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One stage breast reconstruction following prophylactic mastectomy for ptotic breasts: The inferior dermal flap and implant

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Summary *Introduction:* Immediate reconstruction following prophylactic mastectomy for larger ptotic breasts is difficult. Tissue expansion in these patients often results in poor cosmetic outcomes. Autologous options may not be possible due to clinical unsuitability or patient choice. Using the inferior dermal flap with implant achieves lower pole fullness and allows a one-stop reconstruction in the larger ptotic breast.
Methods: The inferior dermal flap and implant was performed on ten patients (20 breasts). Average age was 43 (range 36—53). The average BMI was 37 (range 32—43). The distance from nipple to IMF varied from 15 cm to 26 cm. The average implant size was 533 (range 390—620). Complications were minimal with one patient experiencing delayed wound healing at the T-junction and one patient developing inferior pole erythema postoperatively that settled with antibiotics.
Conclusion: The inferior dermal flap and implant provides a one-stop reconstructive option. It is reliable, safe and maintains the breast envelope while giving excellent size, shape and symmetry in the larger ptotic patient.

Introduction

The efficacy of prophylactic mastectomy for women with a high lifetime risk of breast and/or ovarian cancer due to their family history or for those women known to be carrying a mutation in BRCA1/2 is undisputed.[1,4] Uptake rates vary considerably and are dependent on a dedicated multidisciplinary team approach.[4]

Following assessment at the family history clinic and/or genetic testing women with a high risk of breast cancer (lifetime breast cancer risk, >25%) are given a second genetics appointment followed by a psychological assessment.[1—4] If deemed appropriate patients are then referred for prophylactic mastectomy +/− reconstruction. This is in

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accordance with UK National Institute for Health and Clinical Excellence.[5]

An assessment of the patient including previous surgery, past medical history, body mass index, suitability for all reconstructive options enables the patient and surgeon to discuss the various options available including tissue expander/implant based reconstruction, local flaps +/− tissue expander implants and free flaps. A further discussion with a breast care nurse allows patients to understand the normal pre and postoperative care and recovery following the various reconstructive options.[1–4]

The use of the inferior dermal flap with implant as a one stage reconstructive option can be performed following prophylactic mastectomy in larger patients with significant ptosis. These patients are often patients with high BMI's who are relatively unfit and/or unwilling to undergo a more complex form of reconstruction.

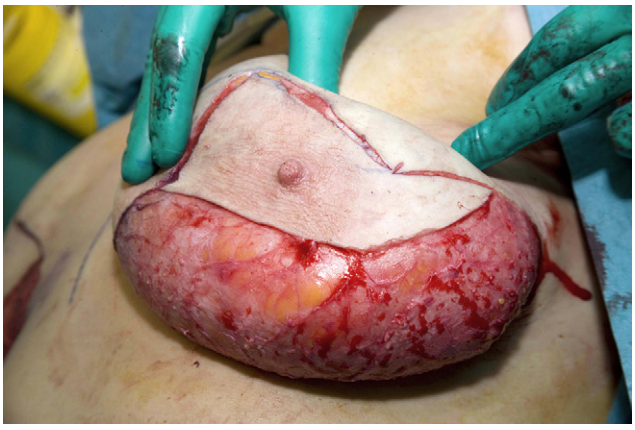

Figure 1 Marking of Wise pattern and de-epithelialisation of inferior dermal flap.

Procedure

The most crucial measurement for inferior dermal flap reconstruction with implant is the distance from the nipple to the inframammary fold. Where this distance is 15 cm or greater the technique may be considered as a one stage procedure with implant. The other important measurement is the breast and chest wall width that will determine the implant size.

Where the sternal notch to nipple distance is over 30 cm preservation of the nipple areola complex is not considered appropriate due to the increased risk of nipple areola necrosis and leaving breast tissue in order to maintain vascularity. This is often the case in larger ptotic breasts. The markings of the Wise pattern start with the upper V of the Wise. The lines are drawn as close to the areola as possible and the top of the V is dictated by the width of the areola. The horizontal limbs of the upper line of the Wise pattern are drawn from the lower part of the areola. This distance from the top of the V will dictate the breast envelope and the tension on the closure. Where there is >15 cm from nipple to IMF an 8 cm distance from the top of the V to the horizontal limb is marked. Where there is 20 cm or more from nipple to IMF this distance can be increased to 10 cm.

The lower IMF incision is generally placed higher than the current IMF if possible as it is usual for the ptotic breast to be placed higher on the chest. By increasing the height of the IMF it decreases the amount of eventual dermal flap available and the pros and cons need to be considered in terms of overall size. Raising the IMF also decreases the problems of de-epithelialisation that are encountered at the IMF.

The breast is infiltrated with 20 mls of Marcaine with Adrenaline and 1 L of normal saline. Following completion of the preop markings the dermis overlying the lower portion of the Wise pattern below the areola are de-epithelialised with a scalpel. (Figure 1). The upper part of the dermal flap is then incised through dermis and subcutaneous tissue and the dermal flap raised between the plane of the subcutaneous fat and breast tissue in the normal mastectomy plane with a bovie. This can result in variable thickness of flap between patients depending on the mastectomy plane and is usually around 5 mm thick (Figures 2,3). The flap is raised down to the chest wall in this plane towards the IMF. The breast tissue is now sitting superior to the dermal flap and the mastectomy can be performed as normal through a Wise incision with the bovie. During the mastectomy the flap should be protected with a damp swab. This method provides excellent access for the mastectomy. Following completion of the mastectomy the pectoralis major is raised and the infero-medial attachments of the pectoralis are detached. On the lateral border of the pectoralis the serratus fascial attachments are left intact and the pocket extended to the border of the chest wall.

Haemostasis is performed with bipolar diathermy and then an inflatable sizer is placed in the pocket and the dermal flap positioned over the sizer and attached to the pectoralis muscle using 3.0 monocryl (Figure 3). In each case the dermal flap will be different in terms of thickness of the flaps, length and breadth. The sizer must be completely covered by the dermal flap before the vertical limbs of the Wise can be placed to their new position. A starting volume of 50% of the final estimated implant volume is an appropriate fill at this stage. The T-junction is usually between 10 and 13 cm from the midline depending on chest width/. The vertical limbs are temporarily positioned with staples at this point and the sizer inflated with

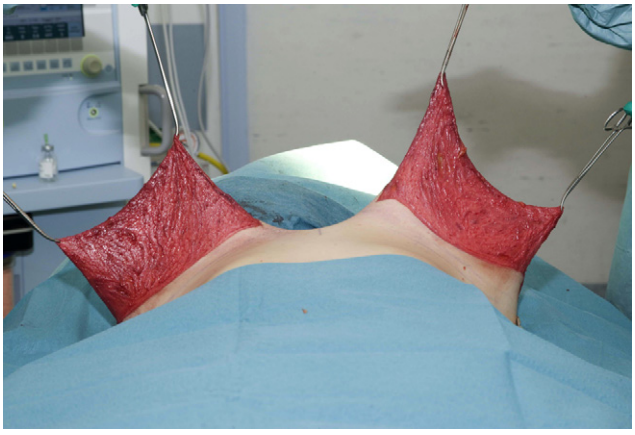

Figure 2 Inferior dermal flaps raised.