

# Cesarean Section Scar Endometriosis

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Endometriosis is the presence of functional endometrial tissue outside the uterine cavity.<sup>1</sup> When this tissue occurs in a circumscribed mass, it is referred to as an endometrioma.<sup>2</sup> Although endometriosis is usually a pelvic disease, it can involve other sites. Reported here is a case of endometriosis in a Cesarean section scar. A brief discussion of the current literature and management strategies follow.

## Case Report

A 23-year-old mother of 1 child came to the clinic complaining of fluid draining from a mass in her lower abdomen. She had first noticed a lump in her lower abdominal wall 5 years earlier, 3 months after she underwent a Cesarean section. The Cesarean section was performed at term for cephalopelvic disproportion. The mass in her healed scar grew slowly. She also noted pain and an increase in the mass just before and during her menses. The patient denied abdominal trauma, additional abdominal surgery, pelvic pain, dysmenorrhea, or dyspareunia.

That morning the patient noted dark fluid draining from her lower abdominal wall. A 3-mm skin opening was noted over the left lateral edge of a low transverse abdominal scar. A 5-cm firm, tender mass was palpated below the skin opening. The wound was probed, revealing a calcified multiloculated mass filled with dark, chocolate-colored fluid. Findings on pelvic and rectal examinations were normal, and results of laboratory tests and abdominal films were also normal. A drain was inserted into the wound, the patient was given oral cefadroxil, and a surgeon was consulted.

The diagnosis of endometrioma was made at consultation. A preoperative computed tomographic (CT) scan showed no evidence of extension of the mass into the pelvis. The CT scan outlined a 5-cm

mass in the subcutaneous tissues of the abdominal wall extending only to the fascia and rectus muscle.

The mass was excised completely at surgery. A review of the surgical specimen in the pathology laboratory revealed a rubbery, yellow, inflamed mass with hemosiderin deposits in a thick, fibrous capsule. The microscopic analysis showed the mass was composed of benign secretory-phase endometrial glands and stroma mixed with fibrous connective tissue and infiltrates of chronic inflammatory cells and hemosiderin-laden macrophages. The patient had an uneventful recovery.

## Discussion

The incidence of endometriosis is estimated at 5 to 20 percent of all women of reproductive age.<sup>1</sup> The most common site for endometriosis is on or within the ovary,<sup>1</sup> although lesions frequently are found throughout the pelvis. Distant metastases of endometriosis are uncommon, but they have been reported in the bladder, lungs, other organs, and in the extremities.<sup>2-5</sup>

Endometriosis of the skin and subcutaneous tissues usually occurs at the umbilicus or in abdominal scars.<sup>6,7</sup> Cutaneous endometriosis can occur without earlier surgery<sup>6</sup> but is commonly associated with uterine or tubal operations.<sup>8</sup> Scar endometriosis has been reported after inguinal hernia repair,<sup>6</sup> transabdominal hypertonic saline injection,<sup>9</sup> and amniocentesis.<sup>10</sup> Endometriosis at the site of the episiotomy scar is rare<sup>11</sup> and occurs more frequently in women undergoing curettage after delivery.<sup>12,13</sup>

The development of an endometrioma in a Cesarean scar has been described as an infrequent event.<sup>2,5</sup> The exact incidence is unknown, although one report suggests a rate of 0.03 percent following term or near-term Cesarean sections.<sup>13</sup> Another report shows an incidence of more than 1 percent.<sup>5</sup> Only 17 cases of Cesarean scar endometriosis were reported between 1956 and 1989.<sup>5</sup>

There are two major theories for the development of endometriosis in surgical scars.<sup>5-7,9</sup> The transportation theory proposes the direct seeding of uterine endometrial tissue into a scar, and the

Submitted, revised, 7 June 1993.

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occurrence of scar endometriosis following uterine or tubal surgery supports this theory. The metaplastic theory alleges that nonendometrial cells have the potential to change into endometrial tissue.<sup>6,9</sup> This theory is used to explain cutaneous endometriosis after inguinal herniorrhaphy or the occurrence of endometriosis not associated with previous abdominal surgery. Steck and Helwig<sup>7</sup> suggest a combination of the two theories, that transported endometrial cells stimulate imitative cellular replication.

It has been suggested that during Cesarean section, wiping the endometrium with a moist or dry sponge after delivery of the placenta and before closure of the uterine incision could deliver endometrial tissue to the abdominal wound.<sup>5</sup> Because early pregnancy endometrial tissue might have a greater potential for viability when transported,<sup>5,6</sup> caution has been urged when sponging the uterine cavity at preterm Cesarean sections.<sup>5</sup> Careful surgical technique to avoid spillage of decidual tissue into the wound edges might reduce the rate of scar endometriosis.<sup>13</sup>

Scar endometrioma is suggested by a tender mass that fluctuates with menses in the abdominal incision of a parous female.<sup>5,8</sup> The differential diagnosis includes metastatic disease, hernia, abscess, lipoma, sarcoma, suture granuloma, lymphoma, or hematoma. Cyclic pain related to menses is nearly pathognomonic, but this symptom is often absent.<sup>2,5,8</sup> Concurrent pelvic endometriosis is reported at 24 percent in one review.<sup>13</sup> A laparoscopy was not performed in our patient because she lacked pelvic symptoms, and her CT findings were negative.

Computed tomography is used for the diagnosis and preoperative evaluation of intra- and extra-abdominal endometriosis.<sup>8,14</sup> Ultrasonic scanning can miss endometriomas,<sup>15</sup> which CT or magnetic resonance imaging (MRI) would show.<sup>15,16</sup> The CT scan was useful in the care of this patient, both to outline the extent of the endometrioma and to exclude pelvic involvement.

As reported in this patient, endometriomas often are filled with thick chocolate-colored material.<sup>1</sup> Endometriomas also frequently have fibrous walls densely adherent to adjoining structures.<sup>1,2,5,6</sup> Draining and bleeding from an endometrioma are believed to be late manifestations, often associated with a fistulous tract.<sup>5</sup>

The treatment of cutaneous endometriosis is complete surgical excision. Wide excision includ-

ing adjacent fascia or skin has been advocated to minimize the risk of recurrence.<sup>8,13</sup> Hormonal treatments for scar endometriosis, including danazol and progesterone, have been only partially successful and are not generally recommended.<sup>5,8,13</sup> The postoperative recovery is usually unremarkable, and fertility is maintained.

Physicians providing health care to women should become familiar with scar endometriosis. Awareness of the possibility of endometriosis developing in a Cesarean section scar might lead to higher detection and reporting of this condition.<sup>5</sup>

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