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Transumbilical Breast Augmentation

Throughout history the female breast has attracted attention. Archeological investigations, for example, reveal numerous instances of breast enhancement by means of the cut and style of clothing. Historically, padding and the use of corsets were the mainstay of creating the appearance of larger breasts. Approximately 100 years ago, surgical attempts to augment the breast began. Transplanted body fat was tried first, and has been tried since, but has not been successful. Since 1899, a variety of substances (eg, paraffin, silicone oil) have been injected into breasts to enlarge them, but none of these substances were satisfactory. A variety of objects also have been surgically implanted for augmentation during the first half of this century, including glass balls, polyvinyl sponges, polyethylene tape, and polyurethane foam, but again none were satisfactory.[1]

In the early 1960s, it was shown that silicone was the most inert and least reactive of all implantable substances, and it seemed ideal for breast implants.[2] Since then, nearly three million women have had breast augmentation with implants made of silicone. In the early 1990s, there was speculation that silicone implants might be the cause of immune system disorders. There has been much litigation on this issue, however, research has shown these disorders to occur no more often in women with implants than in women without implants.[3]

For most of the nearly 40-year history of breast augmentation with silicone implants, the incision locations have been in the inframammary crease, the axilla, and around the nipple-areola (Figure 1). All three approaches permit the placement of both saline-filled or silicone gel-filled implants in front of or behind the pectoralis muscle (Figure 2). These three incision sites, however, leave visible scars. Recent developments in endoscopic instrumentation have enabled surgeons to perform many types of surgical procedures through small incisions located at a distance from the surgical site.

Searching for a way to make augmentation scars less conspicuous, a method was developed for inserting saline breast implants through a tiny incision inside the navel in 1991. This approach was called transumbilical breast augmentation (TUBA).[4] Although the original intent was to conceal the scar, it became apparent that the TUBA method had other advantages, including a quicker recovery, less pain, and an even lower chance of complications than older methods.[5] Transumbilical breast augmentation has proven safe and effective, and it rapidly is increasing in popularity.[6]

The TUBA procedure permits placement of implants either in front of (ie, prepectoral) or behind (ie, subpectoral) the pectoral muscle. These approaches also are called "subglandular" or "submuscular." This article focuses on the prepectoral procedure, with brief notations about the subpectoral procedure where appropriate.

The prepectoral TUBA

A B S T R A C T

Surgical augmentation has been performed since 1899, with varying results. Recent developments in endoscopic instrumentation have enabled surgeons to perform many types of procedures through small incisions located at a distance from the surgical site. The transumbilical breast augmentation (TUBA) has advantages over other methods, including a quicker recovery, less pain, and lower chances of complications. This article familiarizes perioperative personnel with TUBA and how to care for the patients who undergo this procedure. *AORN J* (Oct 2000) 615-625.

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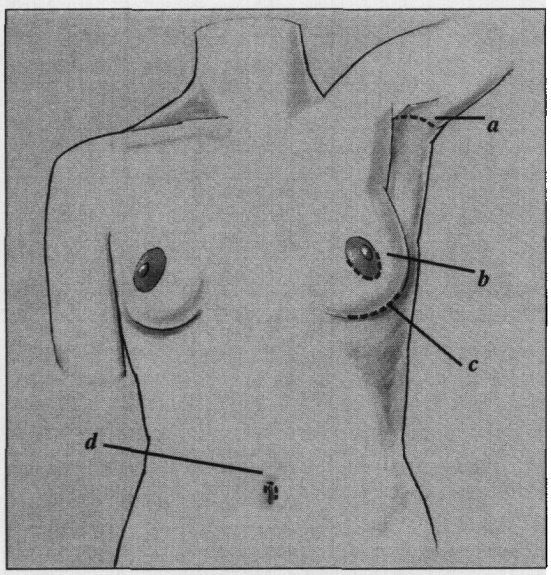

Figure 1 • Incision sites commonly used for breast augmentation (a) axilla, (b) nipple-areola, (c) crease under breast, (d) umbilicus. *(Illustration by Mark Katnik, Denver)*

method offers the lowest complication rate, the least postoperative discomfort, the most rapid recovery, a fairly inconspicuous scar, and an operative result identical to any other prepectoral saline-filled breast augmentation procedure.[7] By comparison, TUBA subpectoral placement offers a slightly lower level of pain than other subpectoral incision procedures, and the scar is less conspicuous.

