

Post-mastectomy breast reconstruction... A new life

By Coralee Müller, R.N.

Mastectomy is the surgery most feared by women. It is the surgery many women never thought possible. One out of every 11 women in Canada will be faced with the issue of breast cancer and the excision of the breast, or a mastectomy.

The disturbance of the body image common to the loss of any body part is greatly magnified when that part is the breast. This is due, understandably, to the high emotional feelings associated with this part of the body.

Terrifying experience

Reconstructive surgery occasioned by the loss of a breast can have a great impact on female nurses as they must deal with this threat both as women and as nursing specialists with the responsibility of providing support to patients undergoing surgery.

At one time, I felt that the threat of a mastectomy was one of the most terrifying experiences ever to be faced. However, after having been involved with post-mastectomy breast reconstruction procedures, I now feel that, although the threat remains, reconstruction offers a method to deal with this disturbance of body image.

Many women, if they knew of the possibility of breast reconstruction would probably seek consultation and treatment at an earlier stage, rather than waiting until the disease has progressed to a stage where the prospects of a satisfactory cure are diminished.

With the offer of an acceptable reconstruction prior to a mastectomy, the patient may be much more accepting of the proposed procedure. It is seen now in a less destructive light.

There are many reasons why women are motivated to seek breast reconstruction. Although some are unable to cope with the disfigurement, others have no emotional need for reconstruction. Possibly, too, their anxiety about additional surgery, after the mastectomy itself, is so great that they have a genuine acceptance of loss of their breast. Thus, breast reconstruction is not for all.

Within the limits of the "state of the art," breast reconstruction may be performed with good to excellent results. However, the procedures involved cannot reproduce the patient's former breast - and not without the possibility of complications. The patient must be made aware of this.

Breast reconstruction can be done at the time of the surgical mastectomy, depending on the initial surgery, and if the tumor is less than 2 cm. This is not a common practice, as most plastic and reconstructive surgeons like to wait three months to allow the incised surgery site to settle.

Immediate reconstruction does have its benefits; however, because the patient has never seen the

About the author

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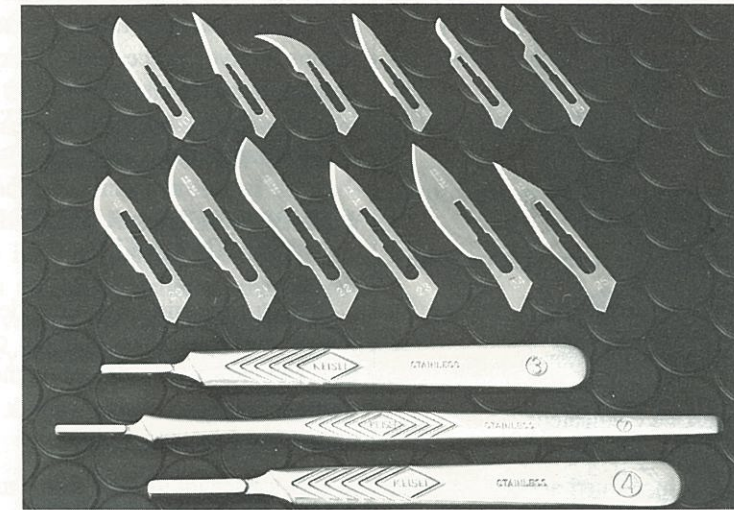


Regina Grey Nuns Hospital School (Pasqua Hospital where she also obtained her certificate in Nursing Unit Administration. Coralee, whose career has primarily been in the operating room, has worked in major hospitals in Regina, Edmonton, Winnipeg, and overseas, in Australia.

