



## A CASE REPORT

### POSTOPERATIVE ENDOMETRIOSIS OF ABDOMINAL WALL IN A YOUNG WOMAN

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Women with chronic, cyclical abdominal wall pain after gynecologic surgery may present in the plastic surgeon's office requesting body contouring. We present one such case in which an abdominal wall endometriosis (AWE) was found. Resection of the focus of endometriosis with the abdominal panniculus resulted in symptomatic cure for the patient. Plastic surgeons should be aware of the association of endometriosis with chronic pelvic/abdominal pain. Furthermore, suspicion of abdominal wall endometriosis should be entertained when patients present with chronic intermittent or cyclical abdominal wall pain after surgery of the pelvis or abdomen, especially after gynecologic or obstetric procedures.

An endometrioma is a solitary, non-neoplastic, well-circumscribed mass containing endometrial tissue and often blood. The presentation may be varied and patients may or may not have a history of endometriosis. Larger masses may be palpated on physical examination or present as chronic pelvic or abdominal pain [Banks K., 2003]. The majority of cases occur within the pelvis. However, atypical endometriomas of the intestines, thorax, and abdominal wall have been documented [Abbo L. et al., 1995; Gomez-Rubio M. et al., 1997; Marranci M. et al., 2000; Yuen J. et al., 2001; Bumpers H. et al., 2002].

Abdominoplasty is a procedure of increasing frequency rising in parallel with the rate of gastric bypasses [Chandawarkar R., 2006; Sanger C., David L., 2006]. Within this patient population many have had previous gynecologic surgery or invasive procedures such as cesarean section or hysterectomy. Prior gynecologic surgery is

reported in a significant number of patients with abdominal wall endometriosis [Rayatt S., Wilson G., 1999; Lai C. et al., 2001; Sari A. et al., 2003; Velez S. et al., 2004; Ostric S. et al., 2006]. Some studies have reported the incidence of postsurgical AWE as high as 3.5% depending on the nature of the gynecologic surgery [Blanco R. et al., 2003]. The cases of spontaneous abdominal wall endometriosis, i.e. without prior surgery, are also described [Ramsanahie A. et al., 2000; Ideyi S. et al., 2003; Parra P. et al., 2006]. Therefore, before performing an abdominoplasty, the plastic surgeon must be aware of the possibility of abdominal endometriosis in a patient with prior gynecologic surgery and chronic idiopathic abdominal pain.

#### The Case Description

A 33-year-old woman with a history of previous cesarean section in 2002 presented to plastic surgeon with the main complain of painful, edematous, nodular lesion of the postoperative scar on the abdominal wall. The patient developed intermittent abdominal wall pain after her cesarean section. She underwent abdominoplasty in 2007, after which a round, firm nodule was removed from the thickness of the abdominal wall. The microscopic examination of the nodule revealed a typical endometrial mucosal stroma with endometrial glands (Figure).

The abdominoplasty was completed without incident and the patient was discharged home on postoperative day 3 and recovered fully without complication.

Further questioning during the postoperative visit revealed that her abdominal pain was cyclical (corresponding to her menses), a fact that had gone unnoticed by all of the treating physicians. To date, she has not complained of abdominal pain since her abdominoplasty and excision of the endometriosis focus.

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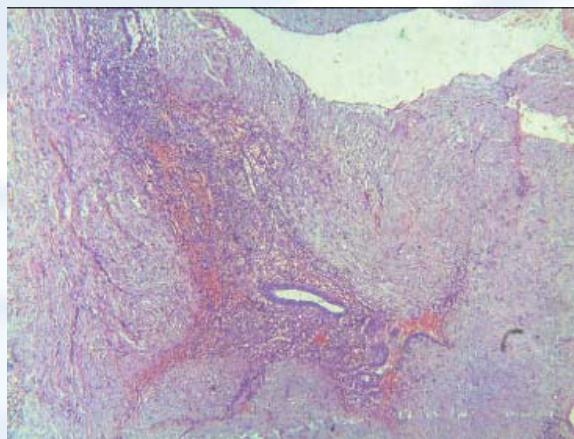


Figure. Three components of endometriosis can be seen in this slide: endometrial glands, endometrial stroma and foci of hemorrhage. Surrounding normal fibrous tissue. Hematoxylin-eosin. x 60

### Discussion

Endometriosis refers to the presence of endometrial glands and stroma outside the endometrial cavity and uterine musculature. These ectopic endometrial implants are usually located in the pelvis but can occur almost anywhere in the body. The disease can be associated with many distressing and debilitating symptoms. However, it is most often asymptomatic, being incidentally discovered at laparoscopy or postmortem examination. Despite numerous studies, considerable controversy remains regarding the incidence, pathogenesis, natural history, and optimal treatment of this disorder.