The transumbilical approach takes approximately one hour and has become an accepted, reliable, and safe procedure when performed by a plastic surgeon skilled in the method. At present, only a small number of plastic surgeons have undergone the training needed to learn the TUBA method, but the number is increasing.

As with any procedure, a key factor in making TUBA safe and expeditious is well-educated nursing staff members thoroughly versed in the instrumentation and sequence of steps involved and the patient care required. Although the TUBA procedure uses techniques with which perioperative staff members are likely to be familiar (eg, endoscopes, long instruments, implants, tissue expanders), their use in this procedure is likely to be novel for many. Perioperative nurses need to become familiar with the instrumentation, the procedure, and the care of the patient; to educate and care for the patient correctly in the preoperative and postoperative periods; to expedite the procedure itself; and to maximize patient safety and optimal result. Each surgeon will have his or her preferences; the information presented here represents the opinions and the practice of Richard Dowden, MD and the policies and procedures of The Surgery Center, Middleburg Heights, Ohio.

SURGICAL CANDIDATES

Women who are candidates for breast augmentation include those who never developed the size breasts they desire, as well as those who once had larger breasts and then lost volume through weight loss, aging, or postpartum changes. Women requesting breast augmentation are from all walks of life. Women of any age can be considered for breast augmentation, although most surgeons decline to perform the procedure on women less than 18 years of age unless there are very unusual circumstances (eg, a congenital discrepancy between the two breasts).

The majority of women having breast augmentation are between 18 and 50 years of age.[8] As long as the woman is healthy enough to undergo anesthesia,

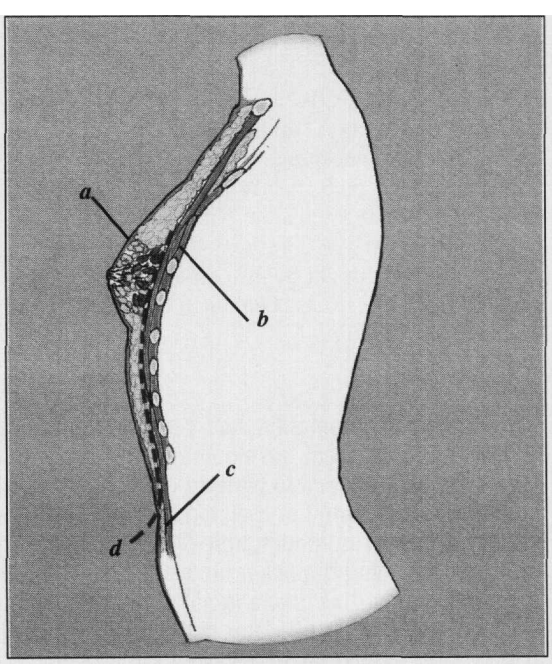

Figure 2 • Cross-section showing the (a) breast, (b) pectoral muscle, (c) abdominal wall, and the (d) plane of the passageways. *(Illustration by Mark Katnik, Denver)*

there is no upper age limit, and many women in their 50s and 60s undergo breast augmentation. Women desiring augmentation should want the procedure for personal reasons, not because of a partner or to save a failing relationship. The surgeon tactfully explores the woman's motivation for seeking the surgery during the initial consultation. Most of the women who seek consultation are well-informed, interested in learning about their options, and highly motivated to take care of themselves before and after the procedure.

Transumbilical candidates. Candidates for TUBA are similar to candidates for breast augmentation by other methods. The TUBA procedure may be inappropriate if the woman has an actual deformity of the breast (eg, a congenital defect, a defect from previous surgery or trauma). This may require extensive modification of the breast skin itself, in which case external breast incisions are required. If the patient has the option of any augmentation approach, all surgical options are discussed with her. Patients often prefer certain approaches (eg, axillary, inframammary, periareolar) over others for personal reasons.

A thorough preoperative consultation takes several hours because of all the options available. It usually is divided into two separate sessions. Patients (and their partners when possible) view the standard videotapes about the procedure; read summaries of the details, including information from the US Food and Drug Administration (FDA) and the implant manufacturers; and receive counseling about preoperative preparations, the details of the operation, and postoperative care and recovery. A thorough medical history is taken, and a complete and detailed breast examination is performed. A mammogram is ordered if the patient is due for one according to the guidelines of the American Cancer Society (ie, first mammogram at 35 years, second at 40 years, yearly thereafter).[9] To determine the appropriate size of the implant, the patient is asked to bring various types of clothing with her to the appointment. An adjustable, inflatable implant is placed in a bra of the desired size. The implant then is filled with water until the patient sees the size and shape she desires in and out of the clothing she has brought in. Detailed measurements of the chest and breasts are made and recorded on the chart. Within certain limits of skin elasticity, any size of implant can be placed.

