Nipple and Areola Reconstruction

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During a mastectomy, the nipple and areola (i.e. the pigmented area surrounding the nipple) are removed. Therefore, nipple and areola reconstruction represents the final stage of a complete breast reconstruction. It should be noted that these procedures are completely optional. Some women may want only the shape of the breast to fill a bra and look natural in clothes.

Nipple and areola reconstruction is performed at a time when the surgeon and patient are both happy with the final shape and size of the reconstructed breast. Depending on the type of nipple and areola reconstruction performed, this may be done either in the operating room or as a "day surgery" procedure in the surgeon's office or minor procedures room. This procedure may be performed under local or general anaesthesia.

Nipple Reconstruction

How is the procedure performed?

The nipple may be reconstructed by using a flap or a graft. Flaps are pieces of tissue that are moved from one location to another with their own blood supply intact. Grafts are pieces of tissue that are completely removed from their own blood supply and rely on the ingrowth of a new blood supply at the new site.

Flap reconstructions have an advantage over graft reconstructions in that the bulk and projection of the nipple are generally more reliable. The main disadvantage of flap reconstructions is that new scars are left on the breast surrounding the new nipple location. Graft reconstructions, on the other hand, leave scars at distant locations.

Flap Reconstructions

Local tissue surrounding the location for the new nipple can be used as a flap to reconstruct the nipple. Numerous different potential ways of performing this procedure have been described. In general, skin and some subcutaneous fat is gathered from areas surrounding the new nipple location and then sutured together to create a new nipple. See Figures 1 to 7, which demonstrate one of the typical ways of performing a flap reconstruction of the nipple.

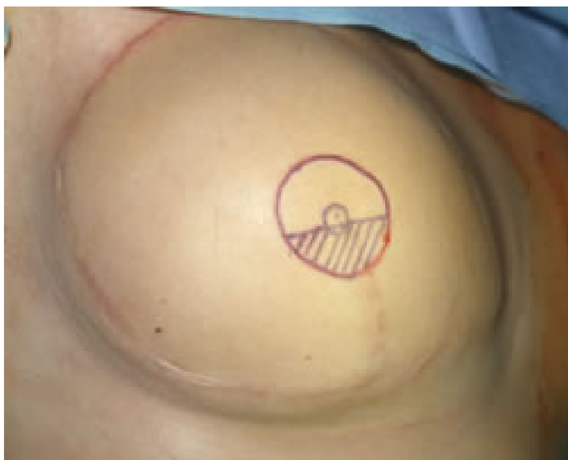

Figure 1 - This drawing represents a typical method of performing a "skate flap" nipple reconstruction.

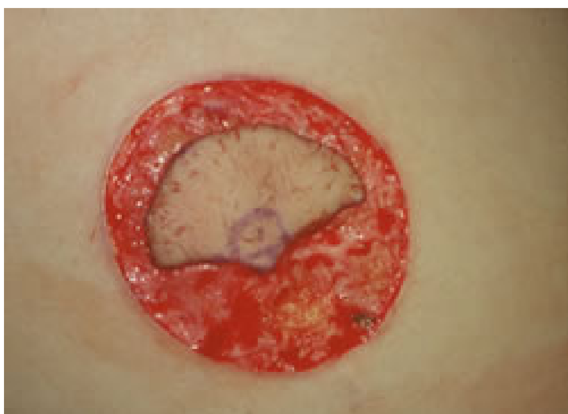

Figure 2 - This photograph shows that the "hatched" area in the previous photograph has been excised.

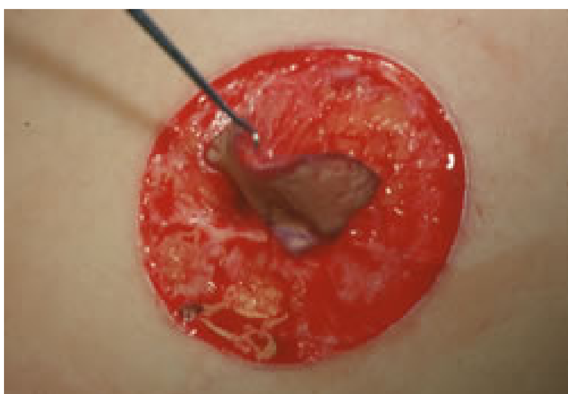

Figure 3 - The remaining skin is then folded onto itself to create a nipple.

