

Perspectives

Recovery Strategies from the OR to Home

In This Issue

Breast cancer is the most commonly diagnosed cancer among women in the United States and worldwide (excluding skin cancer). In 2003, it is estimated that 258,600 new cases of breast cancer will be diagnosed among women in the United States. Breast conservation, e.g., lumpectomy and ionizing irradiation, has become a major treatment for women with earlier stage breast cancer. This approach however requires a prolonged and time-consuming six-week course of external beam radiotherapy. To address the challenge of a lengthy course of radiotherapy, a technique called brachytherapy was developed to accelerate treatment. Ms. Brandt has been involved with this procedure since its inception and describes in her article the technique and post-procedural care.

Sixty-one percent of Americans are overweight and 25% are considered obese, which is defined as having a body mass index greater than 40. Excess body weight poses numerous nursing challenges. Equipment, attitudes, pain management, and associated comorbidities such as diabetes, hypertension, soft-tissue infection, impaired circulation, etc., are just a few of these challenges. In her article Dr. Gallagher, an expert in obesity and ethics, discusses the specialized preoperative, intraoperative, and postoperative care for the obese patient.

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Brachytherapy for Patients with Breast Cancer

By K. Brandt, RN, MBA

In the past 20 years, breast cancer has reached epidemic proportions in North America. One in eight women will develop breast cancer in their lifetime. Clinical research has attempted to keep pace with this too common disease.

Breast conservation, e.g., lumpectomy and ionizing irradiation, has become a major treatment for women with stage I and II breast cancer. Seven prospective studies have shown the efficacy of breast conservation, relative to conventional mastectomy, with regard to long-term, disease-free survival.

Clearly, the superior cosmetic outcome of breast conservation affords patients the potential for reduced emotional and psychological trauma. Unfortunately, this approach requires a prolonged, six-week course of external beam radiotherapy. It often creates geographical and time obstacles, which are stressful and disruptive to daily life.

To address the challenge of a lengthy course of radiotherapy, an innovative approach to sterilization of the lumpectomy bed and residual cancer cells has evolved. This technique, called brachytherapy, accelerates treatment, which lasts only four to five days. During treatment, a radioactive source, known as iridium-192, is deposited into multiple catheters or a MammoSite® balloon catheter, which is surgically placed in the patient's resected lumpectomy cavity. This method avoids radiation delivery to the heart, lung, ribs, and lymph nodes.

Brachytherapy, which is now being performed at community and academic centers, is increasingly popular among patients and physicians. Its proliferation

has prompted a phase III National Surgical Adjuvant Breast and Bowel Project (NSABP) study that will compare brachytherapy to external beam radiotherapy, using various outcome measures. This trial, which is anticipated to involve several thousand patients, will begin to accrue in the next two years.

A 300-patient, prospective, phase II trial, which will compare results to an historical control, will open at the University of Wisconsin Comprehensive Cancer Center in the next few months.

At this juncture, brachytherapy is appropriate only for selected patients, who are not at risk for multifocal disease. The procedure is labor-intensive, skill dependent, and complex, involving a multifaceted team that includes radiation oncology, radiation physics, nursing, surgical oncology, and radiology.

In this article, the special considerations and issues confronting the nursing staff of a brachytherapy team are reviewed.

What is brachytherapy?

Brachytherapy is a local, targeted method of treating cancer by placing radioactive seed(s) directly at the cancer site and in surrounding tissue. It is standard treatment for many cancers, e.g., cancers of the lung, prostate, oral cavity, cervix, uterus, and vagina. The radiation dose is delivered at a high rate over a short period, using a machine known as a high dose afterloader (HDA). In doing so, less normal tissue is affected by radiation. The delivery of radiation is painless.

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Postoperative Care of the Bariatric Patient

By Susan Gallagher, RN, PhD, CNS, CWOCA

The challenge of surgery in the overweight patient lies in the special care and knowledge that are required for successful preoperative, intraoperative, and postoperative management. Some authors believe that, from the onset, the obese patient is at a surgical disadvantage, because differential diagnosis is difficult, anesthesia is more troublesome, and technical procedures are more complicated.¹

Obesity is associated with numerous coexisting conditions, such as diabetes, hypertension, soft-tissue infection, some cancers, and impaired circulation, which could interfere with the patient's general health. Many surgeons are reluctant to perform surgery on obese patients because of the increase in surgery-related complications. Many hospitals report concerns because of inadequate equipment and personnel to accommodate the needs of obese patients. It is true that obesity could be associated with more complications; however, recent advances in surgery, particularly in obese patients, have helped to reduce some of these risks.¹

Clinical care of the morbidly obese patient requires an interdisciplinary approach. The entire healthcare team must be diligent in caring for the morbidly obese, surgical patient. Being aware of possible complications and corresponding interventions is necessary to prevent potential hazards to both patient and caregivers.

