

# Shower Helps Heal Open Wound After C-Section

BY SHERRY BOSCHERT  
San Francisco Bureau

SAN FRANCISCO — If a cesarean wound must be opened days after the surgery, one of the best ways to help it heal by secondary intention is to get the patient into the shower, Harriet W. Hopf, M.D., said at a meeting on antepartum and intrapartum management sponsored by the University of California, San Francisco.

Even with the best of care, some cesarean section wounds need to be opened 4-7 days after the surgery, because they either fail to heal or become infected, said Dr. Hopf of the university. Open wounds heal best when you reduce the bacterial load, keep the wound moist, and pay attention to nutrition and perfusion.

A wound requires several elements for good healing—the right amount of inflammation, protein, oxygen (perfusion), and a proper environment. An infected wound is too inflamed and slow to heal. Most infection comes from bacteria on the skin. Rinsing a wound with normal saline doesn't provide enough volume to remove bacteria. The cold saline induces local vasoconstriction, while a warm show-

er induces local vasodilation, enhancing perfusion of the wound.

"Just get them in the shower" daily, said Dr. Hopf. "It works so well. That's the primary intervention that I make when I see a patient." Have patients shower with mild soap and not with bacteriocidal products that not only kill bacteria but inactivate white cells and harm granulating tissue, which delays healing.

If you need to open a cesarean wound, usually by that time the patient no longer has an intravenous line or catheter to get in the way of showering. If she's still on an intravenous line, saline lock it, cover it with a Tegaderm dressing, and have her shower, Dr. Hopf said in an interview. If the patient still has a bladder catheter, skip the shower but use a basin of warm tap water and a 60-mL syringe to irrigate the wound.

For women on steroids, which interfere with healing, applying ointment containing vitamins A and D (typically used for di-

aper rash) will reverse the steroid effect and help pull macrophages into the wound for healing.

Make sure the patient has adequate pain control, which promotes healing by reducing vasoconstriction and enables dressing changes. Optimize perfusion by keeping the patient warm, giving her plenty of fluids, aggressively managing pain and edema, and encouraging smokers to quit.

Wounds need protein to heal, and lactation uses much of the body's protein. Encourage women who've had C-sections to eat plenty of protein.

"It's hard to get the protein to the wound because the protein is going someplace else," she said. Over-the-counter protein supplements that contain the amino acid arginine can improve wound healing if needed.

Patients deficient in vitamin A, vitamin C, or zinc will heal more slowly. To replenish them, Dr. Hopf recommends a 10-

day course of daily vitamin A (25,000 international units) and zinc (220 mg). A larger amount can be toxic. Vitamin C is nontoxic, and all patients with wounds should get 500-100 mg daily.

Try to keep the wound moist and the surrounding skin dry for best healing. Wounds often start off exuding and later become dry, so don't necessarily use the same dressing throughout healing.

Any of the more than 1,000 wound dressing products available will enable significantly better healing than traditional "wet-to-damp" dressings with saline and gauze, Dr. Hopf stressed.

The commercial products cost more initially, but get changed once daily instead of t.i.d. changes for wet-to-damp dressings, which require more labor and materials. In the end, the cost is about the same, and the patient experiences less pain with commercial dressings, she said. Dr. Hopf said she has no financial relationship with wound-dressing companies.

For an exuding wound, fluff calcium alginate (Sorbsan) and fill the wound loosely with it to absorb exudate, maintain a moist environment, and protect skin from maceration. ■



**A warm shower induces local vasodilation, enhancing perfusion of the wound.**

DR. HOPF

## Super Obese Women Could Boost Cesarean Section Rates

BY BETSY BATES  
Los Angeles Bureau

PALM DESERT, CALIF. — There may be a threshold of morbid obesity associated with a sharply increased risk of nonelective cesarean delivery that is not shared by less obese women, according to results of a preliminary study presented at the annual meeting of the Society for Obstetric Anesthesia and Perinatology.

The issue may have clinical implications for management of women at the lower ranges of morbid obesity who may wish to undergo labor without early and aggressive epidural management in anticipation of a probable cesarean section.

