

Immediate vs Delayed Breast Reconstruction:
A Single Institution Experience

Michael Zhou, Samar Kayfan, Jenny Wang, Nicholas T. Haddock M.D., Sumeet S. Teotia M.D.

Department of Plastic Surgery, UT Southwestern Medical Center Dallas, TX, USA

Background

Deep inferior epigastric perforator (DIEP), superficial inferior epigastric artery (SIEA), and profunda artery perforator (PAP) flaps are acceptable options for autologous breast reconstruction. This study comprehensively evaluates the differences in outcomes between patients receiving immediate, delayed/immediate (staged with the use of tissue expanders), and delayed breast reconstructions (without the use of tissue expanders).



Figure 1. Delayed reconstruction, post mastectomy

Results

Immediate reconstructions, when compared to delayed-immediate reconstructions, encountered more infections ($p < 0.01$), more wound occurrences ($p = < 0.01$), longer lengths of stay (5.2 versus 4.1 days), longer procedure times ($p = < 0.01$), and larger number of revision surgeries (2.4 vs 1.4 revisions) in patients receiving a single unilateral flap. Between outcomes of single flap immediate and delayed reconstructions, immediate reconstruction resulted in longer lengths of stay (5.2 vs 4.0 days), longer procedure time ($p = < 0.01$), larger number of revision surgeries (2.4 vs 1.7 revisions), and higher chance of wound necrosis ($p = < 0.01$).

In patients receiving 2 free flaps (bilateral or double-pedicle unilateral reconstruction), immediate reconstructions encountered larger numbers of subsequent revision surgeries (1.7 versus 1.1 revisions) and no other significant differences compared to delayed-immediate reconstructions.

There were no significant differences between delayed and delayed-immediate reconstructions.



Figure 2. DIEP perforators on abdominal flap

	Single flap Immediate vs Delayed- immediate	Single flap Immediate vs delayed	2 free flaps Immediate vs Delayed- immediate
Infections	+		
Wound necrosis	+	+	
LOS	+	+	
Procedure time	+	+	
Revision surgeries	+	+	+

Table 1. Comparing immediate and delayed reconstruction complications

Methods

547 free flaps (DIEP, SIEA, or PAP) on 331 patients were performed. Patients were grouped based on reconstruction timing: immediate ($n = 175$ flaps), delayed-immediate ($n = 247$ flaps), and delayed ($n = 125$ flaps). Comorbidities, preoperative radiation, neoadjuvant/postoperative chemotherapy, length of hospital stay, number of subsequent revision surgeries, and breast and donor site complications were analyzed among the groups.

Conclusion

Immediate, delayed-immediate, and delayed reconstructions are all reasonably safe options for breast reconstruction. However, higher rates of complications among immediate reconstructions imply delayed-immediate and delayed reconstructions may be superior options to immediate reconstructions, not only in bilateral reconstructions, but especially in single free flap reconstructions. These results should be considered between the surgeon and patient when deciding an appropriate reconstruction plan based on the risks, benefits, and potential costs associated with different breast reconstruction timings.



Figure 3. 3 year post-op, single flap reconstruction