This article examines the meaning of obesity, demographics, and factors that place this patient at particular risk during surgery. Preoperative, intraoperative, and postoperative care are discussed. Home-care needs are reviewed, as the patient moves from the hospital to home-care setting.

Understanding obesity

The word "obesity" itself holds a negative connotation. Despite this fact, obesity refers to a special condition that is recognized by the National Institutes of Health (NIH). Obesity, according to the NIH, is a diagnostic category that represents a complex and multifactorial disease.² Many obese Americans neither choose to be overweight nor choose to experience widespread prejudice and dis-

crimination.³ They certainly should not expect such behavior when they are seeking health care. Clinicians need to ensure a safe haven from obesity-related prejudice and discrimination.⁴

Prejudice and discrimination are widespread against the obese person. This prejudice is observed at a very young age. For example, 6-year-old children have described silhouettes of obese children as lazy, stupid, and ugly. According to this study, prejudice toward the obese child occurs regardless of race or socioeconomic status.⁵ Children are not the only ones to hold a prejudice against the overweight person; healthcare clinicians often show this bias.⁶ It is even observed among obese persons themselves.⁷

Healthcare clinicians best serve their patients when they recognize obesity as a chronic condition. Historically, obesity has been perceived as a problem of self-discipline. However, recent discoveries suggest that this is far from the truth. It is true that weight gain occurs when food intake exceeds energy output, i.e., activity, but the real mystery behind a balanced body weight depends on a number of other factors. Genetics, gender, physiology, biochemistry, and neuroscience as well as

cultural, environmental, and psychosocial factors influence weight and its regulation.⁸

Demographics

Over 50% of Americans are overweight, and 10% to 15% are considered obese.⁹ Americans spend close to \$33 billion annually in attempts to control or lose weight, while \$100 billion are spent on obesity-related health problems. Despite efforts at weight loss, Americans continue to gain weight. Some argue that obesity is reaching epidemic proportions. In the early 1960s, only a quarter of Americans were overweight. Today, over half of all adults and 25% of children are overweight.

Obesity has a physical, emotional, and economic impact on our patients. Obesity is a factor in five of the 10 leading causes of death.¹⁰ It is considered the second most common cause of preventable deaths in the USA.¹¹ In addition to the physiologic costs, some authors argue that obesity is associated with emotional conditions, such as depression, altered self-esteem, and social isolation.¹² On the other hand, others argue that it is society's response to the obese person that leads to these emotional conditions.¹³

These factors, among others, influence healthcare delivery across practice settings.

Preoperative assessment and preparation

The preoperative period for the morbidly obese patient is a time of physical and emotional preparation. The nurse, as a member of the interdisciplinary healthcare team, usually spends the most time with the patient and is an important player in the patient's preoperative assessment and preparation. Like all patients, the very overweight patient needs comprehensive preoperative instruction, including breathing and coughing exercises and appropriate leg exercises.¹⁴ Breathing and coughing exercises are especially important to review, as these exercises are useful in preventing atelectasis and congestion that can result from shallow respirations as a result of incisional pain, depressive analgesia, inactivity, and obesity itself.¹⁵ Demonstrations of deep breathing and coughing exercises should include splinting the surgical area and use of the incentive spirometer. The application of abdominal binders can also increase deep breathing. There are velcro-type binder (Dale Medical) available in extra long sizes of up to 75" in length and up to 15" in width.

Postoperatively, leg exercises are important to maintain proper circula-



Fig.1 Dale Abdominal Binder (Dale Medical Products)

tion. These exercises prevent the stasis of blood, which could lead to deep-vein thrombosis. Teaching includes the demonstration of calf-pumping.¹⁵

Successful preoperative preparation includes the patient's family or other support personnel. An atmosphere of understanding, cooperation, and trust ensures a smoother postoperative course.

