

# Endometriosis

## OBTAINING RELIEF VIA 'NEAR-CONTACT' LAPAROSCOPY

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**E**ndometriosis is the presence of endometrial tissue in abnormal places. Even though it is visible to the naked eye, it is generally diagnosed by microscopic tissue examination. Ectopic endometrial tissue can be found in various parts of the body such as the lungs, diaphragm, brain, pelvic structures, and the small and large bowel. This article will concentrate on endometriosis of the pelvic structures and the bowels.

### *Etiology*

**S**everal theories have been proposed on the cause of endometriosis, including the reflux menstruation theory developed by John Sampson, MD, in 1920.<sup>1</sup> Reflux menstruation

occurs when menstrual fluid backs up into the fallopian tubes and drips into the peritoneal cavity. The theory assumes that the endometrial cells implant in the cavity and grow. Even though this theory has long enjoyed popularity, it has never been scientifically demonstrated. Another theory postulates that endometrial cells are spread through blood and lymph channels.

David Redwine, MD, a gynecologist at St Charles Medical Center, Bend, Ore, proposes that endometriosis is an unrecognized congenital birth defect.<sup>2</sup> He believes that during fetal development, endometrial cells migrate toward the mullerian ducts (embryonic ducts that develop into the ovaries, uterus, and vagina) to form the uterine lining, and some cells are left behind. These cells



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varying colors and excises areas of the peritoneum containing evidence of endometriosis.

Patient selection is determined through a review of the patient's records. Indications for surgery are

- pelvic pain which may or may not be associated with menstruation, or pelvic pain which may be associated with ovulation, exercise, sexual intercourse, bowel movements, or a pelvic exam,
- previous surgery with a positive diagnosis of endometriosis, or
- continued pain during or following hormonal therapy.

Another less common indication is infertility. As with other therapies such as laser ablation, birth control pill therapy, and danazol treatment, there is a 50% improved fertility rate following the surgical excision of endometriosis.<sup>8</sup>

Contraindications for laparoscopic surgery are rare. Almost all patients undergo laparoscopic examination initially to determine the extent of the disease. If excision through the laparoscope is not possible due to bowel involvement or extensive adhesions, the surgical team proceeds with a laparotomy. According to Dr Redwine's experiences, laparoscopic excision of endometriosis is possible in about 80% of the cases.

In Dr Redwine's current experience, 50% of the patients with endometriosis of the bowel have the disease on the peritoneum overlying the bowel where it can be easily removed. In the remaining patients, 25% have involvement of the abdominal serosa or muscularis and do not require entry into the bowel. Approximately 25% of the patients have endometriosis of the bowel that requires bowel resection.

### *Preoperative Care*

**P**atients with endometriosis come to St Charles Medical Center from throughout the United States. Most women have their

initial contact with the nurse manager via the telephone. The patient's questions are answered, and an information packet containing specific scientific publications on the procedure, lay publications, and information about the medical program is sent. The packet also contains a list of former patients and their telephone numbers for the patient to contact. The patient also may submit her medical records and personal written history for the physician to evaluate. Records may indicate the results of a previous laparoscopic examination, but a laparoscopic examination by the woman's personal physician is not required. A written report of the evaluation is sent to the patient.

When the patient and physician decide that she is a candidate for treatment, the woman completes all preadmission authorizations and interviews and returns them to the physician. This facilitates a smooth admission to the hospital. The patient also must make travel and lodging arrangements, and the physician's staff can help with these arrangements.

The nurse manager visits the patient upon her arrival at her local lodging. The nurse manager conducts an informal discussion of the procedure and identifies any of the patient's special fears or needs. The patient's fears and anxiety seem to peak once she leaves home, and this is an opportune time for nursing intervention.

The manager also determines the degree of disability caused by pain and the medication necessary to manage the pain. Some patients experience a degree of chemical dependency, and they may or may not be aware of their dependency. The chronic pain and the resulting chemical dependency that a patient experiences may create a situation where the patient has difficulty psychologically in moving from illness to wellness. The evaluation of possible chemical dependency is incorporated into the nursing diagnosis.