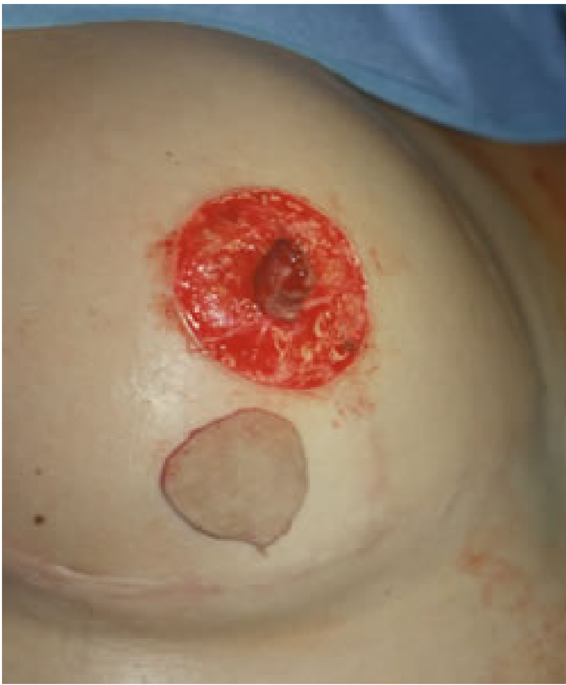

Figure 4 - This photograph shows the newly formed nipple and a graft that will be used for the areola reconstruction.

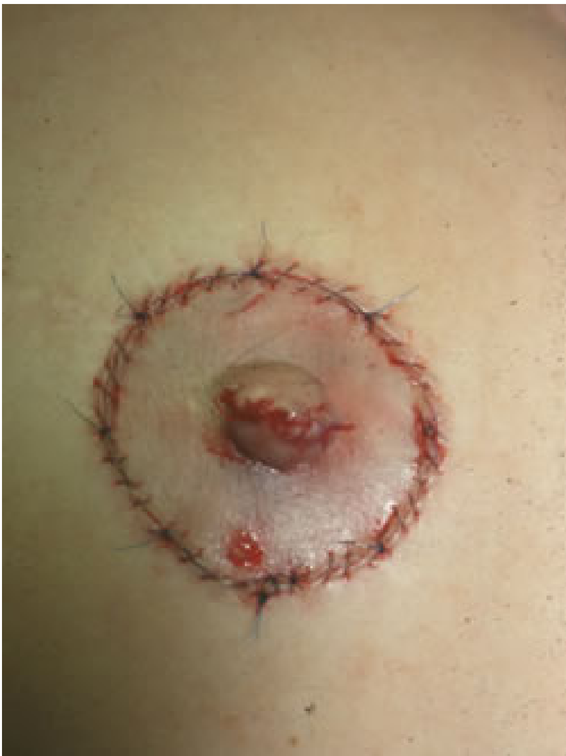

Figure 5 - This is the final result immediately postoperatively.

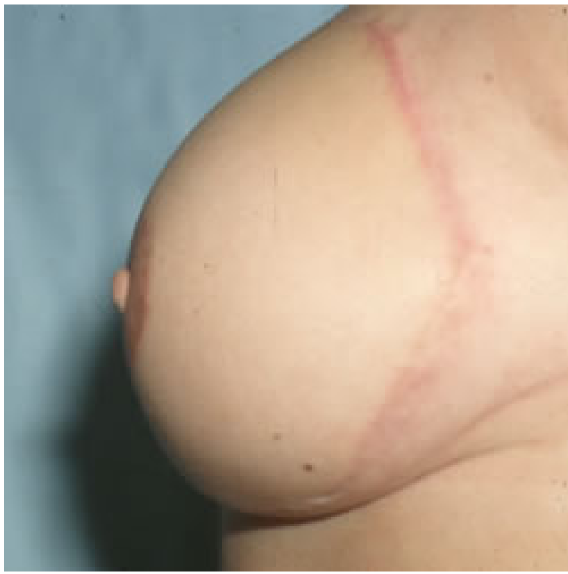

Figure 6 - This is the final result later postoperatively (from the side).