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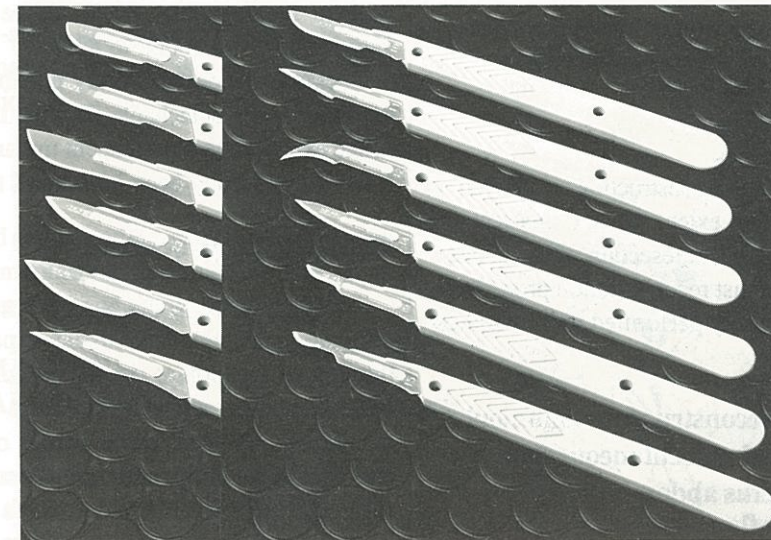
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deformity, she may have difficulty being objective or satisfied with the results.

There has been a marked change in attitude toward breast reconstruction following mastectomy. This has been due to the following reasons:

- Increased technology has allowed earlier detection of minimal lesions;
- Increased use of modified radical mastectomy that preserves the pectoralis major muscle and allows for easier reconstruction;
- Patients are now more aware of and interested in reconstruction;
- There has been vast improvements in reconstructive techniques;
- Apparent lack of interference with post-op evaluation of recurrence and follow-up.

Indications for breast reconstruction:

- Localized disease must be eradicated;
- The mastectomy site must be stable;
- The patient is properly motivated and has realistic expectations of the outcome.

Contraindications for breast reconstruction:

- a large invasive tumor with questionable local eradication or, extensive chest wall or axillary metastases;
- extensive disease involving other body systems;
- lack of motivation on the part of the patient.

Types of procedures

The type of breast reconstruction employed is directly related to the extent of the mastectomy incision and type of surgical resection of the breast.

There are several breast reconstruction procedures. The three most commonly performed will be addressed in this submission:

- (1) Submuscular reconstructive mammoplasty
- (2) Latissimus dorsi myocutaneous flap
- (3) Transverse rectus abdominus myocutaneous flap

If there is good quality skin and tissue at the mastectomy site and the pectoralis major muscle is present, the procedure of choice is submuscular reconstructive mammoplasty. This procedure involves the use of a temporary tissue expander and second stage replacement with a permanent mammary pros-

thesis. Recently marketed breast implants, however, may allow for one-stage procedures.

If the skin and tissue overlaying the mastectomy defect is of poor quality or the pectoralis major muscle is missing, tissue must be brought in.

The procedure of choice is either a latissimus dorsi myocutaneous flap or a transverse rectus abdominus myocutaneous flap (TRAM). These are single stage reconstructive procedures which use either the latissimus dorsi muscle or the rectus abdominus muscle with the required amount of skin necessary to correct for the mastectomy defect.

1. SUBMUSCULAR RECONSTRUCTIVE MAMMOPLASTY

Tissue expansion was first described in 1957 but it was not until 1976 that the concept was put to use. The procedure is based on the inherent ability of tissue to increase in size when it is stimulated by an underlying expansile force.

Types of tissue expanders

1. Radovan (Heyer Schulte) silastic bag with a remote fill valve.
2. Lapin (Dow Corning) silastic bag with the fill valve within the unit.
3. Customized tissue expanders designed to meet specific requirements. (Note, tissue expanders can vary in size from 200ml to 800ml).
4. Becker expander/mammary prosthesis. This tissue expander has a detachable fill tube that converts the tissue expander to a permanent mammary prosthesis. It has only recently been introduced to the market.

The surgical procedure

The patient is in the supine position during the surgical procedure. The tissue expander is placed through an incision at the lateral tail of the original oblique scar or at the level of the proposed infra-mammary line. The lateral border of the pectoralis major muscle is elevated and a submuscular and subfascial pocket is developed (See illustrations on the following pages).

The tissue expander is inserted and filled to tissue tolerance. The incision is closed.

Subsequent fills, to tissue and patient tolerance, are done in the office weekly. The tissue is expanded to the required size and overinflated 20%. A 4-6 week time span is then allowed for scar and capsule

activity to subside and to gain as much stretch as possible. The patient then returns to the hospital for the second stage reconstruction.