In their study, investigators at the University of Michigan, Ann Arbor, looked for a linear increase in cesarean deliveries as obesity increased, but instead found that nonelective cesarean deliveries did not significantly increase until body mass indexes rose above 46.

At the highest ranges of obesity, a very significant increase in nonelective C-sections was seen in the study of 226 parturients: 58% or those with a BMI of 47-88, compared with 39% for women with BMIs between 30 and 46.

Monica Riesner, M.D., of the department of anesthesiology at the University of Michigan, presented the findings on behalf of a colleague, Jill Mhyre, M.D., who could not attend the meeting.

Dr. Mhyre and associates studied the charts of obese parturients who delivered vaginally or by nonelective C-section at their institution between 1999 and 2002. Women undergoing elective C-sections were not included in the analysis.

Among the patients meeting study criteria,

62 had a BMI between 30 and 39.9 (defined as obese by the Institute of Medicine); 116 had a BMI between 40 and 49.9, and 48 had a BMI between 50 and 88.

A BMI greater than 50 has been proposed by some authors to constitute a new category, the "super obese."

The mean BMI in the cohort was 44.5. The mean age was 28 years.

Fourteen percent of the group had diabetes, 14% had preeclampsia, one-fifth had asthma, and a quarter smoked.

Slightly more than half of the women delivered vaginally.

The nonelective C-section rate was 42% in women with BMIs between 30 and 39, and 45.7% for those with BMIs between 40 and 88, a nonsignificant difference.

In fact, a statistically meaningful difference in C-section rates was not observed in women with BMIs lower than 46, although they were significant at every cut point of BMIs above that level.

The single-institution study was not sufficiently powered to determine an absolute threshold for increased cesarean risk, which investigators hypothesized "may be as high as 50 or even 55," said Dr. Riesner.

Stepwise logistic regression analyses found that a BMI greater than 46 was independently associated with more than a twofold increase in the risk of C-section.

Parity appeared to be protective in less obese women, but not in women with a BMI of 47 or higher.

A more comprehensive study is underway using a new electronic records system to capture more cases, with the aim of shedding more light on the findings of this preliminary study. ■

## Delaying Epidural Anesthesia in Labor May Not Be Advantageous

BY SHERRY BOSCHERT  
San Francisco Bureau

SAN FRANCISCO — Data from recent studies call into question the recommendation that physicians delay administration of epidural anesthesia to nulliparous women in labor, Michael P. Nageotte, M.D., said at a meeting on antepartum and intrapartum management sponsored by the University of California, San Francisco.

The American College of Obstetricians and Gynecologists has recommended that "when feasible, ob-

750 term nulliparous women who had experienced spontaneous labor or spontaneous rupture of the membranes. All of the women had a cervix that was dilated less than 4 cm on the initial exam and were told at the time of randomization that they would get an epidural if needed.

The women were randomly assigned to receive either an intrathecal injection of fentanyl or systemic hydromorphone when they first requested analgesia. A woman's second request for analgesia resulted in administration of an epidural in the intrathecal group or assessment of cervical dilation in the systemic analgesia group. Women in the systemic group got an epidural if the cervix was dilated at least 4 cm, or received a second dose of systemic hydromorphone and were given an epidural upon their third request for analgesia.

The rate of cesarean delivery did not differ significantly between groups, but it was slightly higher in the delayed-epidural group, compared with the early-epidural group—21% vs. 18% (N. Engl. J. Med. 2005;352:655-65). The early-epidural group also had a significantly shorter time from receiving the first analgesia to complete cervical dilation (295 vs. 385 minutes) and a significantly shorter time from first analgesia to vaginal birth (398 vs. 479 minutes).

Women in the early-epidural group had better pain scores and were less likely to have babies with low Apgar scores at 1 minute. ■



**The early-epidural group had a significantly shorter time from first analgesia to vaginal birth.**

DR. NAGEOTTE

stetric practitioners should delay the administration of epidural anesthesia in nulliparous women until the cervical dilatation reaches 4-5 cm, and that other forms of analgesia be used until that time," noted Dr. Nageotte, professor of obstetrics and gynecology at the University of California, Irvine. Giving an epidural when the cervix is dilated less than 4 cm has been associated with a higher rate of cesarean delivery.

Investigators at Northwestern University, Chicago, led a recent study of