

The Fleur-De-Lis Upper Gracilis Flap Versus Deep Inferior Epigastric Perforator (DIEP) Flap for Bilateral Breast Reconstruction in Thin Patients: A Prospective Comparison of Outcomes, Patient Satisfaction and Aesthetic Results

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Abstract

Introduction: In thin patients the inner thigh has been advocated as a favorable donor site for autologous breast reconstruction (1,2). We have offered the *fleur-de-lis* upper gracilis flap (Figure 1), as an alternative to DIEP flaps for bilateral reconstructions (3). The purpose of this study is to compare outcomes, patient satisfaction and aesthetic results in thin women undergoing bilateral breast reconstruction with *fleur-de-lis* gracilis versus DIEP flaps.

Methods: In a prospective single surgeon study 124 out of 334 free flap breast reconstructions over a three-year period (2010 – 2012, with median follow-up of 11 months) were included based on body habitus (thin abdominal donor site, BMI<27.5) and the need for bilateral reconstruction. 62 *fleur-de-lis* gracilis and 62 DIEP flaps were performed. Patient satisfaction was evaluated using post-reconstruction BREAST-Q questionnaires. Aesthetic outcomes were assessed by an independent board of five plastic surgeons using standardized photographs.

Results: The gracilis group had similar demographics, slightly lower BMI (22.5 vs. 23.6; $p=0.053$) and longer mean hospital stay (4.5 versus 4.0 days, $p < 0.05$) as compared to the DIEP group. There were no flap-related complications. Major donor site complications included one thigh hematoma (3.2%) in the gracilis group and one abdominal bulge (3.2%) in the DIEP group. There was no instance of major (>2cm) dehiscence or lower extremity edema in the gracilis group. Minor complications in the gracilis versus DIEP group included postoperative seromas (46.4% vs 20.7%, $p<0.05$), erythema (46% vs 13%, $p>0.05$) and minor (<2cm) dehiscence (34.5% vs 3.2%, $p=0.054$). Forty-eight patients (77%) completed the BREAST-Q Survey. In both groups overall patient satisfaction was high (80% in gracilis vs 82% in DIEP group) without significant differences in satisfaction with breast appearance, physical, psychosocial, and sexual well-being. Satisfaction with donor site appearance was higher in the DIEP when compared to the gracilis group (88% vs 75%, $p<0.05$). Aesthetic analysis revealed similar results for the gracilis versus DIEP group (mean score 3.46 vs 3.43, respectively on a four point scale).

Conclusion: With appropriate patient selection, both bilateral *fleur-de-lis* gracilis and DIEP flaps offer similarly high patient satisfaction and donor site acceptance. The *Fleur-de-lis* gracilis flap has extended our ability to offer autologous bilateral breast reconstruction to thin patients with otherwise inadequate abdominal donor site.

Reference Citations:

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Figure 1. The *fleur-de-lis* gracilis flap.

