

TAFF, Tailored Available Flap And Fat Grafting, As An Autologous Option For Total Breast Reconstruction In Ambulatory Setting

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INTRODUCTION

The demand for ambulatory breast reconstruction continues to rise. This phenomenon was exacerbated by the COVID-19 pandemic, which required inpatient, elective procedures to be cancelled. Autologous breast reconstruction, a traditionally inpatient procedure due to the need for continuous flap and pain monitoring, is preferred by many patients¹. The institution of the Enhanced Recovery After Surgery (ERAS) protocol decreased the length of post-operative stay but did not eliminate the need for it². Post-mastectomy autologous breast reconstruction can be achieved using local flaps, which rely on their native blood supply, eliminating the need for microsurgical anastomosis. We present a novel technique of outpatient total autologous breast reconstruction utilizing Tailored Available Flap with Fat grafting (TAFF).

METHODS

After institutional review board approval, a retrospective analysis was conducted of all consecutive patients who underwent breast reconstruction by the senior author using the TAFF concept from January 2013 to May 2024. All patients were followed post-operatively for at least 3 months. TAFF utilizes intraoperatively tailor-tacked lateral chest wall soft tissue islandized on an available perforator coupled with fat grafting. Patient demographics, perforator type, flap skin paddle area, fat grafting volumes, and post-operative outcomes were analyzed.