PREOPERATIVE PREPARATION

Preoperative preparation includes the standard laboratory testing required by the surgical facility where the procedure will be performed or as needed based on the patient's health. There are no tests specific to this procedure. Although the patient will have been thoroughly prepared in the office, the perioperative nurse will need to be able to answer any additional questions about the preparations, the procedure, and the expected postoperative course and to reinforce this teaching. The nurse verifies the operative consent and type of anesthesia (usually general) with the patient. An IV line will be started, and preoperative prophylactic antibiotics begun (eg, cephalosporin, vancomycin in therapeutic doses). In the preoperative area, the nurse maintains the patient's privacy when the surgeon asks the patient to stand while he or she marks the patient's current and desired inframammary creases. He or she also will mark the proposed incision line, just inside the rim of the umbilicus, and mark the left and right tunnel lines, which originate at the umbilicus and pass just medial to the areola of each breast (Figure 3).

The surgeon gives prescriptions for postoperative medications (eg, antibiotics, analgesics, a muscle

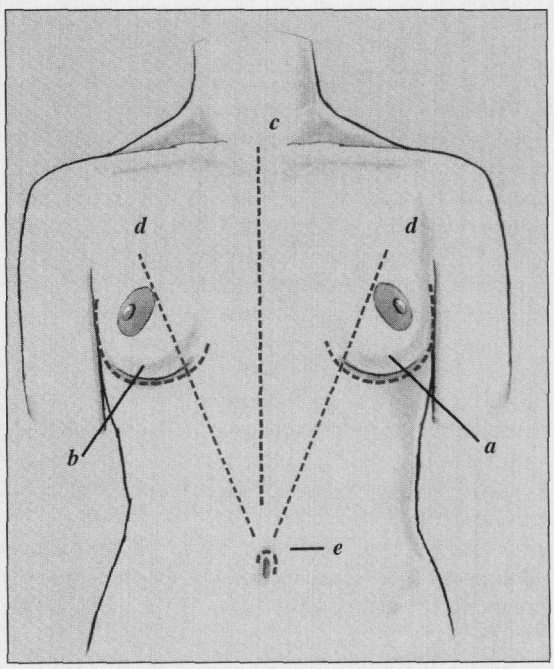

Figure 3 • Typical preoperative markings for the prepectoral transumbilical breast augmentation approach (a) current breast crease, (b) desired new breast crease, (c) midline, (d) tunnel direction, (e) umbilical incision. *(Illustration by Mark Katnik, Denver)*

relaxant if the procedure is subpectoral) and another copy of the written postoperative instruction sheet to whomever accompanies the patient. Patients are told to expect soreness and tightness of the breasts and some discomfort around the navel. If the patient wears a navel ring, she is asked to remove it. It can be sterilized and reinserted by the nurse after the procedure is completed and the drapes are removed if the patient so requests. The patient is told where she will be recovering and to expect drowsiness and discomfort afterwards. It is stressed that nursing staff members will keep the patient comfortable with analgesic medications. Pneumatic stockings may be placed on the patient preoperatively or in the OR.

Frequently asked questions. The patient or the people accompanying her may have questions based on misunderstandings or incorrect information. It is helpful if the perioperative nurse can clarify the following four misconceptions about TUBA.

Implant warranty. Patients have been told that inserting implants via the navel does not void the manufacturer's warranty, which includes free lifetime implants and financial assistance if the implants fail in the first five years. In May 2000, however, after 38 years of clinical use, the FDA approved the use of implants, but it did not include approval of endoscopic axillary or umbilical augmentation procedures. The agency required that manufacturers not recommend these procedures as there were no data submitted to the FDA about them.[10] Despite this FDA recommendation, manufacturers have reaffirmed their commitment to honoring their warranties. Patients are fully informed of the FDA recommendation and are given the manufacturer's product brochures to read.

Concern about abdominal entry/injury. During the TUBA procedure, there is no penetration of the abdominal muscles, no entry into the abdominal cavity, no proximity to internal organs, and no air insufflation.

How surgery is accomplished. Inquiries are common about how the surgeon can do "all that cutting from such a long way away." One of the unique aspects of the TUBA method is that there is no cutting in the breast area whatsoever. We explain that the pocket is made through hydraulic expansion of the smooth, saline-filled expander rather than by cutting.