The patient undergoes a preoperative physical exam at the physician's office the day before



*Fig 1.* The circulating nurse is open and supportive and encourages the patient to express any last-minute concerns.

surgery. The nurse manager answers any questions and reviews the preoperative instructions for bowel prep, explains that the patient must remain NPO after midnight, and tells the patient the time of arrival for the morning of surgery. The nurse also tells the patient that she might experience some pain in the shoulder area postoperatively because the carbon dioxide (CO<sub>2</sub>) administered during the procedure presses on the diaphragm and causes referred pain. The patient then undergoes preoperative laboratory work such as a complete blood count and type and cross-matching at the hospital and picks up bowel prep medications if her endometriosis involves the bowel.

When the patient arrives at the hospital on the day of surgery, the staff nurse verifies her medical history, records her vital signs, and completes the preoperative teaching. The patient dresses for surgery and is transferred to the preoperative holding area. The nurse prepares an intravenous (IV) solution of 1000 mL 5% dextrose in lactated Ringer's solution for the anesthesiologist to

administer. The circulating nurse answers any other questions that the patient may have and verifies the patient's signature on the surgical consent form. The circulator must be open and supportive, encouraging the patient to express last-minute concerns or fears (Fig 1). It also is important that the circulator remember that these patients are frequently chronic pain patients, and they have learned different mechanisms to cope with pain and anxiety such as relaxation and visual imagery techniques. The patient also may use pain-control audiotapes. These techniques often are incorporated into preoperative, intraoperative, and postoperative care.

### *Intraoperative Procedure*

**T**he circulating nurse places the patient in a supine position on the OR bed. The patient is kept comfortable with warmed blankets. The circulating nurse must ensure proper body alignment to prevent nerve or circulatory

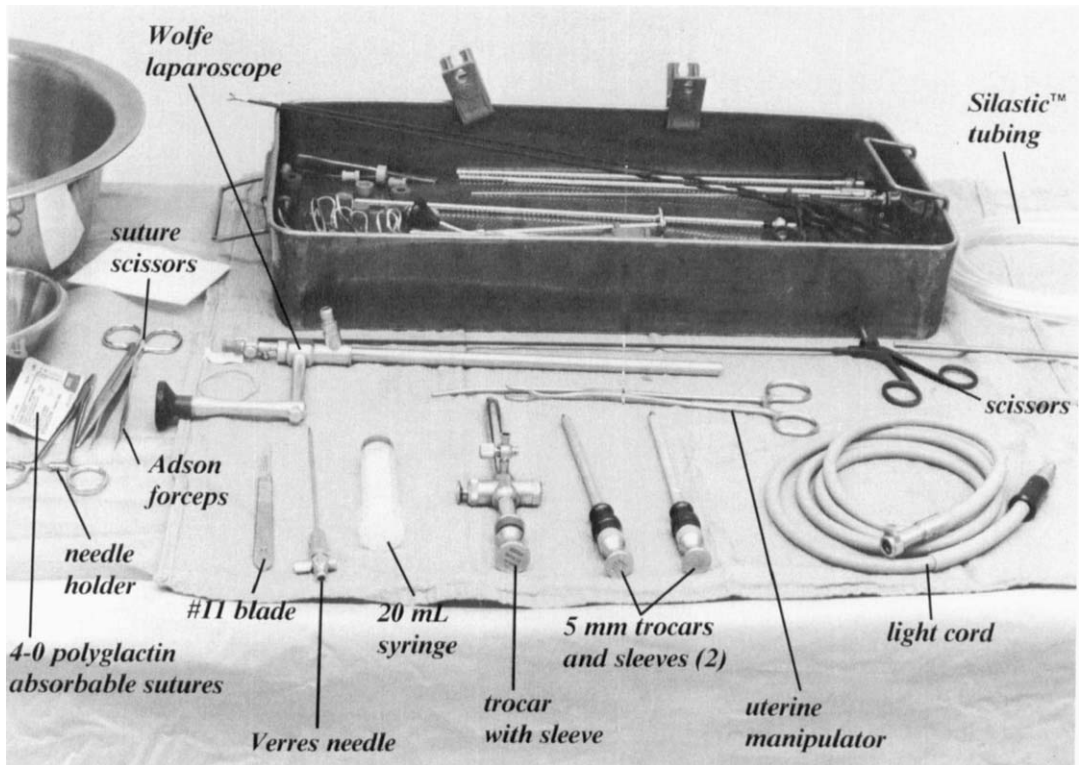


Fig 2. A Wolfe setup for near-contact laparoscopy.

damage caused by improper positioning when the patient is transferred to a low lithotomy position after general anesthesia is administered.

