

# Use of Fascia Lata as Matrix for Subpectoral Breast Reconstruction

Georgia-Alexandra Spyropoulou,  
MD, PhD  
Zambia Koukouritaki, MD  
Dimitris Kokkonis, MD

**Summary:** Matrices are used with increased frequency to assist with tissue expander or implant-based breast reconstruction. These devices usually have a high cost, especially when they are human-derived. We present the use of fascia lata for implant and expander-based subpectoral reconstruction. According to our review of the literature, this is the first report of the use of a patient's own fascia lata instead of a matrix. (*Plast Reconstr Surg Glob Open* 2024; 12:e6196; doi: [10.1097/GOX.00000000000006196](https://doi.org/10.1097/GOX.00000000000006196); Published online 24 September 2024.)

## INTRODUCTION

Acellular dermal matrices (ADMs) can be of human, porcine, or bovine origin and are submitted to tissue processing to remove the cellular antigens capable of producing an immunologic response while maintaining the structural matrix. Since the introduction of ADMs in 1994, they have been used as soft tissue replacement in several circumstances, such as burns and pelvic, abdominal, and chest wall reconstruction.<sup>1,2</sup> Their first use in breast reconstruction was documented in 2001 by Saltzberg.<sup>3</sup> Since then, they have been used to decrease the visible rippling in immediate breast reconstruction and in patients with thin soft tissue coverage. These matrices have a high cost and are of alloplastic or xenoplastic origin. Polypropylene meshes have also been used in breast reconstruction, with the manufacturers reporting comparable and even better safety results than ADMs. Nevertheless, these matrices are still foreign bodies.<sup>4</sup> We present the use of a patient's fascia lata as a matrix for subpectoral implant-based breast reconstruction and for expander-based breast reconstruction.

## PATIENT AND METHODS

Our patient was a 60-year-old woman who underwent right skin-sparing mastectomy with axillary node dissection for invasive breast carcinoma and left prophylactic skin sparing mastectomy. The different options of breast reconstruction (flap-based and implant-based) were explained to the patient, and she decided to proceed with implant-based reconstruction. She would be submitted

to postoperative radiotherapy on the right breast; therefore, we decided to perform tissue expander reconstruction on the right breast and direct-to-implant breast reconstruction on the left breast. The patient was reluctant to us using an ADM/polypropylene mesh for the reconstruction due to the cost. Therefore, we explained our thought of using fascia lata as autologous, costless tissue, and she consented to the treatment. She was thoroughly informed about the possible (minor) complications and the resulting scar, and was happy to proceed. The surgery was approved by St. Luke's Hospital Ethical Committee.

The torso, waist, and thighs of the patient were prepared, and two teams (plastic surgery and general surgery) worked simultaneously. Although the breast surgeon performed the mastectomies and right node dissection, the plastic surgeon harvested the fascia lata graft from both thighs. A longitudinal incision (length: 10 cm) was performed at the lateral thigh stopping 15 cm above the lateral border of the patella (Fig. 1). The incision was carried deeply, taking care not to inadvertently put a hole through the fascia. The medial, lateral, and distal incisions were performed on the fascia, and the graft was elevated gently from the underlying muscle at the subfascial loose areolar tissue plane. A graft was harvested from the right side (6 × 14 cm) and from the left side (5 × 13 cm; Fig. 2). A vacuum Jackson-Pratt Channel Drain round type Cardinal Health 12F was inserted, and the wounds were stitched with Monocryl 3-0, Ethicon, Johnson and Johnson (deep stitches and running subcuticular). The bigger graft was used for the direct-to implant subpectoral reconstruction, and the smaller for the expander-based reconstruction.

From the St Luke's Hospital, Thessaloniki, Greece.

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**Fig. 1.** Longitudinal incision (length 10 cm) at the lateral thigh stopping 15 cm above the lateral border of the patella.

At the left side, after the breast surgeon completed the skin-sparing mastectomy, the plastic surgeon raised the pectoralis major from the fourth to the eighth hour at the level of the inframammary fold (dual plane). Then, a round smooth 240cc implant (SMPX-240CC, MENTOR, Johnson and Johnson) was inserted submuscularly, and the fascia lata graft was stitched to the muscle edge with 2-0 Polydioxanone, Ethicon, Johnson and Johnson (PDS 2-0) running stitch and secured at the inframammary fold with four interrupted 2-0 PDS stitches (Fig. 3). A subcutaneous 12F drain was inserted, and the skin was closed with deep interrupted and subcuticular running 3-0 Monocryl stitches.

At the right side, the pectoralis major was raised from the fourth to the eighth hour at the level of the inframammary fold and a 350-cc tissue expander (CPX4 354-8222 medium high, MENTOR, Johnson and Johnson) was inserted submuscularly. The smaller fascia graft was stitched at the border of the muscle (Fig. 4) and secured at the inframammary fold as aforementioned. A subcutaneous drain 12F was placed and the skin was stitched as above. At the axilla, a 12F drain was inserted. The wounds were covered with Steri-Strips, and a supporting postmastectomy bra was placed at the end of the operation. The postoperative course was uneventful. The breast drains were removed after draining less than 20 mL for three consecutive days (10 days left and 9 days right). The thigh