The prevalence of endometriosis in the general population is not known. Estimates vary depending on the population studied (symptomatic or asymptomatic) and the method of diagnosis (clinical vs. surgical). The prevalence is similar in blacks and whites when controlling for socioeconomic status [Houston D., 1984]. Heritability may also play a role [Simpson J., Bischoff F., 2002]. The growth and maintenance of endometriotic implants are dependent on the presence of ovarian steroids. As a result, endometriosis occurs during the active reproductive period and is rare in pre- or postmenarchal females.

Several theories have been proposed to explain

the pathogenesis of endometriosis. The implantation or retrograde menstruation theory, as described by J. Simpson and F. Bischoff [Simpson J., Bischoff F., 2002], proposes that endometrial tissue from the uterus is shed during menstruation and transported retrograde through the fallopian tubes, thereby gaining access to and implanting on pelvic structures [Seli E. et al., 2003]. The direct transplantation theory is the probable explanation for endometriosis that develops in episiotomy, cesarean section, and other scars after surgery. This is likely how our patient developed endometriosis. The dissemination theory proposes endometrial cell migration through lymphatic and blood vessels leading to locations outside the pelvis [Ichimiya M. et al., 1998]. The coelomic metaplasia theory hypothesizes that the coelomic (peritoneal) cavity contains uncommitted progenitor cells or cells capable of differentiating into endometrial tissue [Matsuura K. et al., 1999]. This theory is based on embryologic studies demonstrating that all pelvic organs, including the endometrium, are derived from cells lining the coelomic cavity. The most recently proposed theory is the cellular immunity theory, which suggests that alterations in cell-mediated and humoral immunity allow ectopic endometrial cells to proliferate [Ulukus M., Arici A., 2005].

The most common sites of endometriosis, in decreasing order of frequency, are the ovaries, anterior and posterior cul-de-sac, posterior broad ligaments, uterosacral ligaments, uterus, fallopian tubes, sigmoid colon and appendix, and round ligaments. Other sites are less commonly involved and include the vagina, cervix, rectovaginal septum, cecum, ileum, inguinal canals, abdominal or perineal scars, ureters, urinary bladder, and umbilicus. Exceptional cases of endometriosis are reported in the breast, pancreas, liver, gallbladder, kidney, urethra, extremities, vertebrae, bone, peripheral nerves, lung, diaphragm, and central nervous system.

The common symptoms of endometriosis include pelvic pain (which may be chronic but is more often severe during menses or ovulation), dysmenorrhea, deep dyspareunia, cyclical bowel

or bladder symptoms, abnormal menstrual bleeding, infertility, and chronic fatigue. However, these symptoms are also present in other gynecologic disorders (pelvic inflammatory disease) or irritable bowel syndrome, which often results in diagnostic delay. Alternatively, many women with endometriosis are completely asymptomatic.

Physical findings in women with endometriosis are variable and depend on the location and size of the implants. When present, the most common sign is tenderness when palpating the posterior fornix.

The optimal way to diagnose endometriosis is by direct visualization of the implant(s). Initially, ultrasonography may identify a suspicious mass but is not sensitive enough for the diagnosis of endometriosis. Laparoscopy is the gold standard for diagnosis because endometriosis is located primarily on the pelvic organs. Endometriosis typically appears as superficial powder-burn lesions on the ovaries, serosal surfaces, and peritoneum. The lesions are black, dark brown, or bluish puckered plaques, nodules, or small cysts containing old hemorrhage surrounded by a variable extent of fibrosis. However, endo-

metriotic lesions can have a variety of shapes and colors, including clear, red, blue-black, yellow, brown, or white. The lesions may be microscopic or macroscopic or appear as a peritoneal window. The myriad of appearances increase the likelihood of observational error. Imaging studies are rarely helpful for diagnosis or determining extent of disease because they lack adequate resolution for visualizing adhesions and superficial peritoneal/ovarian implants.

In summary, patients who present to the plastic surgeon for evaluation of body-contouring surgery require a detailed history and physical examination that includes a review of systems capable of detecting complaints related to abdominal or pelvic pain. The plastic surgeon should be aware that endometriosis is a possible etiology for these complaints. Additionally, patients with previous pelvic or intra-abdominal surgeries such as those who have undergone bariatric procedures may be at increased risk for endometrioma outside of the peritoneal cavity. Complaints related to cyclical abdominal wall pain associated with menses should raise suspicion for possible endometrioma.