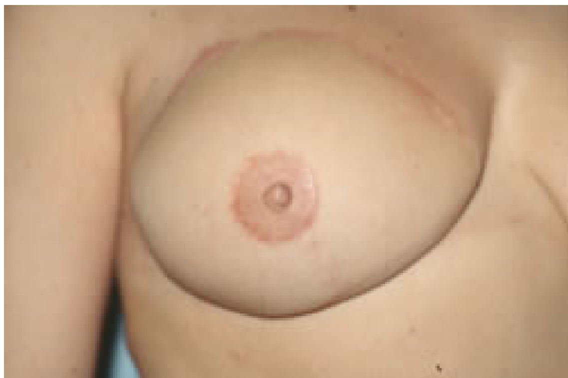

Figure 7 - This is the final result later postoperatively (from the front).

Graft Reconstructions

There are generally 3 areas from which nipple grafts are commonly harvested. These include: the opposite nipple, the labia, and the earlobe. In general, the patient's opposite nipple provides the best colour and texture match for the missing nipple.

In patients with a large nipple on the opposite breast, some of this nipple may be used to reconstruct the missing nipple. Either the remaining nipple is divided and the distal portion is used as the graft or the nipple may be bisected, with one half being used for the missing nipple. The remaining half of the nipple is then simply repaired by direct suture closure. However, in patients who have had bilateral mastectomies, this is not a possibility as there is no remaining nipple to use.

The labia and earlobe provide alternative donor sites. A triangular wedge is removed from either the labia or the earlobe and it is grafted to the appropriate position on the reconstructed breast. One drawback with this type of nipple reconstruction is that the bulk and projection provided can be less than optimal. The defect in the labia or earlobe is simply closed directly. These types of nipple reconstruction are particularly useful in patients who have had bilateral reconstructions, as the option of using the patient's own nipple is not available.

Scars

If a flap reconstruction is used, the resultant scars are usually small (a few cm) and in the region of the nipple. They are then hidden by the areola reconstruction. If a graft reconstruction is used,

a small scar is created surrounding the new nipple. A small scar (1 to 2 cm) is also left in the region from where the graft was harvested (e.g. the opposite nipple, the labia, or the earlobe).

Areola Reconstruction

How is the procedure performed?

There are two ways to reconstruct the areola. One uses a graft from a distant location and the other is done with tattooing.

Tattooing

Tattooing is generally done after the nipple has been reconstructed and is the final stage of a complete breast reconstruction. It is done with very similar equipment as tattoo parlours use and provides a very satisfactory replication of the areola. It also has the advantage of being a simple office procedure that does not require another donor site or scar. See Figures 8, 9 and 10 for photographs of the tattooing process.

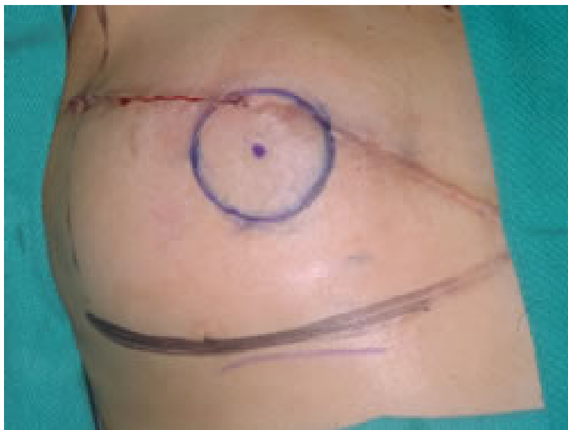

Figure 8 - This patient has had a right breast reconstruction. She is shown here in the operating room with the location of the new nipple and areola marked out. Note that she has also had the lateral aspect of her scar revised.

