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BREAST RECONSTRUCTION – THE NEW MODALITIES

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Abstract –

Breast reconstruction is a type of surgery for women who have had all or part of a breast removed. The surgery rebuilds the breast mound so that it is about the same size and shape as it was before. Several types of operations can be used to reconstruction of breast i.e. Breast implant procedures, tissue flap procedures and combination of both. The ultimate goals of breast reconstruction are to provide permanent breast contour, to make the breasts look balanced and to give the convenience of not requiring an external prosthesis. Discuss above points with surgical complication following breast reconstruction surgery.

Key words- Breast implant, tissue flap procedures.

Introduction -

Breast reconstruction is a type of surgery for women who have had all or part of a breast removed. Breast reconstruction after mastectomy has evolved over the last century to become an integral component in the therapy for

many women with breast cancer. A complete breast reconstruction includes recreating the breast mound, the nipple and areola complex so that the breasts are symmetric with regard to pigmentation, shape, size, projection, and position.

The goals of breast reconstruction:

- To provide permanent breast contour.
- To make the breasts look balanced.
- To give the convenience of not requiring an external prosthesis.

Breast reconstruction can be performed using the following:

- Artificial material (silicone shell filled with either silicone gel or saline [a salt-water solution]) placed under the skin.
- The woman's own tissues (skin, muscle, fat) from another part of the body (flap reconstruction).

✓ **Pedicle flap:** In this type of flap reconstruction, the

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tissues remain connected to the area of the body from which they are taken. Specifically, the blood supply to the transplanted tissues is not interrupted.

- ✓ **Free flap:** In this type of flap reconstruction, the tissues are cut off from the original area and grafted to the chest, and a new blood supply is created for the grafted tissues.

- A combination of artificial material and the woman's own tissues.

Timing of breast reconstruction –

Immediate reconstruction- performed at the same time as the mastectomy.

Delayed reconstruction- performed weeks, months, or years after the mastectomy.

Advantages of immediate reconstruction-

- To avoid additional operation and general anesthesia at a later date
- Reconstruction is easier as the tissues are not damaged by scarring
- The breast skin retains the size and shape of the original breast.

Advantage of delayed reconstruction-

- The woman has more time to consider the alternatives.
- After a mastectomy, many women choose a procedure recommended by the expertise (plastic surgeon) and are more confident about the

selection of the type of reconstruction.

- Patients have no risk of a wound healing complication as a result of their reconstruction.
- If radiation therapy needs to be administered after mastectomy, then reconstruction is generally delayed until the skin in the treated area has healed.

Types of Breast reconstruction:

Some types of reconstruction can be completed in a single procedure, whereas other types may require 2 or more operations to complete the reconstructive process.

▪ Reconstruction Using Implants

Implants are designed to recreate the original breast shape and contour. A breast implant is a silicone shell filled with either silicone gel or saline. The implant comes in a variety of shapes and sizes. Silicone-filled implants are filled with either solid silicone gel or liquid silicone gel.

A tissue expander (balloon) is inserted beneath the skin and chest muscle either during the mastectomy procedure or at a later operation. The surgeon periodically injects saline into the balloon to gradually fill it over several weeks or months so that the overlying skin can expand. After the skin over the breast area has stretched enough, the tissue expander is removed in a second operation and a permanent breast implant is inserted. Some expanders are left in place as the final implant. Some women do not require tissue expansion before receiving an

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implant; for these women, the surgeon inserts an implant directly.

The silicone gel-filled breast implants are preferred to saline-filled implants because they provide a more natural feel to the reconstructed breast. However, there have been some concerns about safety if silicone leaks from the implant. If a silicone implant ruptures completely, the implant has to be removed surgically.

Saline-filled implants have an advantage- if saline leaks out, one can easily recognize that a problem has developed for the breast mound and contour is lost. Silicone implant leak and rupture can be more difficult to identify. However, saline-filled implants do not have the natural feel of silicone-filled implants; so they have a less realistic appearance. Saline-filled implants are more likely to wrinkle or leak than silicone implants.

▪ Flap reconstruction

Flap reconstruction is a reconstructive surgery in which a flap of skin and fat with or without muscle is transplanted from a part of the body (for example, the lower abdomen, back, thigh or buttock) to the chest area where it is shaped to form a new breast mound. Like the implant surgery, this operation can be performed at the same time as the mastectomy or it can be delayed.

Advantages of flap reconstruction:

- may eliminate the use of foreign material in the body
- reconstructed breast usually looks and feels more natural

- will last the woman's life span
- when successful, requires minimal touch-up or re-do operations throughout a woman's lifetime

Disadvantages of flap reconstruction:

- Increased complexity and length of the surgery.
- May require a longer recovery period if muscle is included in the reconstruction.
- Additional donor site scars.

Because flap reconstruction involves small blood vessels, women who smoke or have diabetes, vascular diseases or connective tissue diseases are usually advised that they are at higher risks of wound healing complications in both implant and flap-based reconstructions.

Some women may require an implant, in addition to the flap reconstruction for recreating the breast.