## References

1. *Abbo L., Segre D., Liberatore E. et al.* Perforated endometriosis of the sigmoid. Report of a case. *Minerva Chir.* 1995; 50: 393–397.
2. *Banks K.P.* Subcutaneous endometrioma as an unexpected cause of chronic abdominal pain. *Am. J. Roentgenol.* 2003; 181: 1157.
3. *Blanco R.G., Parithivel V.S., Shah A.K. et al.* Abdominal wall endometriomas. *Am. J. Surg.* 2003; 185: 596–598.
4. *Bumpers H.L., Butler K.L., Best I.M.* Endometrioma of the abdominal wall. *Am. J. Obstet. Gynecol.* 2002; 187: 1709–1710.
5. *Chandawarkar R.Y.* Body contouring following massive weight loss resulting from bariatric surgery. *Adv. Psychosom. Med.* 2006; 27: 61–72.
6. *Gomez-Rubio M., Fernandez R., de Cuenca B. et al.* Intestinal endometriosis as a cause of chronic abdominal pain leading to intestinal obstruction. *Am. J. Gastroenterol.* 1997; 92: 525–526.
7. *Houston D.E.* Evidence for the risk of pelvic endometriosis by age, race and socioeconomic status. *Epidemiol. Rev.* 1984; 6: 167–191.
8. *Ichimiya M., Hirota T., Muto M.* Intralymphatic embolic cells with cutaneous endometriosis in the umbilicus. *J. Dermatol.* 1998; 25: 333–336.
9. *Ideyi S.C., Schein M., Niazi M. et al.* Spontaneous endometriosis of the abdominal wall. *Dig. Surg.* 2003; 20: 246–248.

10. *Lai C.S., Lin T.M., Tsai C.C. et al.* Endometrioma in a cesarean section scar—a case report. *Kaohsiung J. Med. Sci.* 2001; 17: 381–384.
11. *Marranci M., Dianda D., Gattai R. et al.* Umbilical endometriosis: report of a case and review of the literature. *Ann. Ital. Chir.* 2000; 71: 389–392.
12. *Matsuura K., Ohtake H., Katabuchi H. et al.* Coelomic metaplasia theory of endometriosis: evidence from in vivo studies and an in vitro experimental model. *Gynecol. Obstet. Invest.* 1999; 47(suppl 1): 18–20.
13. *Ostic S.A., Martin W.J., Kouris G.J.* Abdominal wall endometrioma found during abdominoplasty. *Aesthetic Plast. Surg.* 2006; 30: 249–250.
14. *Parra P.A., Caro J., Torres G. et al.* Primary endometriosis of the abdominal wall: an entity to be included in the differential diagnosis of abdominal wall masses. *Cir. Esp.* 2006; 79: 64–66.
15. *Ramsanahie A., Giri S.K., Velusamy S. et al.* Endometriosis in a scarless abdominal wall with underlying umbilical hernia. *Ir. J. Med. Sci.* 2000; 169(1): 67.
16. *Rayatt S., Wilson G.* Endometrioma of the abdominal wall following combined abdominoplasty and hysterectomy: case report and review of the literature. *Ann. Plast. Surg.* 1999; 42: 110.
17. *Sanger C., David L.R.* Impact of significant weight loss on outcome of body-contouring surgery. *Ann. Plast. Surg.* 2006; 56: 9–13.
18. *Sari A., Latifoglu O., Memis L. et al.* Incisional endometrioma. *Plast Reconstr Surg.* 2003; 112: 712–713.
19. *Seli E., Berkkanoglu M., Arici A.* Pathogenesis of endometriosis. *Obstet. Gynecol. Clin. North Am.* 2003; 30: 41–61.
20. *Simpson J.L., Bischoff F.Z.* Heritability and molecular genetic studies of endometriosis. *Ann. NY Acad. Sci.* 2002; 955: 239–251.
21. *Ulukus M., Arici A.* Immunology of endometriosis. *Minerva Ginecol.* 2005; 57: 237–248.
22. *Velez S.E., Piccinni D.J., Caminos S. et al.* Abdominal wall endometriosis: case report. *Rev. Fac. Cien. Med. Univ. Nac. Cordoba.* 2004; 61: 44–47.
23. *Yuen J.S., Chow P.K., Koong H.N. et al.* Unusual sites (thorax and umbilical hernial sac) of endometriosis. *J. R. Coll. Surg. Edinb.* 2001; 46: 313–315.