (white arrowhead) and breast implant (yellow arrowhead). B, Pectoral flap raised (yellow arrowhead) using an extension of the previous inframammary fold to expose the desmoid tumor (white arrowhead) after the implant was removed.

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capsule. The pectoralis was freed from the sternal and inferior attachments. A thoracic surgery was performed for an en bloc tumor resection, with removal of ribs 4 and 5 and reconstruction of the chest wall with porcine

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acellular dermal matrix (Fig. 1B). The pectoralis major muscle was used as a flap to cover the chest reconstruction. To reconstruct the breast, a 600 ml smooth round implant was placed over the pectoralis major muscle flap (new prepectoral plane) with a human acellular dermal matrix. The patient was discharged from the hospital on postoperative day 5, and she has been satisfied with her result. (See Supplemental Figure 1, 33-year old woman with a history of subpectoral breast implant reconstruction with a 9 cm chest wall desmoid tumor (A). Chest wall defect after resection with exposed lung (white arrow head). B, Coverage of chest wall defect with pectoral flap after tumor en bloc resection. C and D, New implant inserted in prepectoral plane with acellular dermal matrix covering; <http://links.lww.com/PRSGO/B443>. See also Supplemental Figure 2, 33 year-old woman status post bilateral nipple sparing mastectomy. A, Following subpectoral implant reconstruction using IMF incisions. B, After 9 cm left chest wall desmoid tumor resection, chest wall reconstruction with pectoralis flap and breast reconstruction with implant plane change to prepectoral area; <http://links.lww.com/PRSGO/B444>.)

Secondary breast reconstruction after new primary or recurrent cancer can present unique challenges for creation of a stable plane to support an implant. We report a simultaneous chest wall and breast reconstruction using the previously expanded pectoralis major muscle as a stable platform for our prepectoral breast implant. A multidisciplinary approach was used to ensure adequacy of tumor ablation and produce an aesthetically optimized breast reconstruction in this young woman.⁴ Chest wall tumors can require muscle flap coverage most commonly with pectoralis major or latissimus muscle. Prepectoral breast reconstruction has become more common. Implant plane change is most commonly performed for the correction of animation deformity.⁵ We describe the use of implant plane change

to facilitate chest wall reconstruction while allowing immediate breast reconstruction. This allowed the use of the pectoralis for chest wall reconstruction while minimizing morbidity and maintaining an acceptable aesthetic breast result. Challenging oncological cases provide an opportunity for solutions by applying fundamental reconstructive principles with new techniques such as prepectoral reconstruction.

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DISCLOSURES

The authors have no financial interest to declare in relation to the content of this article.

PATIENT CONSENT

The patient provided written consent for the use of her images.

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