Complications. People assume that the risk of complications might be high with the TUBA, but in fact, it is lower with the TUBA than the already low risk of augmentation by other methods.[11] This is because only blunt dissection is used to make the pocket, and there is no cutting. The lack of cutting results in less bleeding (ie, less risk of hematoma) and infection, and there is less risk of nerve damage. With the TUBA procedure, there only is one incision and there is an escape route (ie, the subcutaneous tunnel) for any accumulating fluids.

OR PREPARATIONS

The circulating nurse and scrub person prepare the OR and gather the appropriate instrumentation, including

- a basic plastic surgery tray,
- Senn and Army/Navy retractors,
- heavy Mayo scissors,
- a 10-mm, zero-degree endoscope with video camera and light cord, and
- the Johnson transumbilical instrument set (ie, Johnson tube and obturator, long metal suction tube, Johnson blunt right-angled and pusher tip instruments, a special right-angled Baccari instrument used for subpectoral placement). (Figure 4).

The circulating nurse and scrub person verify the function of the video monitor, the temperature regulating equipment, and the pneumatic pump for the pneumatic stockings. They also ensure that the appropriate implants are available.

Drapes. Draping must provide full exposure of the patient's torso from neck to pubis and flank to flank.

Medications. These procedures often are done under general anesthetic. Other medications required include 10 mL 0.25% bupivacaine with epinephrine for the incision site and 50 mL 0.5% lidocaine with epinephrine for pocket irrigation. For subpectoral insertion, some surgeons add 300 units of hyaluronidase to the pocket irrigation to increase medication dispersion through the muscle, and some surgeons chill the mixture to promote vasoconstriction of the muscle. Muscle relaxants are not used for prepectoral placement because normal muscle tone will help the surgeon avoid getting under pectoral muscle. Relaxants initially are used for subpectoral placement once the tunnels are made.

Implant-related materials. It is common to have three sizes of implants available for most augmentation procedures. The TUBA procedure, however, does not lend itself to trial-and-error intraoperative size selection, so multiple sizes of implants need not be ordered. Only post insertion-filled, saline implants are suitable for the TUBA procedure. The technique

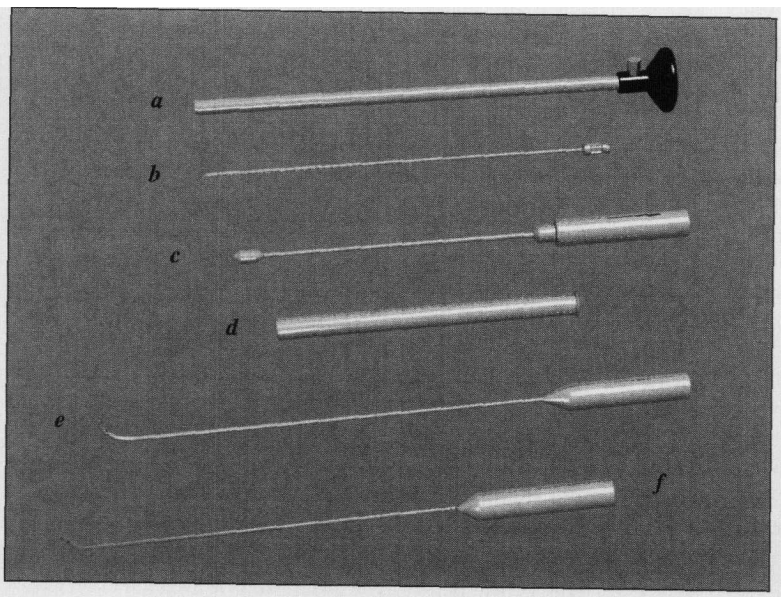

Figure 4 • Instrumentation needed for the transumbilical breast augmentation procedure. (a) endoscope, zero-degree 10-mm diameter, (b) suction tube, (c) obturator, (d) tube, (e) Johnson angled rod, (f) Baccari angled rod. *(Illustration by Mark Katnik, Denver)*

is not suitable for prefilled implants, including those filled with saline, polyurethane, or silicone gel.

A pair of sterile temporary expanders of the appropriate size selected by the surgeon are required. It is not advisable to use the implants themselves as expanders, because doing so puts excessive stress on the implant and can weaken it.[12] A bag or bottle of IV normal saline with which to fill the implants is needed. A 60 mL syringe and a closed IV tubing administration set is used to fill the implant without exposing the saline to room air and possibly contaminating the solution with dust particles or bacteria. It is our practice to warm this saline to about 100 °F (37.78 °C) to help maintain patient warmth. It is not advisable to use dextrose to fill the implants as, theoretically, it could permit growth of organisms within the implant, although this has never been documented.