Intraoperative care

Although intraoperative care is a highly specialized process that is far too detailed to cover here, it is important to recognize some of the more common obesity-specific intraoperative activities and their rationale. It is also important to recognize some safety-oriented activities in the patient's intraoperative experience.

Most surgical procedures require two nurses, e.g., a scrub nurse and circulating nurse. In caring for obese patients, some hospitals add a third nurse, especially at the beginning of surgery. The third nurse may be necessary for positioning. A task as simple as placing a urinary catheter can be technically difficult and, as it is an unnecessary embarrassment to the patient, a nurse usually places the catheter once the patient has been properly sedated or anesthetized.¹⁴

Urinary catheters are used for several reasons. Assisting a female patient onto a bed pan postoperatively can be difficult for caregivers and uncomfortable for the patient. In addition, patients receiving an epidural catheter for pain control may require a urinary catheter because of associated urinary retention. Securing the foley catheter high on the patient's thigh with a foley catheter holder will significantly reduce the risk of tube dislodgement and thereby reduce the risk of UTI infection (Figure 2).

Another intervention of concern is the surgical scrub (preparation of the skin surface prior to surgery). The nurse must ensure that all areas are clean and painted vigorously. This can be especially difficult in the presence of deep-skin folds. A third nurse can help the circulating nurse to achieve this task.

Once the surgery is over, warm sheets and a clean gown are provided for the patient. It is best to plan ahead by having larger gowns available in the operating room, eliminating any last-minute embarrassment. Extra personnel may be required to place the patient onto a gurney or oversized bed for transfer to the hospital room, once recovery is complete. Recovery staff need to be notified that they will be receiving an obese patient to allow for any necessary preplanning. This step helps to prevent last-minute scrambling to find the tools that are essential for

postoperative assessment. Standard-sized equipment, such as blood pressure cuffs, may be insufficient to accomplish simple assessment.

The patient may be discharged from the recovery room to either the intensive care unit or a general medical-surgery unit, depending on medical assessment or hospital policy.

Postoperative care

Although the patient is usually awake and alert shortly after surgery, extra personnel may be required for the transfer to the appropriate postoperative unit. Routine monitoring of vital signs and physiologic progress that requires documentation includes blood pressure, pulse, quality and number of respirations per minute, temperature, coughing, and deep breathing.

Patients seem to breathe more easily when the bed is at 30° (semi-Fowler position), as this angle reduces the weight of abdominal adipose tissue that presses against the diaphragm.¹⁶ The patient may need encouragement to perform leg exercises and breathing and coughing exercises. Providing the patient with an abdominal binder (Dale Medical) can encourage deep breathing and coughing as well as post-operative mobility (Figure 1).⁶ Early activity is encouraged, as it decreases the chances of immobility-related complications. In the acute setting, patients can experience complications related to immobility and physical dependence. Some patients will fail to progress postoperatively either because of surgical complications or a critical condition.

Clinicians need to be familiar with common obesity-related complications and modify care plans and clinical interventions to address or prevent them. For example, atypical pressure ulcers and respiratory problems are two immobility-related conditions that could prolong the postoperative course.¹⁷

Obese patients often present with atypical pressure ulcers. Pressure within skin folds can be sufficient to cause skin breakdown. Tubes and catheters burrow into skin folds, which can further erode the skin surface. Pressure from side rails and arm rests not designed to accommodate an obese person can cause pressure ulcers on the patient's hips. This atypical skin breakdown can be minimized by us-



Fig. 2 Foley Catheter Holder (Dale Medical Products)

ing properly sized equipment. The patient needs to be repositioned at least every two hours, as do tubes and catheters. Commercially available securing devices that can be opened and closed several times, and remain in place, will reduce the likelihood of skin necrosis. Tubes should be placed so that the patient does not rest on them. Tube/catheter holders may be helpful in this step.

Wound healing can be problematic in some obese patients. Wounds are prone to dehiscence. In addition, blood supply to fatty tissues may be insufficient to provide an adequate amount of oxygen and nutrients, which can interfere with wound healing. A delay in wound healing may occur if the patient has a diet that lacks essential vitamins and nutrients. Wound healing can also be delayed if the wound is within a skin fold, where excess moisture and bacteria can accumulate. Furthermore, excess body fat increases tension at wound edges.⁴ To reduce the occurrence of abdominal wound separation, some clinicians use a surgical binder to support the area. The binder will need to be large enough to comfortably fit the patient. For example, the Dale Abdominal Binder can accommodate waist sizes of up to 94 inches.