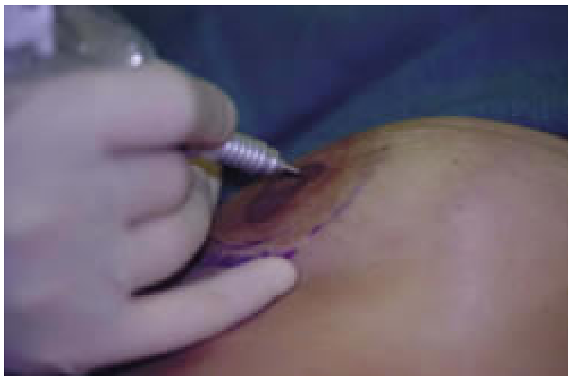

Figure 9 - This photograph shows the technique of tattooing the areola.

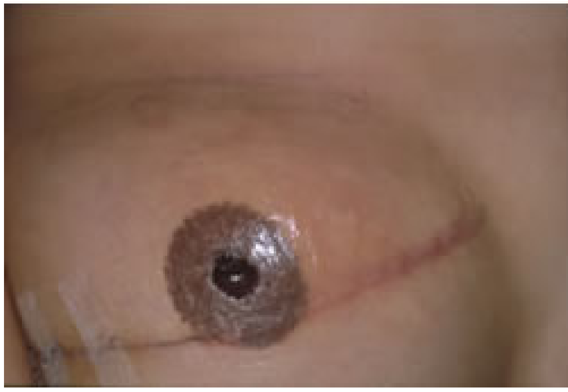

Figure 10 - This is the same patient after her nipple was reconstructed using a graft from her remaining natural nipple and her areola was reconstructed by tattooing. Note that the nipple appears dark in colour because of the early phase of healing.

Graft Reconstructions

The location of the new areola is marked and the skin in that area is deepithelialized (i.e. removed). A split-thickness skin graft is then harvested from the donor site. The most common donor sites include the upper inner thigh and the inner gluteal crease. These areas tend to provide an acceptable colour match to the opposite side. In some patients, when a reduction of the opposite natural breast is being performed, a portion of that breast's areola can also be used. The graft is then sutured in place and the donor site is closed primarily. See Figures 11, 12 and 13 for photographs demonstrating an areola reconstruction with a skin graft.

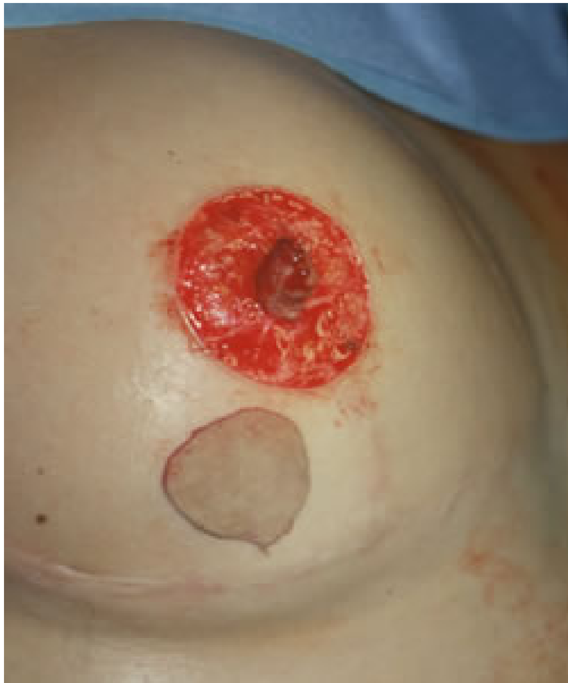

Figure 11 - This patient has had a nipple reconstruction using a local flap and will have her areola reconstructed with a graft. Note the graft sitting on the breast just below the new nipple.