The incision for the second stage reconstruction is made at the midportion of the original scar, or at the proposed infra-mammary line. The tissue expander is removed and the permanent prosthesis is placed in the created space. Suction drains are used and the incision is closed.

Post-operatively the breast is supported by a non-binding brassiere. The prosthesis should be moved daily starting about the fourth day post-operatively.

If a Becker expander/mammary prosthesis is used, the 2nd stage reconstruction is eliminated. After the implant is filled to its final volume the remote fill tube is detached in the office under a local anaesthetic, thereby converting the tissue expander to a permanent mammary prosthesis.

Advantages

1. A simple procedure with few complications.
2. There are no skin colour, texture and hair bearing quality discrepancies as local tissue is used.
3. Transfer of distant tissue is unnecessary, therefore an additional operative site is not required.

Disadvantages

It is a 2-stage procedure, unless a Becker expander/mammary prosthesis is used (which is a one stage operation).

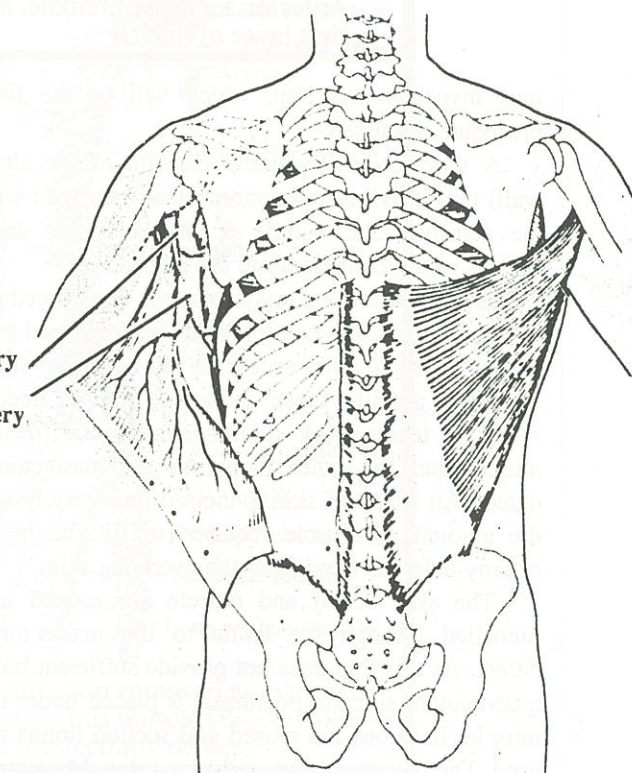
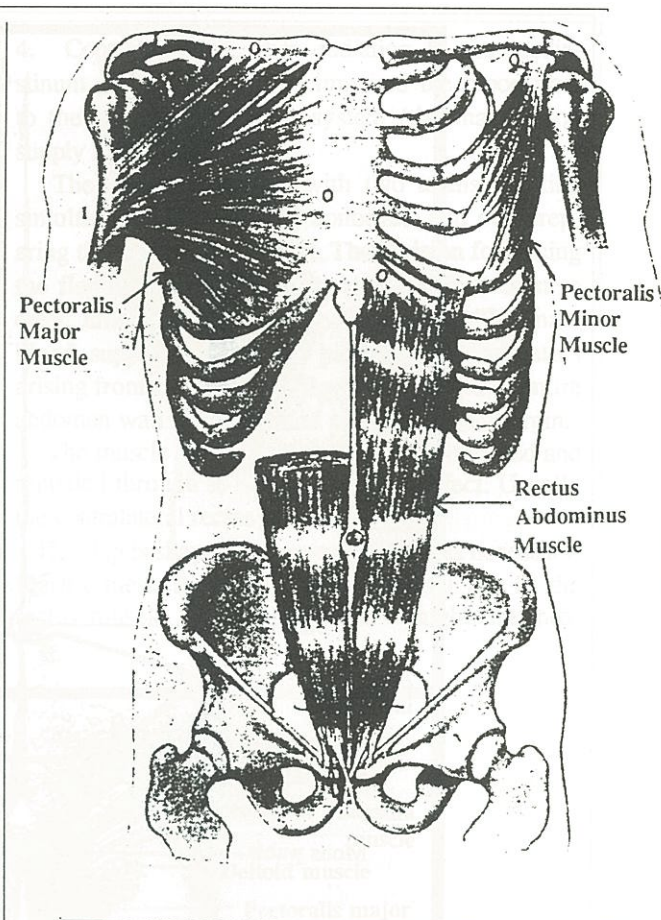
Complications