Morbidly obese patients tend to have pulmonary problems, particularly obesity hypoventilation syndrome (OHS) and sleep apnea. OHA is an acute respiratory condition in which the weight of fatty tissue on the rib cage and chest prevents the chest wall from expanding fully. Because patients are unable to breathe in and out fully, ventilatory insufficiency can occur.¹⁷

Sleep apnea occurs when the patient sleeps in the supine position. The weight of excess fatty tissue in the neck causes the throat to narrow, severely restricting or even cutting off breathing

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Brachytherapy for Patients with Breast Cancer – continued from page 1

Breast brachytherapy is traditionally delivered via interstitial flexible catheters. They are incorporated into the lumpectomy cavity with a 2-cm margin circumferentially. Two techniques are used: in prone position with mammographic guidance with the use of a template; or, in supine position with ultrasound guidance with or without the use of a template. The most common technique, which will be described here, is prone stereotactic catheter placement.

Patient selection

Selection criteria for patients to receive brachytherapy must be well defined. Generally, the treating team avoids patients who have residual disease, not encompassed by the extent of the treatment field. This concern extends to patients who have or are likely to have multicentric disease. Typical selection criteria are presented in Table 1. If these criteria were widely used, over 70,000 patients per year in the United States would be candidates for brachytherapy.

Patient education and preparation

The physician holds a formal consultation with the prospective patient. At this time, the operative report, pathology reports (biopsy and lumpectomy), mammograms, and other breast images that might have been obtained are reviewed to determine the appropriateness of brachytherapy. Treatment options are presented, giving both physician and patient the opportunity to review alternatives, potential side effects, and complications – common and rare. This discussion reviews the possibility of:

- pneumothorax
- hematoma

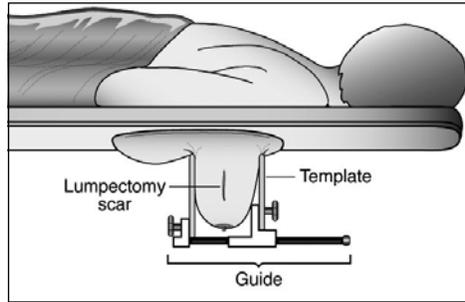


Figure 1: The figure represents a patient in prone position on a stereotactic core biopsy table.

- breast discomfort
- infection
- fat necrosis: an inflammatory reaction incited by local destruction of fat cells
- fibrosis or scarring
- pock marks: tiny white or red spots where the catheters penetrate the skin under the buttons.

If the procedure is appropriate and the patient agrees to it, the physician obtains informed consent.

The nurse’s role

Patient education is an important element of nursing care. Its significance cannot be doubted in breast brachytherapy. Patients should receive detailed instructions, both written and verbal, about catheter placement, treatment course, skin care, and follow-up recommendations.

Nurses should review the patient’s medical history and medications, including herbals. Patients are recommended to discontinue blood-thinning medications, such as aspirin, Coumadin, and nonsteroidal anti-inflammatory drugs (NSAIDs) such as ibuprofen (Advil®), about one week before catheter placement. Concomitant use of some herbal preparations may promote bleeding and interact with the

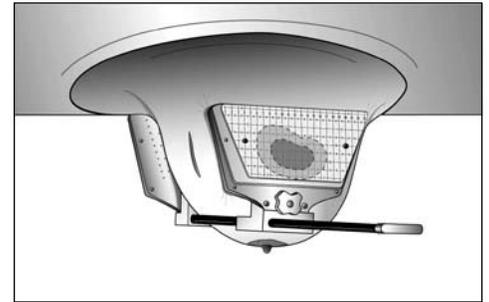


Figure 2: The figure illustrates a breast protruding through a stereotactic core biopsy table with a template secured. The inner shaded area overlapping the template relates to the resection cavity. The outer shaded area represents a planned 2-cm margin around the resection cavity.

local anesthetic or medications prescribed for the procedure.

Medications

The patient receives prescriptions, with written and verbal instructions, for the following medications:

- EMLA cream, which is applied 1 to 2 hours before the procedure to the entire breast. The patient covers the area with Tegaderm or Saran wrap.
- Cox-2 inhibitor, such as Vioxx® or Celebrex™ (newer cox-2 inhibitors are more specific to the inflammatory response)
- diazepam (Valium®)
- narcotic pain medication, such as Vicodin™ or Percocet®

Each medication is taken about an hour before catheter placement at a breast-imaging facility.