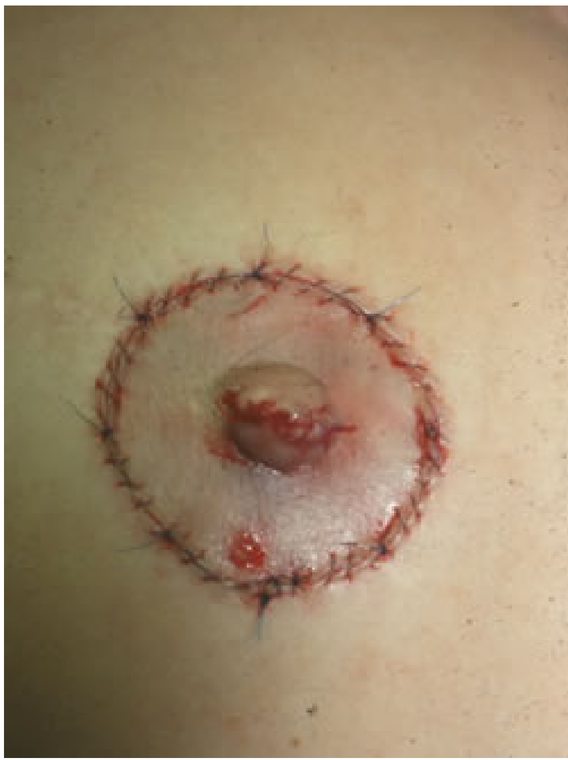

Figure 12 - This is the same patient immediately postoperatively.

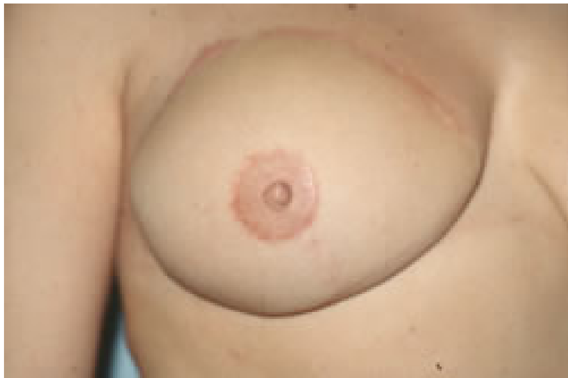

Figure 13 - This is the same patient later postoperatively.

Scars

If tattooing is used, there are no additional scars. If a graft is used for the reconstruction, a scar is created which encircles the new areola. An additional scar is also created in the area from which the graft was harvested (e.g. the thigh or gluteal area). Most times, this is a short linear scar (4 to 5 cm in length).

When should nipple and areola reconstruction be performed?

The timing of the nipple reconstruction depends on several factors including surgeon and patient preference. Commonly, it is performed at about 3 to 6 months post-reconstruction. This time interval will allow everything to heal, as the reconstructed breast is often somewhat swollen in the early postoperative period. Areola reconstruction can be carried out at the time of the nipple reconstruction or later, depending on the technique used and surgeon preferences.

Advantages of Nipple and Areola Reconstruction

- the reconstructed breast will match your natural breast more closely

- you can go braless and have the shape of a nipple on both sides

Disadvantages of Nipple and Areola Reconstruction

- it is usually an additional operation that may require another general anaesthetic
- it requires another recovery period (although much shorter)
- it produces new scars either at the nipple site or at a distant donor site
- the new nipple will not have the same sensation as the opposite nipple

Indications for Nipple and Areola Reconstruction

- any patient who has had a breast reconstruction may opt for a nipple and areola reconstruction

Contraindications for Nipple and Areola Reconstruction

- in general, there are no contraindications to this procedure

Possible Risks/Complications of a Nipple/Areola Reconstruction

The nipple and areola reconstruction may require another general anaesthetic and the inherent risks associated with that. There is also the potential that the new nipple graft or flap may not "take" or survive. In this case, the process of reconstructing the nipple may have to be done all over again.

Recovery Time

Nipple and areola reconstruction is most commonly done on an outpatient basis. The procedure usually requires less than 1 hour to complete. Most patients will have some mild pain or discomfort in the area, but this is usually treated adequately with analgesics. Most patients will resume their normal daily activities within a few days after the procedure.

Patient Examples of Nipple and Areola Reconstructions

Example 1

Example 2

Example 3