Before the patient is brought to the room, the surgeon inspects the implants, tests them by immersion in saline to verify the absence of leaks, and inserts the fill tubes. The surgeon and scrub person infuse the implants with a small volume of saline, evacuate them of air and saline, and roll them into a bicylindrical shape for insertion. This also is done with the expanders, although these already have their fill tubes integrally attached. Some surgeons prefer to have silk ties securing any junctions where fill tubes connect to prevent unintended separation during the procedure, but we have found that unnecessary.

Patient positioning and preparation. The patient is supine for the procedure, with her arms extended to approximately 90 degrees. The circulating nurse pads the patient's arms and ensures that they are well secured. Securing the patient's arms is important to assess breast symmetry intraoperatively as it prevents shoulder motion when the patient is brought to a semi-sitting position. After the implants are placed, the anesthesia care provider and the circulating nurse will assist the patient to a semi-sitting position to verify breast symmetry. For subpectoral placement, the patient's arms are nearer her sides (eg, approximately 45°) to relax the pectoral muscles. Although a cautery usually is not needed, the nurse places an electrosurgical unit dispersive pad on the patient's thigh. He or she ensures that the patient's knees are not flexed or placed on a pillow to avoid hindering manipulation of the long instruments during the procedure. For the same reason, the circulating nurse ensures that all blankets and drapes are quite flat in the pubic area and that the electrocardiogram leads are not in the field at the lateral chest area. We prefer that a lower body temperature regulating blanket and knee-length pneumatic stockings be used. No urinary catheter is used because of the short duration of the procedure. The area to be prepped extends from the patient's neck to the pubis and flank to flank, including the axillae. Full sterile draping is placed to allow complete

exposure of the prepped area.

Equipment positioning. The circulating nurse positions the video unit near the patient's left shoulder for a right-handed surgeon. The scrub person places the Mayo stand over the patient's feet to allow freedom of instrument movement over the lower part of the patient. The scrub person generally stands on the same side as the surgeon to have a good view of the monitor and be able to properly anticipate each subsequent step. The assistant stands opposite the surgeon, and it is helpful if a second monitor can be provided for the assistant.

OPERATIVE PROCEDURE

After positioning, prepping, and draping, the surgeon subcutaneously injects a long-acting local anesthetic containing epinephrine for vasoconstriction with a 25-g needle around the rim of the umbilicus. For subpectoral placement, a thin blunt-tipped cannula is used percutaneously at the lateral border of each breast to infuse a chilled, dilute solution of local anesthetic, epinephrine, and hyaluronidase into the subpectoral space. The navel incision then is made using a #15 blade. The incision runs from approximately the 10 o'clock position to the 4 o'clock position just inside the upper rim of the umbilical fold. There is no incision external to the navel.

The surgeon first uses small blunt scissors to spread down to the rectus fascia, and then he or she uses large blunt Mayo scissors. Once the tissue plane is initiated, two tunnels, which pass up over the costal margin and beyond the inframammary fold on each side, are made with the Johnson obturator. Next, the scrub person slides the Johnson tube over the obturator and wets the tube with saline for lubrication. The surgeon uses this instrumentation to advance up each passageway. The scrub person prepares the endoscope by attaching the light source, connecting the camera to it, and treating the viewing end of the lens with a standard fog-reducing solution. This is done while the surgeon withdraws the obturator, leaving the tube in place. The surgeon passes the endoscope through the tube and inspects and confirms proper placement of the tunnel before proceeding. Any adjustments of position are best made at this point. Slow withdrawal of the tube and endoscope together permits verification of the usual absence of any significant bleeding. The blunt right-angled Johnson instrument then may be used as a sort of blunt dissector to facilitate the separation of breast from muscle. For subpectoral placement, the Baccari angled dissector is used.

Once inspection is complete and the endoscope and tube are removed, the tightly rolled expander with its fill tubing then is inserted through the incision and manually manipulated to pass through the appropriate tunnel into position behind the breast tissue on each side. During the advancement of the expander, the scrub person uses an empty 60 mL syringe attached to the expander fill tube to maintain a slight negative pressure, which helps keep the expander tightly rolled. To avoid any damage to the expander or the implant, neither one should pass through or touch the metal tube, nor should they come into contact with any instrument. Once the expanders are in place, the scrub person connects the fill tube emerging from the navel to the fluid administration set, and the expander is gradually filled with sterile IV saline using a closed system. This is done while the breast is externally compressed and manipulated by the surgeon to shape an appropriate pocket for the implant. The circulating nurse keeps a careful tally of the volume of saline inserted. This usually exceeds the final implant volume by at least 50% to adequately size the pocket.

