
Surgical decision making in Immediate breast reconstruction

Ahmed El Shahhat El Awadi

The initial implant reconstructions were placed under the thin mastectomy skin flaps without prior expansion of the tissue, a practice that led to frequent complications such as skin loss, malposition, infection, exposure of device, hematoma and seroma. Silicone breast implants were introduced in the early 1960s, but in 1992, the Food and Drug Administration (FDA) placed a moratorium on silicone implants due to concern regarding its safety of use in patients. Since then saline implants had been exclusively used in the United States, until recently. In 2006, after an extensive scientific review revealed no significant risks, the FDA approved the use of silicone implants for breast reconstruction in women of all ages. The aims of reconstruction are as follows: 1. Volume replacement to achieve symmetry with the contralateral breast. 2. Establishment of the superior mammary slope and the inferior pole. 3. Reconstitution of the inframammary fold. 4. Reconstruction of the nipple-areola complex. Immediate reconstruction can safely be performed even in the presence of locally advanced breast cancer. In a report from the M.D. Anderson Cancer Center, the outcomes of patients with locally advanced breast cancer who underwent immediate reconstruction were compared with patients with less extensive disease who also underwent immediate breast reconstruction. The local and distant relapse rates were similar for patients undergoing mastectomy with or without immediate breast reconstruction. Advantages of immediate breast reconstruction: 1. Potential for a single operation and period of hospitalization. 2. Maximum preservation of breast skin and the inframammary fold. 3. Good quality skin flaps, which are unscarred and have not endured radiotherapy. 4. Better cosmetic results in skin-sparing mastectomy. 5. Reduced need for balancing surgery to the contralateral breast. 6. Lower cost than delayed reconstruction. Disadvantages of immediate reconstruction: 1. Delay of adjuvant therapy and delayed wound healing may occur. 2. Partial loss of the mastectomy skin flaps, especially if the oncologic surgeon needs to create thin skin flaps. 3. Residual disease or close surgical margins may necessitate the use of postoperative radiation therapy, which can adversely affect the reconstruction. 4. Limited time for decision-making, Increased operating time, and difficulties of coordinating two surgical teams when required. Techniques of immediate breast reconstruction include skin sparing mastectomy, Nipple areola sparing mastectomy with different types of flap reconstruction such as LD flap, TRAM flap, DIEP flap and SIEA flaps. Choice the techniques of breast reconstruction depends on several

factors such as: 1- Stage of cancer. 2- Donor flap site. 3- Breast size. 4- Body habits. 5- Patient fitness. 6- Need of adjuvant therapy. 7- Remaining skin and underlying muscles. Several variations of latissimus dorsi flap technique are possible: 1. Muscle only flap, without a skin island. 2. Myocutaneous flap with or without a breast implant or expander. 3. Muscle sparing or perforator based techniques. 4. latissimus dorsi fat added flap: The additional volume allows single-stage, skin-sparing mastectomy with immediate autologous breast reconstruction without implant and without contralateral operations in medium and large-sized breasts of C and D cup brassier sizes. The lower abdomen is often an abundant source of tissue for autologous breast reconstruction. A sizeable and natural feeling breast mound can be created without an implant or tissue expander using tissue which is usually discarded during an aesthetic abdominoplasty procedure. The final appearance of the donor site defect is often acceptable and in some cases may offer a cosmetic improvement. Though this technique can provide excellent long-term results, donor site morbidity should not be underestimated. The triple blood supply to the lower abdominal tissue allows it to be used in a variety of techniques:

- Pedicled transverse rectus abdominis myocutaneous flap (TRAM)
- Free transverse rectus abdominis myocutaneous flap (TRAM)
- Free deep inferior epigastric perforator flap (DIEP)
- Free superficial inferior epigastric artery flap (SIEA)

Indications for breast reconstruction using lower abdominal tissue include: 1. Sufficient lower abdominal tissue. 2. Large Contralateral breast. 3. Divided or atrophic latissimus dorsi muscle. 4. Previous complications with implant based reconstruction. 5. Bilateral breast reconstruction. Patient and implant selection are crucial. Several techniques are possible:

- Fixed volume implant (single stage)
- Variable volume expander-implant (single stage)
- Tissue expansion followed by permanent implant (two stage)

Advantages of tissue expansion: 1. Simple and flexible technique. 2. May not involve additional scarring. 3. Breast is reconstructed with local skin. 4. Allows insertion of larger implants. 5. Shorter procedure. 6. Shorter convalescence and rehabilitation. 7. Does not preclude further reconstruction options. 8. Avoids donor site morbidity.

Disadvantages of tissue expansion reconstruction: 1. Multiple staged procedures. 2. Multiple hospital visits for expansion. 3. Added complications of implants. 4. Need for revisional surgery. 5. Lack of projection. 6. Less likely to achieve symmetry. 7. Less satisfactory long-term cosmetic outcome. 8. Capsular contracture particularly after adjuvant radiotherapy. 9. Limited ptosis.

Nipple reconstruction technique include Skate flap, F-FLAP, Bell flap, Fishtail flap, Hemi-nipple graft and Dome technique with double pedicle while areolar reconstruction has 2 most common techniques which are tattooing and skin grafting. Post-reconstruction RT is unfortunately associated with local complications, thus causing some debate as to the safety of performing SSM and IBR in women who are likely to require this treatment. There is a lack of prospective trials concerning the use of RT with SSM and most of the published evidence is derived by enthusiasts from single-centers. Although results from individual series vary considerably, it appears that the complications of RT following immediate breast reconstruction occur in a high proportion of patients.