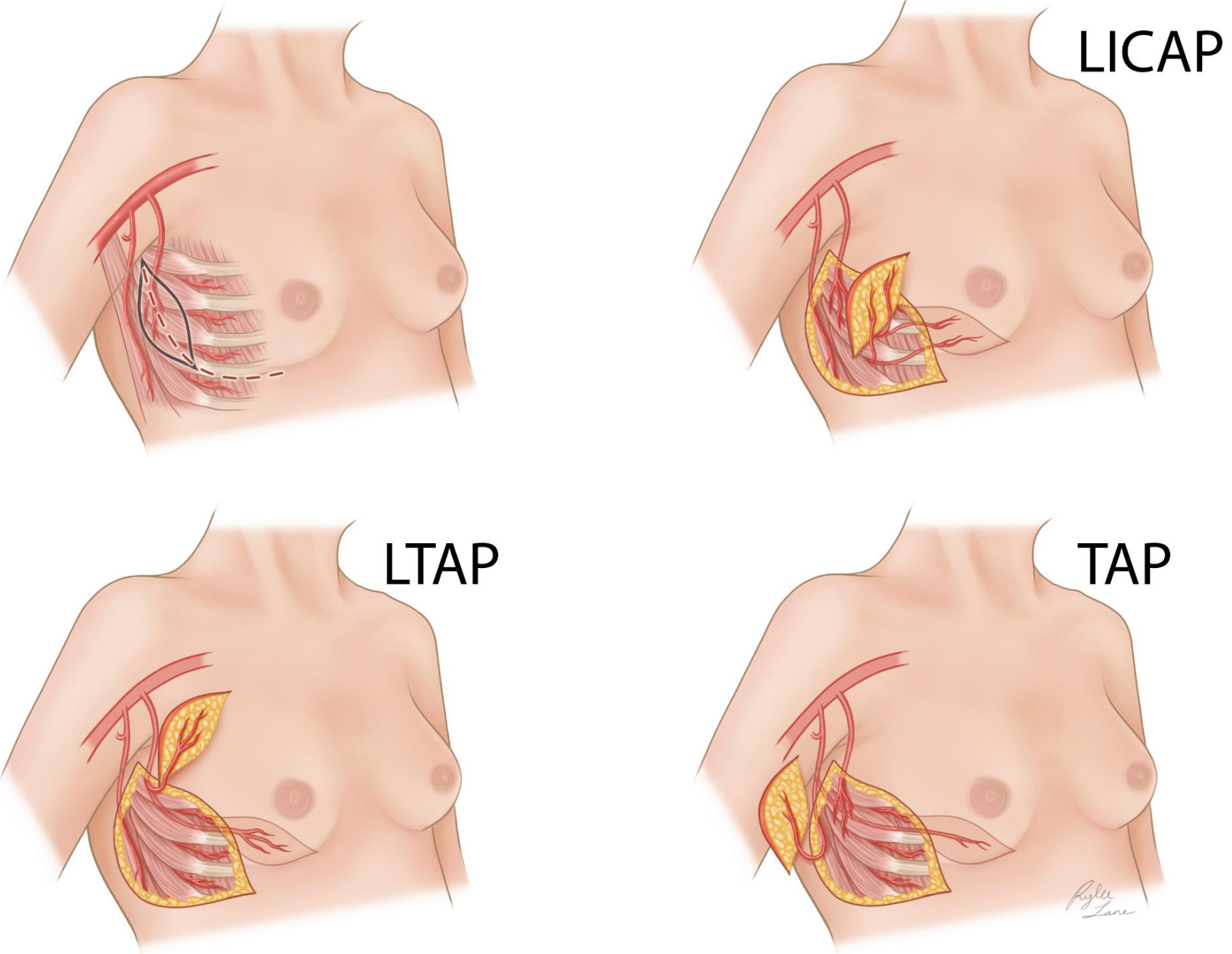


Figure 1: Local perforator flaps used in TAFF reconstruction

RESULTS

Fifty six patients with BMI 29.87 ± 6.13 underwent 102 outpatient breast reconstructions using TAFF. The most common indications for a flap were implant replacement (36.27%), implant loss to infection (20.59%), and absence of breast (17.65%) (Figure 2). Flap reconstruction was performed 1.1 years [0.5 year, 5.2 years] following mastectomy. The lateral intercostal (LICAP, 90.2%) and thoracodorsal artery perforator (TAP, 9.8%) served as the pedicle. Skin paddle area was 90.0 cm^2 [63 cm^2 , 126 cm^2]. Fat grafting was performed up to four times to complete reconstruction (Figure 3).

Post-operative included, seroma/hematoma formation (11.76%) fat necrosis requiring surgery (10.61%), wound dehiscence (8.82%), distal flap necrosis (5.88%), infection of flap (4.9%), hypertrophic scarring (2.94%), and loss of flap (1.96%) at follow-up. Radiation impacted post-operative outcomes: breasts that were radiated were significantly more likely to experience fat necrosis, loss of flap, and any necrosis ($p = 0.01$, 0.03 , and 0.02) (Table 1).