The anesthesiologist induces anesthesia and the patient is transferred to the low lithotomy position. The circulator completes a skin prep for vaginal and laparotomy procedures with povidone-iodine and then drapes the patient for a combined vaginal and laparotomy procedure.

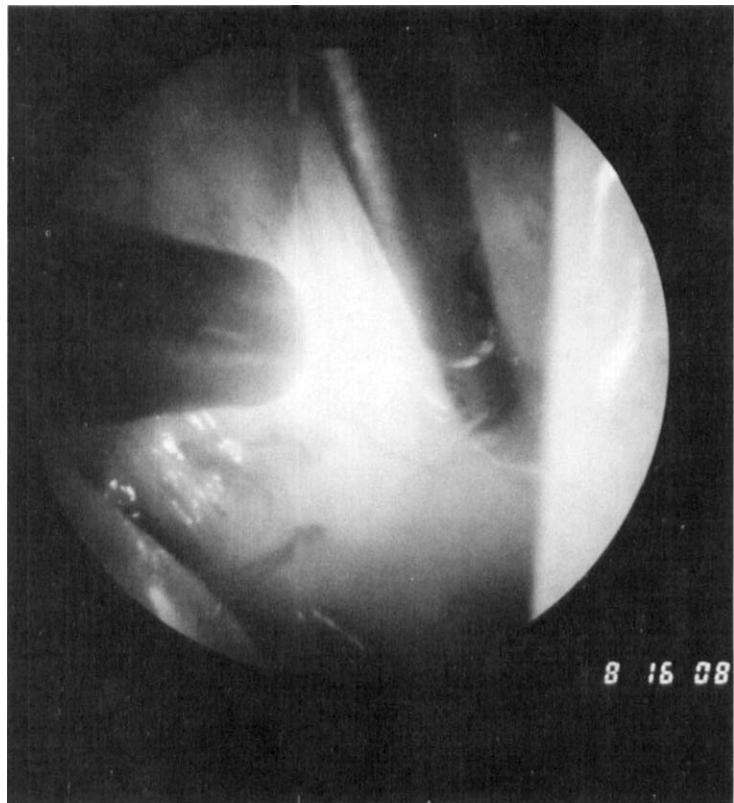
Dr Redwine uses supplies and instrumentation for a triple-puncture laparoscopic technique (Fig 2). A 10 mm laparoscope that accepts a 3 mm scissor and two 5 mm trocars for the suprapubic punctures is the basic instrument. A 5 mm suction/irrigator and a 3 mm grasping forceps are passed through the suprapubic sheaths. A separate suction cannula gives added support to the otherwise flexible forceps.

Using a #11 blade, the surgeon makes a small incision at the inferior margin of the umbilicus. The tissue is raised and tented to allow the surgeon

to insert the Verres needle through the incision and the layers of the abdominal wall and into the peritoneal cavity. The needle is attached to Silastic™ tubing that delivers the CO<sub>2</sub> from the insufflator to achieve a pneumoperitoneum. The surgical team carefully monitors insufflation to prevent overdistention of the cavity and to ensure proper insufflation. When insufflation is complete, the Verres needle is removed.

The surgeon inserts the trocar with sleeve through the abdominal wall into the peritoneal cavity. The tubing from the insufflator is attached to the trocar to maintain insufflation throughout the procedure. The trocar sleeve is left in place when the trocar is removed, and the laparoscope is introduced through the sleeve. The surgeon inserts two additional trocars into the lower quadrants of the abdomen under direct visualization via the laparoscope. The patient is then placed in a Trendelenberg position.

All surfaces of the pelvic cavity are surveyed



*Fig 3. Surfaces of all pelvic structures can be viewed within 1 to 2 cm of the surface via the laparoscope.*

by the surgeon using near-contact laparoscopy before any excision of the disease is attempted (Fig 3). The other members of the surgical team can observe the procedure via a video monitor. It is not possible, however, for the surgeon to use the monitor during the procedure because it does not have the resolution possible by viewing the area with the naked eye. Clear, pale endometrial implants could easily be mistaken as normal peritoneal tissue on the monitor.

