

# Stacked Superior Gluteal Artery Perforator (SGAP) Flaps for Unilateral Breast Reconstruction

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## Background

- According to the last census by the American Society of Plastic Surgeons in 2020, 47, 215 unilateral breast reconstructions were performed.
- With an increasing demand for autologous breast reconstruction, improved microsurgical techniques and new reconstructive options have been developed; however, there are still obstacles in performing these procedures with patients with suboptimal fat distribution or when typical donor sites are not available.
- Patients with low BMIs or prior history of abdominal surgery in which the gold standard of the deep inferior epigastric perforator (DIEP) flap is not a viable option are in need of alternative options for breast reconstruction
- Stacking the superior gluteal artery perforator (SGAP) flap may be a feasible alternative that provides adequate breast projection in unilateral breast reconstruction.

## Methods

A case series of unilateral breast reconstruction with stacked bilateral SGAP flaps was performed on four patients. Their results were compared and contrasted to the previously described version of the stacked inferior gluteal artery perforator (IGAP) flap for unilateral breast reconstruction as well as to the standard abdominally based flaps. Factors like aesthetic appeal, complexity and technicality of the surgery, and postoperative pain were all taken into consideration.

## Results

The SGAP provides an alternative for unilateral breast reconstruction in thin candidates or who do not qualify for abdominally based flap harvest. It is associated with decreased early postoperative pain as compared to the IGAP that causes substantial discomfort when sitting and may increase dehiscence rate. Furthermore, this reconstructive procedure provides a balanced and aesthetically pleasing donor site. The four patients who underwent surgery experienced an uncomplicated postoperative course and satisfactory results.



Figures 1-3: Post-op pictures (right lateral, anterior, left lateral).

## Limitations

The dissection of the lateral perforator is technically challenging and time consuming but provides the necessary pedicle length for a superior donor flap. Like the IGAP but unlike abdominally based flap, intraoperative repositioning of the patient is required which further extends intraoperative time. Although minimal, there is still discrepancy in the venous caliber matching with the retrograde internal mammary system anastomosis. The scar is also more prominent with the SGAP and there is the potential to create unappealing indentation on the lateral aspect of the gluteus.

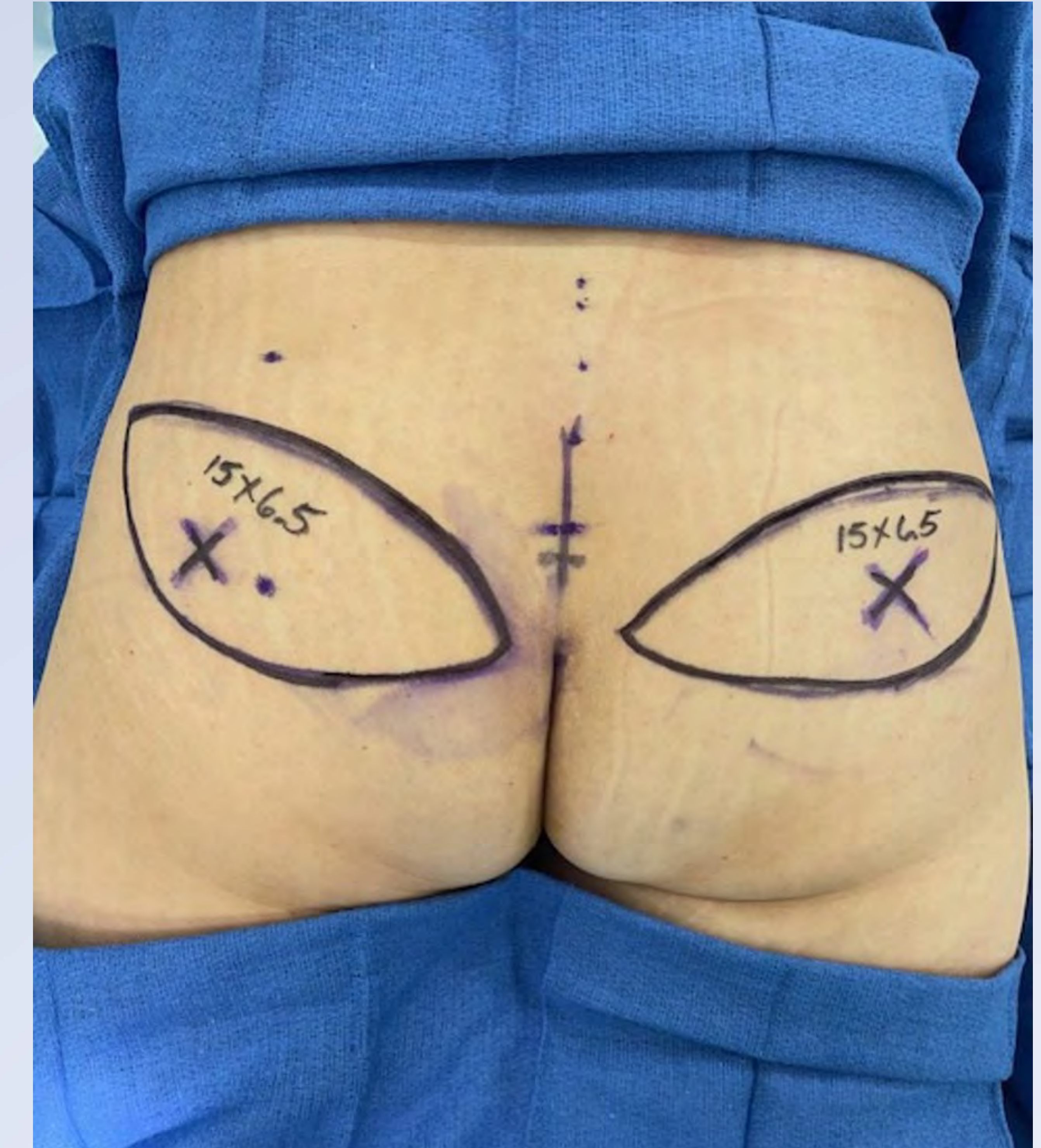


Figure 4: Pre-operative markings demonstrating 15x6.5 bilateral flaps based on the superior gluteal artery perforators.

## Conclusions

The stacked SGAP flap may be a more favorable option than previously thought, especially when considered in patients with suboptimal donor site mass. Our case series demonstrates acceptable cosmetic results in both the primary breast reconstruction and donor site. With a long pedicle from lateral dissection and bilateral harvesting, the stacked SGAP provides the necessary bulk for reconstruction of a moderate profile breast with a symmetrical and balanced gluteus left behind.