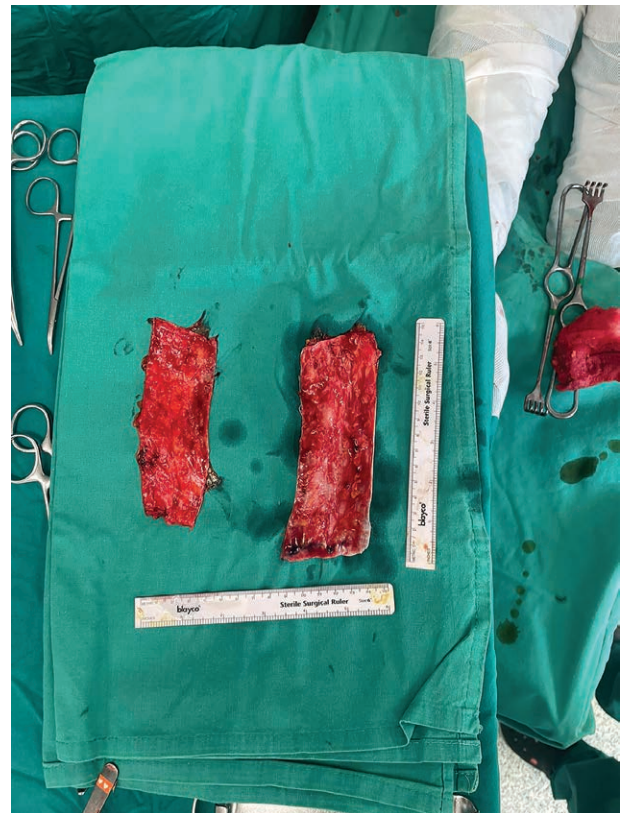
### Takeaways

**Question:** We present the first use of a patient's fascia lata instead of a matrix.

**Findings:** Fascia lata was used instead of a matrix for subpectoral direct-to-implant reconstruction on the left side and subpectoral reconstruction with a tissue expander on the right side.

**Meaning:** Use of fascia lata as a matrix is appealing in subpectoral direct-to-implant breast reconstruction and also expander-based breast reconstruction because it is an autologous cost-free tissue.

drains were removed after draining less than 30 mL over 24 hours (3 d) and the same for the axilla drain (1 wk). The patient tolerated well the procedure and did not complain except for the several drains. No late postoperative complications (such as red breast syndrome, wound dehiscence, or capsular contracture) were documented in our 6-month follow-up. At 4-month follow-up (2 months post radiotherapy), the aesthetic appearance of scars was acceptable to the patient, there was no distortion due to radiotherapy, and expansion progressed uneventfully. (See figure, Supplemental Digital Content 1, which displays the patient at 2 months post radiotherapy. The thigh scars are acceptable to both patient and doctors and there



**Fig. 2.** Fascia lata grafts were harvested from the right side (6 × 14 cm) and from the left side (5 × 13 cm).



**Fig. 3.** Submuscular placement of the implant and coverage of the lower pole with fascia.



**Fig. 4.** At the right side submuscular placement of the expander and coverage of the lower pole with fascia.

is no distortion due to radiotherapy. <http://links.lww.com/PRSGO/D524>.)

### DISCUSSION

ADMs are increasingly used in direct-to-implant breast reconstruction.<sup>5</sup> Their advantages are superior initial breast contouring, decreased risk of capsular contracture after implant insertion, sustained positioning of the reconstructed breast, and better definition of the inframammary fold. They act as a biological scaffold promoting angiogenesis and allowing accelerated tissue ingrowth.<sup>3,6</sup> The critique is that the overall risk of complications and the cost of the operation is increased with ADMs.<sup>7</sup> Moreover, for immediate tissue expander reconstruction patients, a multicenter prospective analysis found that use of ADM had no significant effects on complications or patient-reported outcomes up to 2 years after the initial stage of reconstruction.<sup>8</sup> However, the cost still remains an issue. The fascia lata is a fascial plane that surrounds the deep tissues of the thigh and stabilizes the lateral compartment of the thigh. It receives fibers from gluteus maximus and tensor fasciae latae laterally. At mid lateral thigh it forms the iliotibial tract. It is a malleable fabric that is used for several purposes from the repair of the dura mater to the reconstruction of the brachial triceps tendon and the Achilles tendon and also, to the use for a surgical facial reanimation.<sup>9</sup> Schettini et

al mentioned the use of cadaveric fascia lata in breast reconstruction. They reported comparable results with ADM. Nevertheless, cadaveric fascia is still an allograft (if taken from another human) and has a considerable cost. We present the use of fascia lata as autograft. A restriction of this method is the limited amount of tissue that we can harvest compared with a commercially available ADM/polypropylene mesh. Therefore, it could not be used for a subcutaneous direct-to-implant reconstruction or for a submuscular direct-to-implant reconstruction where we want to use a big implant. Another disadvantage is the extra longitudinal scar that is placed at mid lateral thigh. Possible minimally invasive harvest techniques could potentially ameliorate this issue. We think that the use of fascia lata as matrix is appealing in subpectoral direct-to-implant breast reconstruction and also expander-based breast reconstruction, as it is an autologous cost-free tissue.

*Georgia-Alexandra Spyropoulou, MD*  
Aristotle University of Thessaloniki  
Kurillou kai Methodiou 3, Kalamaria  
Thessaloniki, Greece  
E-mail: [gspyropoulou@hotmail.com](mailto:gspyropoulou@hotmail.com)

### DISCLOSURE

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

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