Typical catheter placement

A unilateral mammogram is performed first to assess the lumpectomy cavity and to locate any residual microcalcifications if applicable. Secondly, under ultrasound guidance, the lumpectomy cavity is imaged and up to 5 cc of contrast is instilled into the lumpectomy cavity. A second mammogram is then obtained. This will highlight and define the cavity.

The patient is then escorted to the stereotactic procedure room. The patient is assisted in a prone position on a stereotactic core biopsy table. The placement of the catheters is done in a sterile environment. A template is secured to the breast (Figure 1). The patient maintains this position for about two hours.

Once the template is placed, another mammogram is performed on the stereotactic table. Dye in the lumpectomy cavity defines its location, relative to the template. The coordinates of pre-drilled holes in the template are chosen for accurate needle insertion. These holes encompass the surgical cavity plus 2 cm in all dimensions (Figure 2).

Table 1: Brachytherapy Selection Criteria for Unifocal Breast Cancer

Diagnosis of:	<ul style="list-style-type: none"> i) Invasive ductal, medullary, papillary, colloid (mucinous) and tubular histologies ii) Ductal carcinoma in situ (possibly excluding large high grade lesions)
Tumor stage:	is, T1, T2 if lesion is less than or equal to 3 cm
Nodal stage:	<p>N0 (or negative sentinel node with or without further dissection is acceptable) or N1 (1-3 nodes positive and no extracapsular extension)</p> <p>Clearly a visible target as defined by ultrasound, mammography, or surgical clips</p>

A diluted mixture of 2% lidocaine with epinephrine and sodium bicarbonate is injected at each selected, respective coordinate. The brachytherapy needle is placed into the breast through the template (Figure 3).

After all needles are inserted, a plastic brachytherapy catheter is slid through each needle. The needles are then removed and discarded. A hemispherical catheter button secures the catheters (Figure 4).

An antibiotic ointment (bacitracin) is applied around each catheter button. Sterile ABD dressings are applied, then secured with a support bra.

The number of implanted catheters per patient varies. This typically ranges from 19 to 30. The patient returns the following day for a three-dimensional (3-D), treatment-planning CT scan. Three-dimensional, CT-based planning assures adequate radiation-dose coverage of the target volume. The radiation dose can be maximized in the area that needs treatment but restricted from other areas.

The nursing staff performs all skin care. Patients are asked not to remove or change the dressings, while the catheters are in place. It is imperative to keep the dressings dry; patients are asked to bathe rather than shower. They are asked to monitor their temperature three times daily and report if it nears 100° F. The application of a post-surgical bra (Dale Medical Products), for example, will offer the patient soft support, hold dressings in place, and allow the catheters to remain safely “tucked away”.

Antibiotics are not prescribed prophylactically. If an infection is detected or suspected, cephalexin 500 mg three times daily for 7 to 10 days is typically prescribed. Sensitivity to pain varies among patients. Discomfort is often present within the first 24 hours; however, it is well managed with prescription Vioxx and narcotic pain medications, as needed.

Radiation treatment is delivered on an outpatient basis in the radiotherapy department. The patient is scheduled to have between 8 and 10 fractions or treatments.

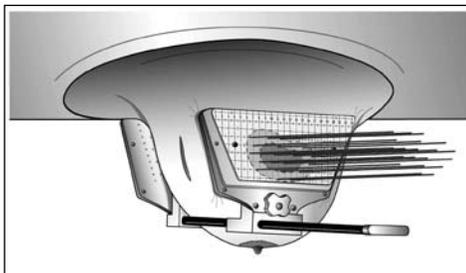


Figure 3: This figure illustrates the same patient setup as figure 2 after the insertion of brachytherapy needles. Prior to insertion of these needles each pre-drilled coordinate is anesthetized.

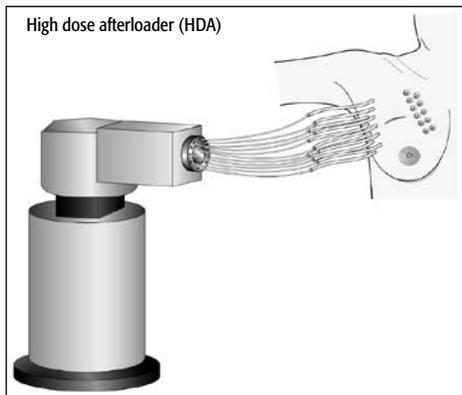


Figure 5: This figure illustrates patient treatment. Cables or transfer tubes from the high-dose afterloader (HDA) attached to each catheter. By remote control the source (Iridium-192) travels through each one at a time.