The surgeon removes the endometrial implants through secondary lower quadrants trocar sheaths using the grasping forceps inside the suction cannula and the operating scissors. The implants are removed from the field and individually labeled for diagnosis by the pathologist. Postoperatively, the surgeon notes the site of each implant on a pelvic map before the patient leaves the OR (Fig 4). It is not uncommon for the surgeon to excise 15 or more individual implants. Even though the excision of numerous implants is possible,

electrocautery is rarely used. There is little or no bleeding involved in the resection of the implants from the surrounding peritoneal tissue. The average blood loss is 30 mL.

The procedure can last from 1½ hours to five hours depending on the amount of disease present. The surgeon relays progress reports on the patient's condition to a nurse manager who passes the information to the patient's friends and relatives who are in the waiting area.

When the procedure has been completed, the skin is closed with a 4-0 polyglactin absorbable suture, and dressings are applied. The anesthesiologist and the circulating nurse accompany the patient to the postanesthesia care unit (PACU).

### *Postoperative Care*

**P**ostoperative care of the patient with laparoscopic excision of endometriosis is slightly more involved than general lapa-

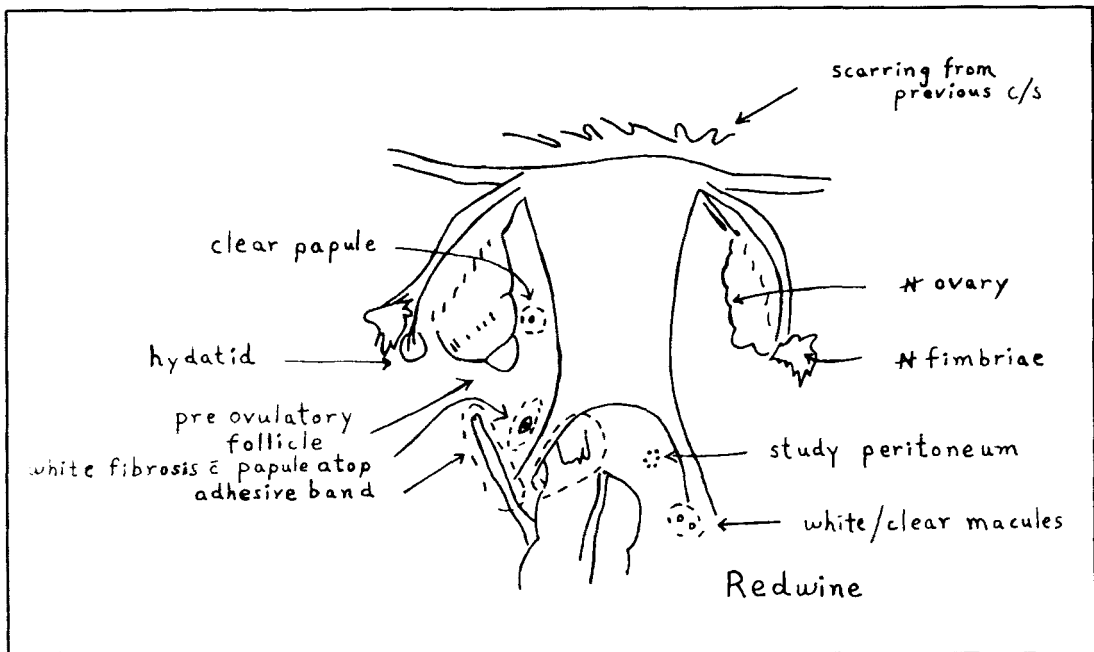


Fig 4. Example of the pelvic map drawn by the surgeon. The surgeon marks each spot where possible endometrial tissue is removed, and he or she notes the presence or absence of anatomical structures (ie, the absence of one ovary).

roscopic surgery because patients frequently exhibit nausea for the first six to eight hours. The patient is given 10 mg prochlorperazine intramuscularly every six hours as needed. The patient may complain of referred pain bilaterally in the shoulder area from the CO<sub>2</sub> insufflation. Even though preoperative instructions by the surgeon and the nurse address this phenomenon, patients are often anxious about the pain they are experiencing. The patient remains in the PACU one to two hours postoperatively and then is transferred to the surgical floor for an overnight stay.