If flap reconstruction is the selected option for reconstructive surgery, then the surgeon must decide from which part of the body the required tissues are taken. The tissues for breast reconstruction can be taken from the following areas:

• Back

- ✓ Latissimus Dorsi Myocutaneous Flap: Pedicle rotational flap composed of skin, fat, and muscle.

• Abdomen

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- ✓ Transverse Rectus Abdominus Myocutaneous (TRAM) flap: Pedicle rotational flap composed of skin, fat, and muscle.
- ✓ Free Transverse Rectus Abdominus Myocutaneous (Free TRAM) flap: Micro vascular transplant of abdominal flap composed of skin, fat, and muscle.
- ✓ Deep Inferior Epigastric Perforator (DIEP) flap: Micro vascular transplant of abdominal flap composed only of fat and skin (muscle sparing).
- ✓ Superficial Inferior Epigastric Perforator (SIEP) flap: Micro vascular transplant of abdominal flap composed only of fat and skin (muscle sparing).
- ✓ Tensor fascia lata thigh flap: Micro vascular transplant of thigh flap composed of skin, fat, and muscle.
- ✓ Lateral transverse thigh flap: Micro vascular transplant of thigh flap composed only of fat and skin (muscle sparing).

Latissimus Dorsi Myocutaneous flap:

The latissimus dorsi is a broad muscle on the back. The latissimus dorsi myocutaneous flap reconstruction uses this muscle and the overlying fat and skin from the upper back to reconstruct the breast. The surgeon transplants this muscle and the overlying fat and skin with its blood supply to the front of the chest by tunneling it under the arm to the chest to create a breast mound. An implant is usually placed behind the muscle to provide volume and projection to the breast. This type of reconstruction leaves scars both from where the skin and muscle flap is taken, and on the reconstructed breast. The scar in the front is oval in shape, and the scar on the back is usually horizontal.

The latissimus dorsi myocutaneous flap reconstruction can generally recreate small to medium sized breasts. An implant (inserted during the same operation) is almost always necessary to create a breast of moderate size. Some women with large breasts may need to have a breast uplift procedure (mastopexy) or breast reduction in the other breast at a later date. Although not very common, some women may have weakness in their back, shoulder, or arm after the surgery.

• Buttock

- ✓ Superior Gluteal Artery Perforator (SGAP) flap: Micro vascular transplant of buttock flap composed only of fat and skin (muscle sparing).
- ✓ Inferior Gluteal Artery Perforator or In-the-Crease (IGAP) flap: Micro vascular transplant of buttock flap composed only of fat and skin (muscle sparing).

• Thigh

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Transverse Rectus Abdominus Myocutaneous (TRAM) flap:

The transverse rectus abdominus muscle is located in the lower abdomen between the waist and the pubic bone. In TRAM flap reconstruction, the surgeon transplants the muscle and the overlying fat and skin from the lower half of the abdomen to the chest area to form a breast mound.

There are 2 types of TRAM flaps:

- **Pedicle flap:** This type of reconstruction involves leaving the flap attached to its original blood supply and tunneling it under the skin to the breast area.
- **Free flap:** This type of reconstruction involves cutting the flap of muscle, overlying skin, fat, and blood vessels from its original location and then grafting it to the chest wall using microsurgery to connect the blood vessels and nerves.

While the pedicle TRAM flap requires the transfer of the entire rectus abdominus muscle, the free TRAM flap requires the transfer of a small segment of the lower aspect of the muscle. The effect on the abdomen in both the pedicle flap and the free TRAM flap is a tightening of the lower abdomen ("tummy tuck"). The scar on the abdomen is usually horizontal and just below the bikini line. During the operation, the umbilicus (belly button) is repositioned. After the muscle of the abdominal wall has been removed, a mesh is commonly placed under the skin to strengthen the abdominal wall to prevent

the development of a hernia (protrusion of the intestines).

The TRAM flap is a popular reconstruction option, especially for women with excess abdominal fat or an abdomen that has been stretched out by pregnancy. Also, abdominal tissue feels more like a natural breast to the touch. However, the new breast has little, if any, sensation. The option of the TRAM flap may not be available to women with back problems, women who smoke, women who do not have enough fat in the abdominal area, or women who have many surgical scars on the abdomen, including a prior abdominoplasty or tummy tuck.

Because this type of reconstruction involves the abdominal region, the initial discomfort may be greater and recovery takes longer than other flap reconstructions. Permanent weakness of the abdominal wall usually occurs. Although not very common, the grafted tissues may become infected or the blood supply may be reduced.

Free - Deep Inferior Epigastric Perforator (DIEP) flap:

In this type of flap reconstruction, only skin and fat (not muscle) is completely detached from the abdomen and transplanted to the chest area to form the breast mound. The free DIEP flap requires microsurgery to connect the tiny blood vessels to the deep inferior epigastric artery (blood vessel supplying the abdominal wall). The appearance of the new breast is usually good and there is no risk of hernia because the fascia and muscle from the abdomen is not removed. The operation to reconstruct the breast using the free DIEP flap takes longer than

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a pedicle flap, about 6-8 hours. There is a chance (up to 5%) that the tissue in the area may die if the blood supply to the new breast is not good enough.