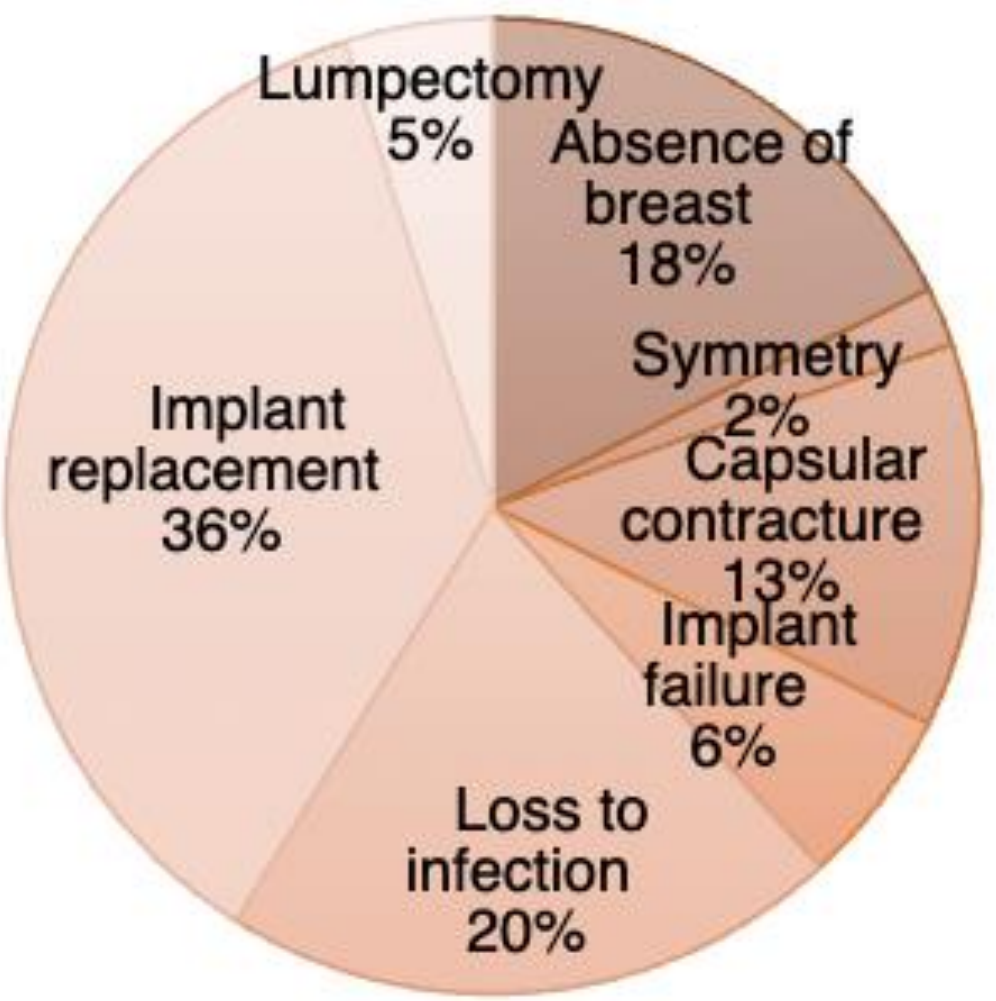


Figure 2: Indications for flap

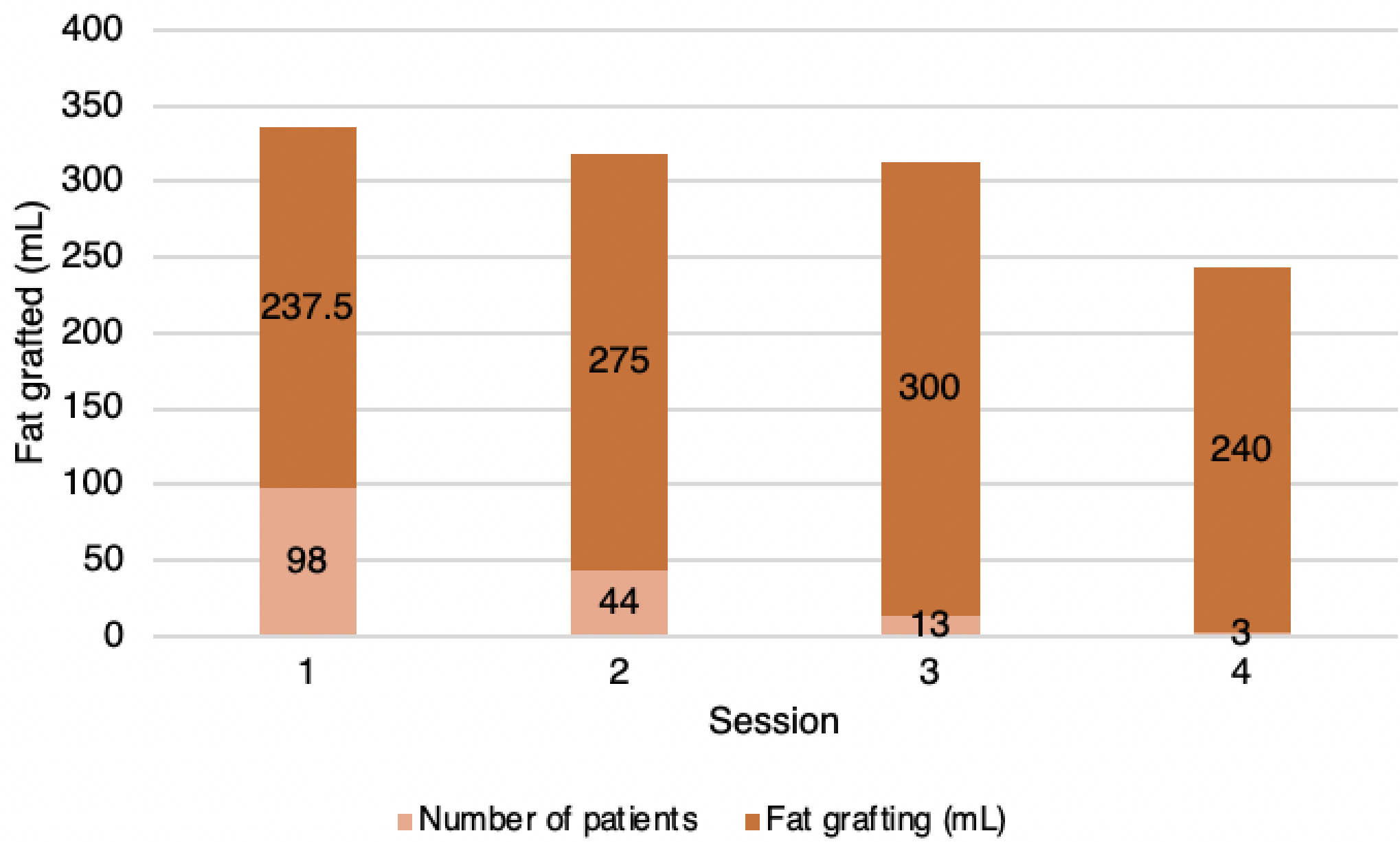


Figure 3: Patients undergoing fat grafting sessions

Complication	Radiated breasts (N = 17)	Non-radiated breasts (N= 73)	P-value
Fat necrosis	14 (82.35)	35 (47.95)	0.0103
Fat necrosis requiring surgery	2 (12.50)	3 (6.98)	0.6056
Distal flap necrosis	3 (17.65)	3 (4.11)	0.0787
Loss of flap	2 (11.76)	0 (0)	0.0340
Infection of flap	2 (11.76)	3 (4.11)	0.2372
Wound dehiscence	3 (17.65)	6 (8.22)	0.3627
Seroma/hematoma	3 (17.65)	8 (10.96)	0.4288
Hypertrophic scarring	1 (5.88)	2 (2.74)	0.4706
Any necrosis	14 (82.35)	37 (50.68)	0.0176

Table 1: Complications based on radiation status



Figure 4: Before and after TAFF

CONCLUSIONS

TAFF offers an appealing approach to achieving outpatient autologous breast reconstruction, demonstrating low overall morbidity and acceptable complication rates. By leveraging existing excess tissue without the need for microsurgical anastomosis, TAFF is a resourceful reconstruction technique. Patients with prior radiation, though, may necessitate an alternative approach to autologous breast reconstruction, as they exhibit higher rates of complications.

REFERENCES