The expanders then are reduced to the normal implant volume. This volume is carefully monitored by the nurse. Symmetry of the breasts is verified with the patient in a semi-sitting position. The surgeon endoscopically examines the sizer in the pocket and performs any further dissection as needed, then he or she removes the expanders and reintroduces the endoscope for inspection of the pocket to assess for bleeding. Hemostasis usually is not required. The surgeon inserts the long metal suction tube with a syringe containing the local anesthetic and epinephrine solution, and irrigates each pocket with 25 mL of the solution. This is evacuated after a few minutes using the same suction tube.

The surgeon then passes the implants into position using the same method by which the sizers were placed. This manual manipulation ensures that no instruments touch the implants and that the implants contact only soft tissue. All that remains in each tunnel is the implant fill tube. The implant is inflated to the predetermined volume of sterile IV saline via a completely closed system. It is essential that the volume be exact and that this volume is recorded in the patient's chart.

After a final verification of symmetrical size and position, the surgeon pulls on the implant fill tube, with counter-traction on the breast, to disconnect the tube from the implant. As the fill tube releases, the

Table 1

EXAMPLE OF POSTOPERATIVE BREAST AUGMENTATION ORDERS

Be available by telephone between 10 PM and 12 AM.

- Give your surgeon the telephone number where you will be.
- Do not have an answering machine on.
- Do not have any form of call blocking turned on.
- Do not have voice mail activated.
- Keep your telephone line free.

Activity

- An adult must stay with you the entire night.
- Remain in bed with your head elevated except for trips to the bathroom with help.
- Do not attempt to get up without help for the first 12 hours.
- Do not sit in a chair for more than five minutes at a time.
- You may not do any lifting, exercise, or attempt to drive or operate machinery until approved by your surgeon.

Dressings

- Do not apply ice, cold, or heat to the surgical area.
- Leave all dressings in place and keep them dry.
- If there is an elastic band on the upper breast, keep it above your nipples. If there is an abdominal binder, keep it pulled down so that it does not press on the breasts.
- If drains were used, empty, measure, and record the amount of fluid removed every eight hours.

Medications

- Begin taking any prescribed antibiotics or muscle relaxants according to label directions.
- All strong pain medications can cause nausea. If nauseated, take half of a pill. If this is too strong, use extra-strength acetaminophen (ie, Tylenol).
- Avoid taking medications on the prohibited medication list provided (eg, ibuprofen, aspirin, vitamin E) until authorized by your surgeon.

Eating/drinking

- Restrict your intake to clear liquids only.
- If you want a carbonated beverage, the carbonation must be removed by shaking.

Notify your surgeon

- If you experience increasing pain, fever of more than 101 °F (38 °C), or if there is a rapid change in the size of either breast.
- Considerable swelling around the mid-chest, the nipples, and at the sides of the chest is normal after breast augmentation surgery; however, any rapid change in size should be reported immediately.
- If you are given any instructions that conflict with these, please verify them with your surgeon.
- Do not be alarmed if you hear noises or sounds from around your breasts for a few weeks. This is normal after any breast implant surgery.
- Make a postoperative appointment with your surgeon for tomorrow. Call _____ for this appointment.

Table 1

EXAMPLE OF POSTOPERATIVE BREAST AUGMENTATION ORDERS (CONTINUED)

Postoperative day one and two

First 24 hours after surgery (Same as previous instructions with these changes)

- Gradually resume regular eating.
- You may lie on either side without your head propped up.
- Begin taking a stool softener (eg, Colace) to avoid constipation from the pain medication.
- Notify surgeon if there are any rapid size changes in either breast.

Office visits

- Take a dose of extra-strength acetaminophen (ie, Tylenol) just before your visit.
- Bring a bra that will fit your new size breasts (eg, the one used for sizing).
- If a drain was used, take the stronger pain medication you were given.
- Bring the sheet on which you recorded the amounts of drainage emptied from the drain system.
- *Have someone drive you to the office.*

Second 24 hours (Same as previous instructions with these changes).