The 4 - or 8-day treatment regimen delivers 4 Gy per treatment for a total dose of 32 Gy. The 5 day treatment regimen delivers 3.4 Gy per treatment for a total dose of 34 Gy. Usually, two treatments are administered daily with an interval of least 6 hours – the minimum amount of time for normal cell repair. After the treatment neither the patient nor the catheters are radioactive. Each treatment lasts about an hour, including transfer-cable hook-ups, treatment, and skin care.

Each catheter is connected to the high-dose afterloader (HDA) by a flexible cable. A member of the physics staff typically performs the cable hook-up. During treatment, the radioactive source enters each catheter one at a time and stays at various points within the catheter, based on the treatment plan. The patient is alone while the treatment is given however the radiotherapy staff are monitoring the patient outside the room. The actual treatment time varies depending on the number of catheters and source strength. On average the treatment lasts about 12 to 15 minutes. The patient feels no discomfort (Figure 5)

Skin care and assessment after treatments includes visual inspection for signs of infection. The nurse cleanses each catheter button with a diluted peroxide solution, then applies the antibiotic ointment. The nurse secures the sterile

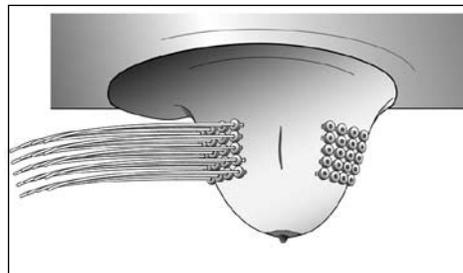


Figure 4: This figure shows each needle replaced with a plastic brachytherapy catheter.



Post-surgical Bra (Dale Medical Products)

dressings and replaces the support bra. A support bra with a front Velcro closure will provide the clinician with easy access to the dressing and catheters. If a patient develops a sensitivity to bacitracin, other topical antibiotics, such as mupirocin (Bactroban®), may be prescribed. Pruritus can be managed with topical hydrocortisone, Benadryl® (topical or oral), or ice packs. Faint erythema is often noticeable under the buttons, as the treatment course nears completion. It is most likely a result of friction.

Patients usually remain active during the treatment course; however, arm movement may be slightly limited. Patients are advised to avoid lifting greater than 10 pounds from the start to six weeks after radiation therapy. Fatigue is uncommon. Most patients who live close by the radiotherapy center continue to work during treatment.

After the final treatment, the nurse removes the catheters with sterile scissors. There is usually minimal to no pain and little or no bleeding. Gentle compression of the breast, particularly over the lumpectomy cavity, will express any serous fluid that may be present.

The nurse gives written and verbal skin-care instructions to the patient. The patient must cleanse the area with diluted peroxide solution and apply antibiotic ointment and a small dressing twice daily until the open holes (pock marks) heal. The pock marks usually close in about 2 to 5 days, at which time the patient may shower and use a moisturizing cream. Pock marks look red at first but fade over

time. Twice daily temperature monitoring continues for 2 weeks.

Regular follow-up examinations are important after breast brachytherapy. An initial follow-up visit, 4 to 6 weeks after treatment, is recommended to assess skin healing. Follow-up appointments are scheduled every 3 to 4 months for about 2 years, then every 6 months for 3 years. Six months after breast brachytherapy, a mammogram is obtained. A skilled radiologist or radiation oncologist must interpret this mammography after brachytherapy.

Conclusion

Overall, breast brachytherapy is well tolerated by patients. The accelerated treatment course is an attractive, convenient therapeutic option for selected patients, as it lessens the exposure of normal tissues to radiation.

Breast brachytherapy is nurse-intensive. Nurses guide patients through the treatment, manage skin care, assess and manage side effects, and provide encouragement and support.

Brachytherapy offers a new innovative approach to breast conservation for women with certain breast cancers. Despite the enthusiasm for this new technology, many critical questions still need to be addressed in confirmatory phase II (compared to an historical control) and prospective, randomized studies.

