# Endometriosis in gluteus muscle with surgical implantation

## A case report

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Intrapelvic endometriosis is a fairly common condition affecting women during their reproductive years. Extrapelvic disease is, however, very rare. We report a case where an endometrioma was found in the body of the gluteus minimus muscle, and endometrial tissue was implanted in the wound at the time of excision.

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## Case report

A 36-year-old white female presented as an outpatient complaining of a 2-year history of right buttock pain that had been getting progressively worse. It was constant and had no aggravating or relieving factors, although she initially found that when she held her leg in external rotation that she was more comfortable. During the course of investigation, this developed into a fixed external rotation deformity. She had had two pregnancies, one of which resulted in a spontaneous abortion, and the other was normal apart from necessitating a cesarean section for delivery. The remainder of her gynecologic and general medical history was unremarkable.

A physical examination was normal apart from a right antalgic gait. She had areas of tenderness lateral to the pubic tubercle and posterior to the hip. Her hip movements were as follows: flexion 0°–100°; abduction 0°–20°; adduction 0°, and painful in the attempt; external rotation initially 0°–10°. Straight-leg raising was 80° bilaterally, with no evidence of nerve-root irritation; and there was no neurologic deficit.

Radiographs of the hip were normal; a full blood count, urea and electrolytes, urate, bone profile, and rheumatoid factor were all normal; the ESR was raised at 25 mm/hour. During the next 3 years, she had two myelograms done that showed a minimal central disk prolapse at spaces L3-4 and L4-5. Physiotherapy, examination and manipulation under anesthesia, and depomedrone and bupivicaine injections were without benefit. Her hip was then explored through an anterior Smith-Peterson approach, but no abnormality was found macroscopically or on histologic examination of biopsies of the synovium and acetabulum. Femoral intraosseous pressures and an intraosseous venogram were normal.

She continued to deteriorate, and she had to discontinue her work and horseback riding. An initial CT scan of her hips was normal, but the second scan done to a higher level showed wasting of the right glutei and a radiolucent area in the gluteus minimus muscle (Figure 1). Insertion of a needle into this area reproduced her pain, but the needle biopsy showed only normal muscle.

The hip was then explored again by a posterior approach. The sciatic nerve was normal. The short external rotators were fibrotic and shortened. After their division, it was possible to internally rotate the leg to neutral. The inferior border of the gluteus minimus muscle and adjacent periosteum of the ilium was thickened and appeared to have undergone cystic degeneration. A smooth yellow mass of tissue was arising from the gluteus minimus, and extended below its inferior border. This was completely excised, and biopsies were taken from the degenerated areas. The histologic preparations showed multiple foci of endometrial stroma with hemosiderin pigment due to an old hemorrhage and endometrial glands containing granular debris within large lumina. Small foci of calcification indicated the long-standing nature of the condition. All the morphologic aspects were compatible with the diagnosis of endometriosis.

The patient was symptomatically cured by this operation, and she was able go back to work within 3 months. When reviewed at 6 months postoperatively, she had noticed that the posterior flap of her scar was

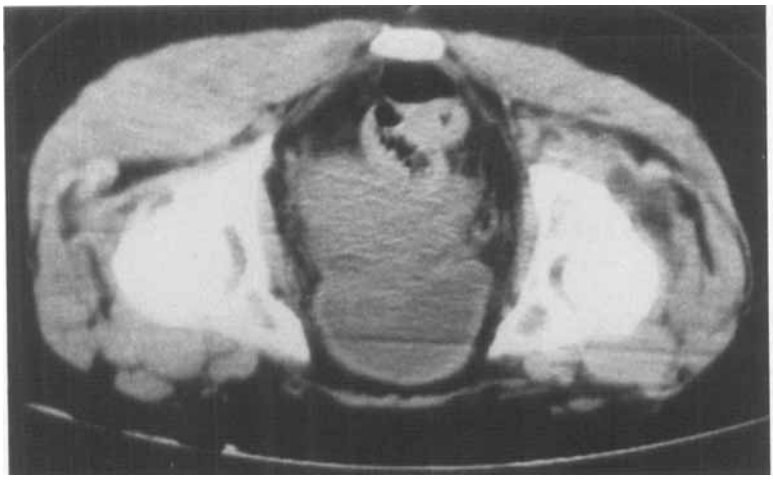

Figure 1. CT scan of the hip joints. There is marked atrophy of the right gluteal muscles and a radiolucency in the region of the right gluteus minimus muscle.

swelling and felt uncomfortable in synchronization with her menses. She was reviewed by a gynecologist, who started her on a progesterone-only contraceptive pill, which has ameliorated her problem. She preferred not to have further diagnostic procedures or surgery done unless the lump again becomes symptomatic.

## Discussion

Endometriosis affects between 4 percent and 17 percent of women during their reproductive period (Tindall 1987). It is characterized by the presence of nests of endometrial glands and stroma in abnormal locations. It typically affects women who are infertile or subfertile, and in their 4th decade of life (Scott and Te Linde 1950). In the majority of cases, the endometriosis occurs in the pelvis or abdomen. Very rarely does it occur in an extraabdominal location; and of those that do, 80 percent are right-sided (Jiminez and Miles 1960, Hibbard et al. 1981). The etiology remains obscure, and there are three currently accepted theories: retrograde menstruation, serosal metaplasia and metastasis (Tindall 1987). The endometrioma has no capsule, and it invades adjacent tissue planes. Recurrent rupture of blood-filled cysts leads to chronic inflammation, fibrosis, and calcification (Fox and Buckley 1984). While the cyclic pattern of symptoms is pathognomonic, it is not always present; and even with retrospective questioning, at no time was our patient aware of any relationship between her pain and menstruation.

Cyclic sciatica due to endometriosis of the sciatic nerve was first described by Head et al. in 1962. They noted the presence of an abnormal pouch of peritoneum extending down with the sciatic nerve through the greater sciatic notch, the "pocket sign." The majority of remaining cases of extremity endometriosis occur in the groin or anteromedial aspect of the thigh, presumably in relation to the round ligament of the uterus (Strasser and Davis 1977, Hibbard et al. 1981, Pellegrini et al. 1981). No other patterns of occurrence could be found in the literature. Isolated cases have been described of endometriomas in the femoral vein at the saphenous opening (Recalde and Majmuder 1977), deep to the vastus lateralis muscle (Nunn 1949, Gitelis et al. 1985), in the hamstring compartment of the thigh (Schlicke 1946, Giangarra et al. 1987), surrounding the common peroneal nerve deep to the lateral head of the gastrocnemius muscle (Patel et al. 1982), and in relation to the forearm muscles (Biebl 1938, Navratil 1939). In only 1 of these cases was the endometrioma embedded in and surrounded on all sides by muscle (Giangarra et al. 1987). It is well known that endometrial tissue can be transplanted to surgical wounds during cesarean section, amniocentesis, and episiotomy (Vincent and Mittelstaedt 1985). The transplantation to an extremity wound following local excision of an endometrioma has not previously been reported. We were not able to obtain a histologic diagnosis of the swelling in our patient's operation scar, but the cyclic nature of her symptoms and their response to hormonal manipulation make it almost certain that the swelling was due to an endometrioma caused by surgical implantation. Complete surgical excision would be the curative treatment, but hormonal suppression may provide long-term relief of symptoms (Fox and Buckley 1984).

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