- Sexual relations may be resumed without any pressure on the breasts.
- Limit sitting in a chair to 10 minutes. Walking is encouraged.
- You may remove any binders or wraps for 10 minutes every four hours.
- You may take a tub bath. Keep water level low and dressings dry; get assistance getting in and out of bath.
- You may wear a comfortable bra over the breast dressings (underwires are okay).

Third day through third postoperative week

- Reduce the use of prescription pain medication and use extra-strength acetaminophen.
- Treadmill use is okay when you no longer are taking pain medication.
- You gradually may increase nonimpact activity (eg, light lifting if not painful).
- Swimming, bathing, and showering are permitted; replace the breast wrap as instructed.
- Any small tape strips may be removed as they loosen. Do not cut them.
- Bruising and considerable swelling may last for two to five weeks. Notify surgeon of any rapid size change in breasts.
- You may drive only if more than six hours have elapsed since last dose of pain medication.
- Air travel is permitted, but be sure to get up and walk around the plane every hour or two.

Third postoperative week on

- Wear the breast wrap only if instructed to do so.
- Pressure on the breasts (eg, during intercourse, sleeping on stomach) is okay if not painful.
- If instructed to massage the breasts, do so four times per day.
- You may experience small sharp pains in the surgical area for several months. This is normal.
- Underwire bras are all right to use; you can remove the wires if desired.
- Do not use heating pads or hot water bottles on your breasts; hot tubs, saunas, and Jacuzzi baths are not harmful.
- Antibiotics are recommended if you have teeth cleaning or gum surgery.
- Do not let anyone stick a needle into your breasts without checking with your plastic surgeon.
- Breast feeding and pumping are okay, but call your surgeon if you get an infection of the breast while nursing.
- If you need help finding a facility for mammograms, call the office.
- Save this form and your implant registration form.
- Schedule yearly check-ups with your surgeon, and notify our office of any name or address changes.

valve on the implant seals. The scrub person inspects the end of each fill tube to confirm that no portion has broken off. The surgeon then uses the endoscope to verify absence of bleeding or implant leakage. In the unlikely event that a drain is desired (eg, if the surgeon judges that there is more bleeding than usual), a round 2-mm drain can be placed in each passageway, exiting through tiny incisions in the navel that do not require suturing. Closure of the small umbilical incision usually is done with interrupted and then continuous absorbable suture. Before completing the suturing, the surgeon makes a final pass with the suction tube in each tunnel while massaging the breast to evacuate any air that might cause gurgling sounds postoperatively. Sterile self-adhesive tape strips cover the tiny incision. Although no sponges are ever inserted into the wound, it is good practice to perform a sponge and needle count. The patient is fitted with an elastic bandage across the upper breast area to maintain slight pressure on the implants during healing. An elastic bandage or binder also may be placed across the upper abdomen for patient comfort.

POSTOPERATIVE CARE

We have observed that prepectoral transumbilical patients have significantly less postoperative pain than those whose prepectoral implants are inserted through other incisions. This may be because no tissue cutting is done in or behind the breast, the incision pain is located in an area less sensitive than the breast, and the implants place no tension on an incision. Postoperative analgesic medication doses must be decreased because of the reduced pain. The patient can have sips of clear liquids promptly. We prefer to avoid carbonated beverages, which can cause bloating.

Although complications are uncommon after transumbilical augmentation, the postanesthesia care unit (PACU) nurse must watch for signs of implant deflation or breast expansion from hematoma. Some surgeons prefer to place cold packs between the patient's breasts. Patients with subpectoral implant placement have considerably more pain than patients with prepectoral placement. This may be due to the presence of muscle spasm. These patients require larger doses of analgesic, as well as antispasmodic medications, such as diazepam. Subpectoral transumbilical patients have slightly less pain than other subpectoral augmentation patients. Many surgeons prefer to have patients with subpectoral placement stay overnight. Discharge criteria are the same as for any general anesthetic procedure. Early ambulation is normal with transumbilical breast augmentation patients. Often, prepectoral TUBA patients are transferred directly from the OR to sitting up in a chair in the PACU. The PACU nurse reviews discharge instructions with the patient and her caregiver before discharge (Table 1). Discharge instructions are explicit regarding activity, postoperative care, and complications for which the patient should be alert, as the patient's postoperative course is individual and cannot be predicted accurately.