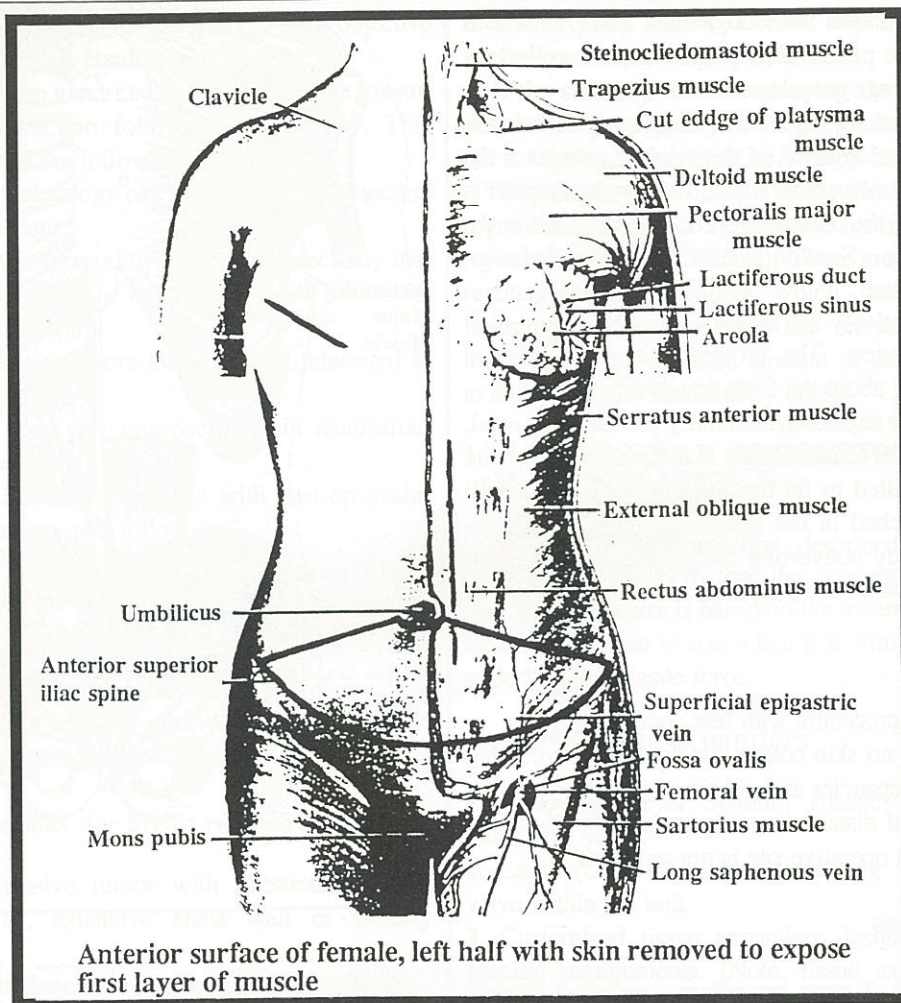
Implant related complications with submuscular reconstructive mamoplasty include capsule formation, malposition of implant, and extrusion of implant

2. LATISSIMUS DORSI MYOCUTANEOUS FLAP

This procedure was first described in 1896 but was abandoned for the most part until recently. The latissimus dorsi muscle arises from the midline back at the lower 6 thoracic vertebrae to the posterior crest of the ilium and inserts in the humerus.

The vascular supply is the thoracodorsal artery arising from the subscapula artery (See adjacent illustration). This flap is used when abdominal scars contraindicate the use of a transverse rectus abdom-





Anterior surface of female, left half with skin removed to expose first layer of muscle

inus myocutaneous flap, which will be the final procedure discussed.

A thoracotomy (surgical incision of the chest wall) or a previous mastectomy that interfered with the neurovascular bundle of the latissimus dorsi muscle would contraindicate the procedure.