The patient is usually discharged to local housing the morning following surgery. Patients who undergo a laparotomy with bowel wedge resection remain in the hospital for three to seven days depending on the amount of surgery performed. Bowel wedge resection patients may experience depression and tearfulness near the fifth or sixth postoperative day. This is associated with the inconvenience of dealing with a

nasogastric tube while awaiting restoration of bowel function.

As the need for postoperative pain medication decreases, the surgeon must become watchful for symptoms of chemical withdrawal related to the degree of prescription drug usage preoperatively.

The nurse and the surgeon review written discharge instructions with the patient. The following are included in the discharge instructions.

**Incision care.** Patients who do not have dressings that must remain in place may bathe or shower. Patients with dressings that must remain in place are given special instructions and supplies before leaving the hospital.

**Vaginal drainage.** Moderate vaginal bleeding can be expected. The patient is instructed that bleeding should not exceed the amount of discharge experienced during a normal menstrual period, and the patient should not have severe abdominal cramping or changes in bowel habits. The use of douche or tampons is discouraged until

the patient is advised by her physician.

**Diet.** The patient is encouraged to maintain a well-balanced diet and to eat lightly until normal appetite and bowel activity resumes.

**Activity.** The patient is instructed that active daily routines should not be attempted for six weeks postoperatively. The patient may begin low-impact exercising such as walking, swimming, or cycling after six weeks. Strenuous exercise should not be attempted for two months to 2½ months postoperatively. The patient should avoid lifting and straining for six weeks, and sexual intercourse is not advised for five weeks postoperatively.

**Pain management.** The surgeon prescribes pain medication when the patient is discharged from the hospital. Within three or four days of discharge, she should be able to use acetaminophen during the day and the prescribed medication at night. The patient is encouraged to begin a program of stretching or relaxation techniques to ease into daily activities.

**Possible complications.** Occasional postoperative problems arise. The patient is advised to contact her physician immediately if she experiences redness, swelling, drainage, or severe pain in or around the incision site; temperatures over 100°F (38°C); or nausea, vomiting, or diarrhea.

### Summary

Since 1979, Dr Redwine has performed the near-contact laparoscopy for the removal of endometriosis on nearly 400 women. Data collected from Dr Redwine's follow-up studies indicate that 75% of his patients have experienced complete relief of symptoms, and 20% have experienced an improvement in their symptoms from disabling pain to minimal pain. The individualized perioperative care and the high success rate realized with the near-contact technique has attracted women seeking relief from the painful and sometimes debilitating effects of endometriosis. □

### Notes

1. J Sampson, "Peritoneal endometriosis due to the menstrual dissemination of endometrial tissue into the peritoneal cavity," *American Journal of Obstetrics and Gynecology* 14 (November 1927) 422.

2. D B Redwine, "Mulleriosis: The single best fit theory of histogenesis of endometriosis," presented at the World Congress of Gynecologic Endoscopy annual meeting, San Francisco, November 1987.

3. R F Mattingly, J D Thompson, *TeLinde's Intraoperative Gynecology*, sixth ed (Philadelphia: Lippincott Medical, 1985).

4. D B Redwine, "The distribution of endometriosis in the pelvis by age groups and fertility," *Fertility & Sterility* 47 (January 1987) 173-175; D B Redwine, "Age related evolution in color appearance of endometriosis," *Fertility & Sterility* 48 (December 1987) 1062-1063; I A Bresons, F J Cornillie, G Vasquez, *Gonadotropin Down-Regulation in Gynecologic Practice* (New York City: Alan R. Liss, Inc, 1986) 81-102; M C Stripling et al, "Subtle appearance of pelvic endometriosis," *Fertility & Sterility* 49 (March 1988) 427-431.

5. M L Ballweg, "Endometriosis: Looking at the Rubik's Cube from another side," *Overcoming Endometriosis* (New York City: Congdon & Weed, Inc, 1987) 220-227; Redwine, "Age related evolution in color appearance of endometriosis," 1062-1063.

6. Redwine, "The distribution of endometriosis in the pelvis by age groups and fertility," 174.

7. Ballweg, "Endometriosis: Looking at the Rubik's Cube from another side," 220-227.

8. D B Redwine, MD, interview by Nancy F. Petersen, tape recording, Bend, Oregon, 10 April 1988.

### Suggested reading

Petersen, N F; Hasselbring, B. "Endometriosis reconsidered." *Medical Self Care* 40 (May 1987) 30-31, 53-55.

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