CONCLUSION

Transumbilical breast augmentation offers many advantages over traditional augmentation approaches. These advantages include an inconspicuous scar, less postoperative pain, and a faster recovery than with other methods. Transumbilical breast augmentation is safe and effective when performed by a qualified surgeon skilled in the method, who is working with a perioperative team well-versed in the details of the procedure and the appropriate care of these patients. ▲

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NOTES

1. W H Beekman et al, "Augmentation mammaplasty: The story before the silicone bag prosthesis," *Annals of Plastic Surgery* 43 (October 1999) 448.

2. T D Cronin, F J Gerow, "Augmentation mammaplasty: A new natural feel prosthesis," in *Transactions of the Third International Congress of Plastic and Reconstructive Surgery,* T R Broadbent et al, eds, (Amsterdam: Excerpta Medica, 1964) 41-49.

3. R J Rohrich, "Safety of silicone breast implants: Scientific validation/vindication at last," *Plastic and Reconstructive Surgery* 104

(November 1999) 1786.

4. G W Johnson, J E Christ, "The endoscopic breast augmentation: The transumbilical insertion of saline-filled breast implants," *Plastic and Reconstructive Surgery* 92 (October 1993) 801.

5. *Ibid*; G W Johnson, R V Dowden, "Breast augmentation: Transumbilical retroglandular approach," in *Endoscopically Assisted Aesthetic Plastic Surgery*, P B Fodor, N G Isse, eds (St. Louis: Mosby-YearBook, 1996) 145-166; G W Johnson, R V Dowden "Breast augmentation: Umbilical approach," in *Endoscopic Plastic Surgery*, O M Ramirez, R K Daniel, eds (New York: Springer-Verlag, 1996) 156-175.

6. R V Dowden, "Dispelling the myths and misconceptions about transumbilical breast augmentation," *Plastic and Reconstructive Surgery* 106 (July 2000) 190.

7. Johnson, Christ, "The endoscopic breast augmentation: The transumbilical insertion of saline-filled breast implants," 801; Johnson, Dowden, "Breast augmentation: Transumbilical retroglandular approach," 145-166; Johnson, Dowden "Breast augmentation: Umbilical approach," 156-175.

8. American Society of Plastic Surgeons, *Age Distribution by Cosmetic Procedure* (Arlington Heights, Ill: Plastic Surgery Information Services, 2000).

9. *Mammography and Other Breast Imaging Procedures* (Atlanta: American Cancer Society, 2000).

10. *Saline-filled Breast Implant Surgery: Making an Informed Decision*, (Irving, Tex: Mentor and McGhan Corp, May 2000).

11. G W Johnson, J E Christ, "The endoscopic breast augmentation: The transumbilical insertion of saline-filled breast implants," 801.

12. R V Dowden, "Endoscopic breast augmentation," in *Plastic Surgery Indications, Operations, and Outcomes*, B M Achauer et al, eds (St Louis: The C V Mosby Co, 2000) 2757-2767.

Worldwide Breast Cancer Initiative Launched in Norway

The Susan G. Komen Breast Cancer Foundation and the International Society of Nurses in Cancer Care (ISNCC) have launched an international initiative to improve breast cancer care, research, and awareness according to a July 28, 2000, news release from the Susan G. Komen Breast Cancer Foundation. The initiative, "Train the Trainer," is a global effort to eradicate breast cancer.

The purpose of the initiative is to release a culturally sensitive global curriculum to be distributed to nurses worldwide. The initiative will meet the increasing demand of consumers for health care and health information.

Many countries do not have cancer education opportunities for nurses, and no formalized programs exist in which nurses teach patients about breast cancer. Nurses were trained at an initial conference held July 29 to 30, 2000, in Oslo, Norway.

Participating countries currently include Italy, Brazil, Greece, Germany, Spain, Australia, Israel, China, and Norway. Nurses who attended the initial conference have been charged with starting the program in their respective countries, thus creating a trickle down effect.

Tests were conducted before and after the seminar to measure the program's success. Additionally, representatives of the Komen Foundation and the ISNCC board will evaluate the program in one year.

Nine million new cases of cancer occur around the world annually. Breast cancer is the most common malignancy among women, and the leading cause of death in women ages 40 to 59. The ratio of mortality to incidence is 61% worldwide.

The Susan G. Komen Breast Cancer Foundation Funds First-Ever International Nursing Education Program to Improve Breast Cancer Worldwide *(news release, Oslo, Norway: Susan G. Komen Breast Cancer Foundation, July 28, 2000) 1-2. Available from http://www.newsdesk.com/members/showdoc.htm?file=pr136175.txt. Accessed 31 July 2000.*