Outstanding questions include:

1. Will this form of brachytherapy produce non-inferior, local-regional control of ductal carcinoma in situ (DCIS) and Stage I and II breast cancer (less than 3 cm primary) at 5 years, compared to a conventional course of external beam brachytherapy?
2. Is brachytherapy less toxic than external beam radiotherapy?
3. How does the cosmesis of brachytherapy compare with established criteria?
4. What is the level of patient satisfaction with breast brachytherapy?
5. What is the correct way to interpret mammography after interstitial brachytherapy?
6. What are the rates of disease-free survival, mastectomy-free survival, and overall survival after brachytherapy?

Only with a defined approach to patient care that incorporates the resources of both community and academic centers can medical researchers determine the

value of brachytherapy for breast conservation.

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for seconds or even minutes at a time. Breathing can be made easier by keeping the patient in the semi-Fowlers position, which takes some of the pressure off the diaphragm for reasons described earlier. Mobilizing the patient as early as possible also helps. Sleep apnea is often managed at night with the use of a continuous positive airway pressure (CPAP) machine.¹⁸

If long-term ventilator support becomes necessary, performing a tracheostomy can be especially challenging if the trachea is buried deep within fatty tissue. A large wound may be needed to locate the trachea. This larger wound can lead to complications, such as bleeding, infection, or damage of the surrounding tissue. Postoperative tracheostomy care, therefore, includes steps to protect the peristomal skin and manage tracheostomy and wound drainage. To compound this dilemma, standard-sized tracheostomy tubes may be inadequate for use with patients with larger necks. In addition, narrow cloth tracheostomy ties can burrow deep within the folds of neck, further damaging the skin. The thicker or wider ties, such as Dale Tracheostomy Tube Holder, have been used by clinicians to prevent this sort of damage. The Dale holder is also available with an extension to total 25" in length.

Home-care needs

In the home-care setting, obese patients often pose serious management problems related to obesity itself as well as associated comorbidities. Planning and providing care to obese patients can be challenging. Not all obese patients will require special accommodation at home; however, patients who have limited mobility are likely to have special needs and therefore require special accommodation.

In a recent study, nurses reported five specific challenges in the home-care setting: equipment, reimbursement, access to resources, client motivation, and family/significant other support.¹⁹ The challenges cited most often involved specialized-equipment issues.

Many healthcare providers complain of the inability to turn, transfer, or lift heavier patients, which can lead to immobility-related concerns.²⁰ Family members and caregivers may be at risk for injury when caring for the obese patient in the home, as fewer personnel are available to help. Oversized wheelchairs and walkers with greater weight limitations than standard equipment are readily available for purchase or rent in major medical

supply centers. Both items promote independence and dignity. Equipment that nurses find most helpful in the home are the wheelchair, walker, commode, electronically-controlled bed frame, support surface, and lift.

When planning for oversized equipment in the home, consider weight limits, width, and electrical needs. In other words, does the patient have a sliding glass door or extra wide doorway through which equipment can be delivered? Or, will the equipment collapse, so that it can be delivered through a standard-sized doorway?

Conclusion

With obesity on the rise, clinicians best serve patient care by employing strategies to reduce or prevent costly complications. Although equipment is a helpful adjunct to care, it is never a substitute. Numerous resources are available to clinicians across practice settings, and use of resources in a timely and appropriate manner are thought to improve measurable therapeutic, cost, and satisfaction outcomes.

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After reading this article, the learner should be able to:

- Identify health conditions, which are associated with obesity, that could interfere with the patient's general level of health.
- Describe factors that influence weight and its regulation.
- Develop a plan of care for the larger patient requiring surgery.
- Describe an innovative radiation treatment for early-stage breast cancer.
- Discuss the role of nursing in the care of a patient receiving breast brachytherapy.
- Recognize the questions that further research must answer regarding the use of breast brachytherapy.