The latissimus dorsi myocutaneous flap procedure involves the patient being prepped and draped in a lateral position with access to the anterior chest wall, back and iliac crest; the arm is draped free.

Two teams work simultaneously, one freeing muscle and the other preparing the mastectomy defect. An island of skin is incised transversely and the amount of muscle required to fill the mastectomy defect is freed from the overlying skin.

The skin island and muscle are rotated and tunnelled through the axilla to the mastectomy defect. As this flap does not provide sufficient bulk, a permanent silicone prosthesis is placed under the muscle. Incisions are closed and suction drains are used. The patient can be up the next day. Movement

of the arm is not restricted. However, the patient is instructed not to lift or stretch the arm.

Advantages

1. The procedure provides a large composite flap of skin, fat and muscle which is readily available with an excellent blood supply.
2. The latissimus dorsi muscle is expendable with very little loss of function.

Disadvantages

1. The procedure results in additional scarring of the back. This scar, however, is usually inside the posterior axillary fold and, thus beneath the brassiere.
2. The skin colour will be different.

Complications

1. There can be damage to the axillary contents

(brachial artery, vein or brachial plexus) which results during the dissection of the pedicle

2. Possible palsy of the long thoracic nerve with resulting winging of the scapula.

3. TRANSVERSE RECTUS ABDOMINUS MYOCUTANEOUS FLAP

This procedure was initially described in 1982. It is used when the latissimus dorsi muscle is denervated. It is the procedure of choice when the use of distant tissue is necessary.

Contraindications

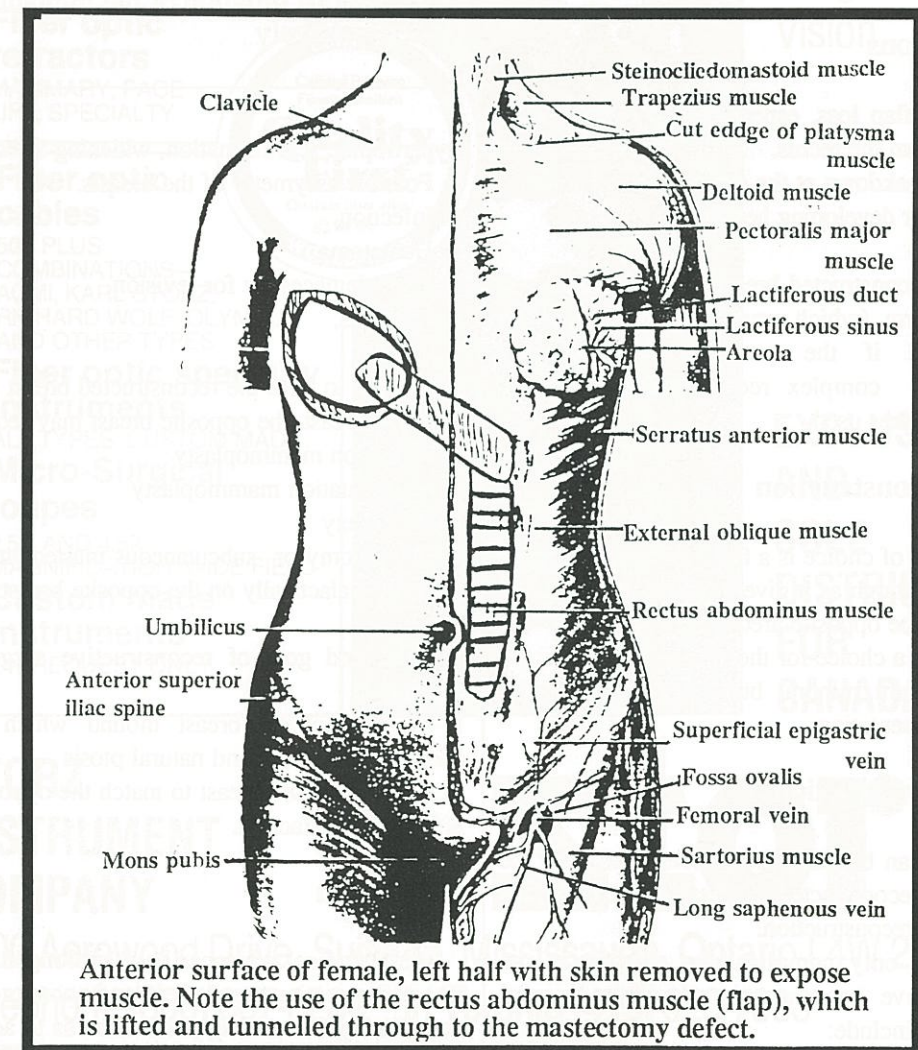
1. Contraindicated with obese patients.
2. Contraindicated when previous abdominal or thoracic surgery interfered with blood supply to rectus.
3. Contraindicated if further pregnancies planned.