Free Superficial Inferior Epigastric Perforator (SIEP) flap:

This type of flap is similar to the free DIEP flap except that the blood vessel used is the superficial inferior epigastric artery.

Gluteal free flap:

In this type of reconstruction, skin and fat are cut off from the buttock region and transplanted to the chest to create the breast mound. This reconstruction also requires microsurgical techniques to reconnect the blood vessels. This flap is technically more difficult to perform, with a significantly higher complication rate than the free TRAM flap; therefore, it should only be performed by experienced microsurgeons specifically trained in gluteal free flap reconstruction. The SGAP procedure has a donor site incision high on the buttock region whereby the IGAP flap donor site incision is hidden in the natural crease where the buttock and upper thigh connect. These flaps are generally performed when a woman lacks adequate abdominal wall fat to perform a TRAM or DIEP/SIEP flap or when the abdomen is scarred from previous surgical procedures.

Tensor Fascia Lata Myocutaneous Free flap:

Skin, fat, and muscle from the lateral area of the thigh are used to reconstruct the breast mound. The major disadvantage of this type of flap reconstruction is the resulting scar at the donor site, which extends down the outer

aspect of the thigh region and cannot be easily hidden. Nevertheless, this is an alternative for some women who cannot undergo other types of flap reconstructions.

Lateral Transverse Thigh Adipocutaneous Free flap:

Only skin and fat from the lateral area of the thigh are used in this type of flap reconstruction. The advantage of this technique over the tensor fascia lata myocutaneous flap is that no muscle is removed from the thigh and, therefore, the donor site contour deformity is relatively smaller. Usually, secondary liposuction for optimal contour of the lateral part of the thigh has to be performed.

Reconstruction of the nipple and areola:

Once the breast mound has been reconstructed, the nipple and areola (pigmented area around the nipple) can be recreated approximately 2-3 months after the first breast reconstructive surgery. By that time, the swelling in the reconstructed breast reduces and the new breast settles into its natural sag. This enables the surgeon to position the nipple accurately, in line with the nipple of the other breast.

It is a relatively simple outpatient procedure. However, some women may decide not to have it performed because they feel that the reconstructed breast alone is sufficient.

A nipple can be created using skin from the following areas:

- inner thigh
- behind the ear

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- reconstructed breast
- labia (the skin folds of the vulva, just outside the vagina)

The skin can be tattooed to match the other nipple and areola. Reconstructed nipple and areola have very little sensation.

Women who decide not to have nipple and areola reconstruction performed can consider the option of nipple prosthesis. Nipple prosthesis can be stuck to the reconstructed breast to give an even appearance. They can be bought ready-made or made to match the other nipple.

Contra-Lateral Balancing Procedures:

Many women require surgery on the breast opposite of their breast cancer to achieve symmetry with their reconstructed breast site. Some women may require enlargement (breast augmentation) of the contra-lateral breast while others may require a breast reduction. Older women with ptotic breasts (that "droop") may require a mastopexy, or breast lift, in order to match the breast after reconstructive surgery. It is very important to discuss breast size prior to the first reconstructive procedure such that the reconstruction site may be designed with a woman's personal preferences guiding the surgical plan.

Surgical Complications:

- Infection.
- Contour or shape irregularities.
- Bleeding or Hematomas.
- Collections of Serum, or Seromas.
- Pain or lack of sensation in a flap donor site or breast reconstruction site.

- Abdominal wall hernias can occur following TRAM or DIEP flaps.
- **Fat necrosis due to poor blood supply.**
- Capsular contracture – recurrent scar tissue formation.
- Implant wrinkling, folding, migration, inappropriate size, or deflation, leakage, rupture.

As with all surgery, complications to the body may occur such as heart attack, stroke, pneumonia, kidney problems, and the formation of blood clots in the legs or lungs, and potentially death. All women should have a complete physical exam and discussion of the development of these possible medical problems with their treating physicians prior to any form of surgery, including breast reconstruction.

References:

1. S. Das, A CONCISE TEXTBOOK OF SURGERY, S.DAS Culcutta.4th 2005
2. R.C.G. Russell, Norman S Williams, Christopher J.K. Bulstrode, BAILEYS AND LOVE SHORT PRACTICE OF SURGERY, Oxford university press New York 24th .2004.
3. Margaret Farquharson and Brendan Moran, Farquharson's textbook of operative general surgery, Edward Arnold, Great Britain 9th2005.
4. Roshan Lall Gupta, Recent Advances in Surgery-10, Jaypee Brothers, New Delhi, 1st.2006.
5. Robert M. Zollinger, Jr.E.Christopher Ellison, Zollinger's Atlas of Surgical Operations, McGraw-Hill Companies, New Delhi, 9th2011.

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A Web based quarterly online published Open Access peer reviewed National E-journal of Ayurved

6. F.Charles Brunicardi, SURGERY, Mcgraw-Hill medical
SCHWARTZ's PRINCIPLE OF publishing division.2004.

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