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1. **Obesity is associated with numerous coexisting conditions, which include:**
 - A. dental caries.
 - B. diabetes, hypertension, soft tissue infection.
 - C. urinary retention.
 - D. mood elevation.
2. **Factors that influence weight and its regulation include:**
 - A. genetics.
 - B. gender.
 - C. biochemistry.
 - D. all of the above.
3. **Two immobility-related conditions that could prolong the patient's postoperative course are:**
 - A. respiratory problems.
 - B. constipation.
 - C. atypical pressure ulcers.
 - D. A & C.
4. **Atypical pressure ulcers could be related to:**
 - A. pressure within skin folds.
 - B. tubes and catheters.
 - C. chairs that are too small.
 - D. A, B & C.
5. **Very overweight surgical patients seem to breathe better when the bed is positioned at the following angle:**
 - A. 90 degrees
 - B. 60 degrees
 - C. 30 degrees
 - D. none of the above
6. **Extra personnel may be required when transferring larger patients in order to:**
 - A. reduce the risk of caregiver injury.
 - B. promote patient safety.
 - C. ease patient's anxiety about falling.
 - D. A, B & C.
7. **Planning surgical care for the morbidly obese patient should include which of the following professionals:**
 - A. physical therapist
 - B. clinical specialist
 - C. bariatric surgeon
 - D. all of the above, as part of an interdisciplinary approach
8. **Which of the following is a false statement.**
 - A. The word "obesity" holds a negative tone.
 - B. Prejudice toward the larger person begins at a very young age.
 - C. Many Americans choose to be overweight.
 - D. Obesity is a chronic, complex, multifactorial disease that is recognized by the NIH.
9. **Nurses report that home-care challenges include:**
 - A. proper equipment
 - B. adequate reimbursement
 - C. access to resources
 - D. all of the above
10. **When planning for oversized equipment in the home, the following should be considered:**
 - A. weight limits of the home and surrounding structures
 - B. patient attitude
 - C. causes of obesity
 - D. A & C
11. **The major advantage (s) breast brachytherapy are:**
 - a. decreased treatment time.
 - b. diminished cardiopulmonary morbidity.
 - c. diminished radiation to the contralateral breast.
 - d. all of the above.
12. **Possible side effects of breast brachytherapy are:**
 - a. local skin infection.
 - b. lymphedema.
 - c. alopecia.
 - d. neutropenia.
13. **Which of the following is a false statement?**
 - a. Brachytherapy is more labor intensive than external beam radiotherapy.
 - b. Brachytherapy is currently offered as a treatment opportunity at a minority of centers.
 - c. Brachytherapy requires experienced and trained staff to perform the procedure and administer the treatment.
 - d. Brachytherapy requires the patient to be hospitalized for the treatment.
14. **Which of the following is a true statement?**
 - a. Brachytherapy is non-invasive procedure.
 - b. Lymph nodes are not treated with brachytherapy.
 - c. Brachytherapy is applicable for all types of breast cancer histologies.
 - d. Nurses are not an integral part of the breast brachytherapy team.
15. **Relative contraindication(s) to brachytherapy is (are):**
 - a. a patient with 6 positive lymph nodes
 - b. a patient with multi-focal breast disease
 - c. a patient with 4-cm tumor mass
 - d. all of the above
16. **Which of the following is (are) not a concern for nurses caring for a patient receiving brachytherapy?**
 - a. pain management
 - b. infection
 - c. patient and family education
 - d. none of the above

Mark your answers with an X in the box next to the correct answer

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1	A	B	C	D	4	A	B	C	D	7	A	B	C	D	10	A	B	C	D	13	A	B	C	D	16	A	B	C	D
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Participant's Evaluation

1. What is the highest degree you have earned?	1. Diploma	2. Associate	3. Bachelor's	4. Master's	5. Doctorate
Using 1 =Strongly disagree to 6= Strongly agree rating scale, please circle the number that best reflects the extent of your agreement to each statement.					
		Strongly Disagree			Strongly Agree
2. Indicate to what degree you met the objectives for this program:					
a. Identify health conditions, which are associated with obesity, that could interfere with the patient's general level of health.	1	2	3	4	5 6
b. Describe factors that influence weight and its regulation.	1	2	3	4	5 6
c. Develop a plan of care for the larger patient requiring surgery.	1	2	3	4	5 6
d. Describe an innovative radiation treatment for early-stage breast cancer.	1	2	3	4	5 6
e. Understand the role of nursing in the care of a patient receiving breast brachytherapy.	1	2	3	4	5 6
f. Recognize the questions that further research must answer regarding the use of breast brachytherapy.	1	2	3	4	5 6
3. Have you participated in a home study in the past? <input type="checkbox"/> Yes <input type="checkbox"/> No					
4. How many home-study courses do you typically use per year?	_____				
5. What is your preferred format? <input type="checkbox"/> video <input type="checkbox"/> audio-cassette <input type="checkbox"/> written <input type="checkbox"/> combination					
6. What other areas would you like to cover through home study?	_____				

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