4. Contraindicated when radiation to the mediastinum or base of the flap impaired the blood flow to the superior epigastric system (the main blood supply to the flap).

The patient is supine with two teams working simultaneously, one at the donor site and one preparing the mastectomy defect. The incision for raising the flap is from the superior anterior iliac crest to crest, umbilicus and supra pubic region. The main blood supply is from the perimbilical perforators arising from the superior epigastric artery. The entire abdomen wall is undermined past the costal margin.

The muscle pedicle with the skin flap is lifted and tunneled through to the mastectomy defect. Usually the contralateral rectus muscle is used.

The flap is shaped and de-epithelized as necessary. Marlex mesh is used to fill the defect left in the rectus muscle. The umbilicus is brought out thro-



Anterior surface of female, left half with skin removed to expose muscle. Note the use of the rectus abdominus muscle (flap), which is lifted and tunnelled through to the mastectomy defect.

ugh a new opening. Incisions are closed, and suction drains used. The patient remains on bed rest for one day post-op and restricted activities for two weeks.

Advantages

1. There is no need for mammary prosthesis as a large amount of tissue and fat is available.
2. The abdominal skin gives a more favourable colour match.
3. The donor site is less conspicuous than that of a latissimus dorsi flap.
4. The resulting abdominoplasty is an added benefit.

Disadvantages

1. It is a more difficult procedure with a higher rate of complications.
2. Procedure can result in abdominal weakness.

Complications

1. Potential flap loss, especially the distal portion of the skin from the rectus.
2. Wound breakdown at the abdominal incision.
3. Potential for developing hernia.

After the reconstructed breast has had a chance to drape and form (which usually takes four to six months) and if the patient still desires a nipple/areolar complex reconstitution, there are several techniques used.

Areolar reconstruction

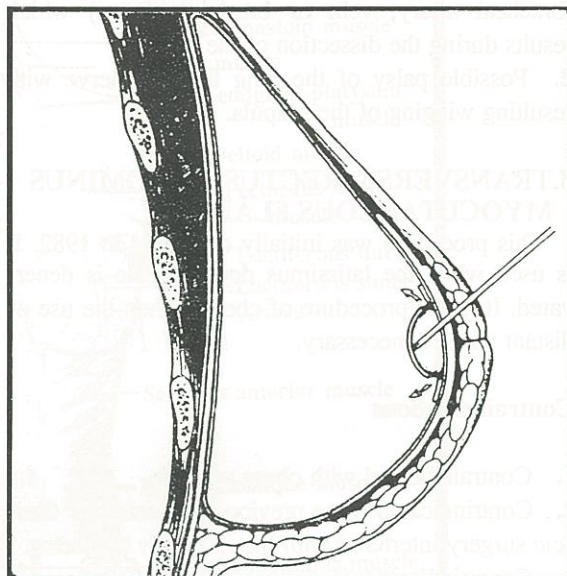
- The method of choice is a full thickness skin graft from the inner thigh as it gives best colour tones.
- Sharing of the opposite areolar complex.
- Tattooing is a choice for the future.
- Use of labium minora, but can be problematic with dark pigmentation.

Nipple reconstruction

- The nipple can be made from local flaps from the area of the reconstructed breast chosen for the nipple/areolar reconstruction.

Thus far, only complications specific to the procedures have been mentioned. Some general complications include:

1. Scar related, such as contractures; keloid and



Above is an artist's representation of the percutaneous inflation of the implant postoperatively

- hypertrophic scar formation, widening of scars.
2. Possible assymetry of the breasts.
3. Infection.
4. Hematoma.
5. Possible necessity for revision.
6. Flap loss.

In order to have the reconstructed breast match the opposite breast, the opposite breast may require:

- Reduction mammoplasty
- Augmentation mammoplasty
- Mastopexy
- Mastectomy or subcutaneous mastectomy performed prophylactically on the opposite breast.

The end goal of reconstructive surgery is to provide:

1. A symmetrical breast mound which contains adequate projection and natural ptosis
2. A reconstructed breast to match the opposite one
3. Patient satisfaction.

Conclusion

Technological advances have prolonged survival. The cancer patient needs help and encouragement in normalizing their living patterns so as to achieve an optimal level of physical, psychological and social

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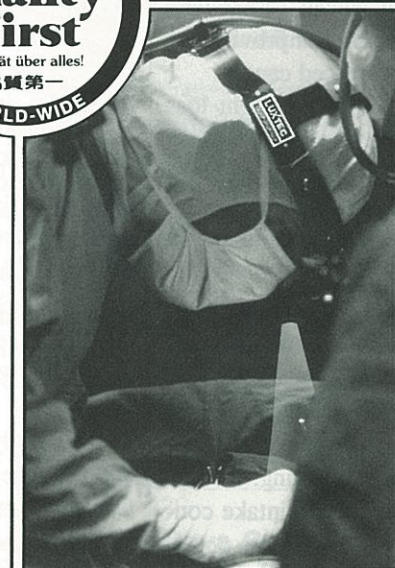
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functions. It is my hope that we, as nurses, now will be better able to provide an intervention program of informational support to improve patient adjustment to mastectomy. ■

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Study reveals that new hormonal drug provides unexpected weight gain to cancer patients

A study published in the March 6, 1987 issue of the *Journal of the American Medical Association (JAMA)*, reports the results of using the hormonal drug megestrol acetate (Magace™) to treat advanced breast cancer. The results of the study have generated interest in further study among cancer researchers dedicated to reversing weight loss and improving the quality of life of patients with advanced cancer.

For many cancer patients, dramatic weight loss brought on by the disease or its treatment can mean more than a loss of self-image - it can severely inhibit the fight for survival.

Anorexia and cachexia

Weight loss is one of the most visible and debilitating side effects of cancer. Patients often lose their appetites (anorexia) due to changes in their senses of taste and smell. They experience a feeling of being full and have less energy for eating.

As the disease progresses and caloric intake continues on its downward spiral, undernutrition accelerates to the point of cachexia or loss of tissue mass. The result is further malnutrition and reduced energy to cope with treatment, or to fight off the disease and its complications.

"This wasting of the cancer patient to skin and bones has a profound impact on his or her quality of life," says U.C.L.A. oncologist Simon Tchekmedyian, who is currently studying anorexia and cachexia in patients with advanced cancer.

"Not only do we have to deal with the psychological side-effects of a loss of body image, but

these eating problems can be very stressful for both the patient and the family," he said. "Imagine sitting at the table and not being able to eat, of actually being nauseated by the smell of food."

When patients deteriorate to the point of cachexia, they become debilitated and often die, notes Dr. Tchekmedyian. In fact, many advanced cancer patients die of malnutrition rather than the disease itself. So it's important that cancer patients eat nutritiously and maintain their weight to give themselves the best possible chance of coping with both the disease and the treatment. Many of the traditionally used methods to control this type of weight loss (intravenous feeding of nutritional supplements) have met with little success.

Appetite enhancement

The study was conducted by Dr. Tchekmedyian and Dr. Joseph Aisner of the University of Maryland Cancer Centre to determine whether high doses of megastrol acetate would effectively treat patients with stage IV breast cancer (cancer that has spread from the breast to the bones, lungs or liver). The results of the study revealed weight gain and appetite enhancement in virtually all patients observed.

According to Dr. Tchekmedyian, 27 of the 28 patients treated gained weight following six weeks on high doses of megastrol acetate. Prior to the treatment, 13 of the 28 were severely underweight and had no appetite. Study team evaluators confirm that the weight gain consisted of true body mass, not edema (bloating or swelling of the tissues).

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