CASE REPORT

Laparoscopic excision of round ligament endometrioma

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SUMMARY

A 14-year-old female patient consulted due to 4 months of recurrent right pelvic pain during her menstrual period. Sonography revealed a 35 mm haemorrhagic right ovarian cyst, initially treated with hormone therapy and oral analgesics with no response. Surgery was indicated due to growth on sonography control and no response to medical treatment. Laparoscopy showed a 7 cm leiomyomatous-like mass arising from the right round ligament that was extracted en bloc without rupture with right salpingectomy and ovarian preservation. The histopathological examination confirmed the diagnosis of round ligament endometrioma with no atypia. The patient presented an uncomplicated postoperative course and was discharged home 48 hours after surgery. Hormonal contraceptives were initiated after the histopathological confirmation; the patient remains asymptomatic at 1-year follow-up.

Figure 1 Abdominal sonography. Right ovarian fluid formation measuring 35 mm in diameter, a little heterogeneous with a thick wall and avascular, located in the centre of the ovary.

BACKGROUND

Round ligament endometriosis can be easily misdiagnosed in cases of deep infiltrating endometriosis, but few cases have been reported of isolated cyst of similar size (5 cm).

To our knowledge, this case illustrates that endometriosis must be included in all patients with catamenial chronic pain and the recommendation to perform surgery in centres with experience in advanced laparoscopy.

CASE PRESENTATION

We report a case of a 14-year-old female patient consulted because of a recurrent right pelvic pain that started 4 months ago during her menstrual period that limited her normal activities. Normal menarche was started at the age of 12 with regular cycles. Sonography revealed a 35 mm haemorrhagic right ovarian cyst; the patient was initially treated with hormone therapy and oral analgesics with no response. Sonographic control 3 months after showed the cyst had increased to 50 mm with no associated signs of malignancy (**figure 1**). Due to the pain persistence and cyst growth, surgery was indicated. A laparoscopic exploration was indicated with the intention to perform a cystectomy. No inguinal lymph nodes or inguinal hernias were identified prior to surgery.

A laparoscopic approach showed the presence of a 7 cm leiomyomatous-like mass arising from the right round ligament that refused the uterus to the left pelvis; it was mobile on the surface plane but

firmly fixed in depth without progression towards the inguinal canal (**figure 2**). Millimetric endometriosis implants were found and cauterised with bipolar grasp in the left posterior parametrium.

The cyst was extracted en bloc without rupture, allowing a complete excision with right salpingectomy and ovarian preservation. Gentle manoeuvres and dissection were needed to avoid damage to nearby structures found firmly attached, such as the bladder, left internal iliac vein and artery and left ureter (**figure 3**). No intra-abdominal drain was left.

Macroscopic examination of the surgical specimen showed an ovoid shape nodule with smooth outer surface (**figure 4**). The histopathological examination showed a 7 cm long and 160 g nodule with smooth outer surface and serous coating. When cut, it was centred by a cystic formation with haemorrhagic content. The wall was 1–1.5 cm thick, firm and fasciculated. Sections showed the presence of a central lumen with cylindro-cubic border associated with cytogenic chorion. The wall

Figure 2 Composed laparoscopy image. Mass arising from the right round ligament refusing the uterus to the left pelvis.

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Figure 3 Laparoscopic image after en bloc resection with right salpingectomy. Uterus to the left pelvis.

consisted entirely of a fasciculated smooth muscle, disproved from small endometriotic cysts, and numerous patches of hemosiderin-tattooed histiocytes (figures 5 and 6). The final diagnosis concluded of round ligament endometrioma with no cellular atypia and complete resection.

The patient presented an uncomplicated postoperative course and was discharged home 48 hours after surgery. Treatment with analgesic treatment was continued with oral contraceptive therapy after the histopathological confirmation; the patient remained asymptomatic at 1-year follow-up.

OUTCOME AND FOLLOW-UP

The patient presented an uncomplicated postoperative course and was discharged home 48 hours after surgery. Treatment with analgesic treatment was continued with hormonal contraceptive after the histopathological confirmation; the patient remained asymptomatic at 1-year follow-up.

DISCUSSION

Endometriosis is a common benign gynaecological disorder. First described in 1860 by Von Rokitansky, endometriosis is defined as the presence of endometrial glands and stroma outside of the endometrial cavity. It is a hormonally dependent disease found almost exclusively in women in reproductive age and may

Figure 4 Macroscopic image of the cyst. The nodule measures 7 cm long axis. When cut, it is centred by a cystic formation with haemorrhagic content. The wall is thick, firm and fasciculate 1 to 1.5 cm thick.

Figure 5 Endometriotic cysts surrounded by cytogenous chorion and smooth muscle layer (HE, x10).

develop anywhere within the pelvis and on other extrapelvic peritoneal surfaces. Most commonly, it is found in the dependent areas of the pelvis as the pelvic peritoneum, ovary, rectovaginal pouch and uterosacral ligaments. Less frequently, it can be found in the rectovaginal septum, ureter or surgical scars. Common and typical symptoms include chronic pelvic catamenial pain and infertility, although women with endometriosis may be asymptomatic. In adolescents, endometriosis is often atypical and diagnosed at early stages.

Ultrasound (US), CT and MR imaging can be used to elucidate the nature of the mass. Doppler US will show a hypoechoic mass with no flow, and MR can be more accurate demonstrating old haemorrhagic content in the cyst.¹ Round ligament endometriosis is rarely found isolated and usually can be often neglected while performing surgery for deep infiltrating endometriosis (DIE).^{2,3} They can be found in the pelvic organs or even in the inguinal area if the tissue progresses through Nuck's canal and can be easily mistaken as a inguinocrural hernia or lymphadenopathy.⁴⁻⁷

In the general context of endometriosis, adenomyoma and endometrioma are special forms that are distinguished by their pseudotumoural, nodular character and their neat limits. These attributes are not those of classical endometriosis, which is

Figure 6 Siderophages coloured in blue (Perls, x10 and x20).

Learning points

- Endometriosis is a hormonally dependent disease found almost exclusively in women of reproductive age.
- Surgery is indicated when endometriomas cause pain or mass effect and do not respond to medical treatment.
- Round ligament endometriosis can often be neglected while performing surgery for deep infiltrating endometriosis.
- Most cases of round ligament endometriosis are located on the right side.

usually poorly delineated and multifocal.⁸ In our case, the lesion was almost a rudimentary uterus with a particularly well-structured smooth muscle wall and endometrial gills lining the central lumen (figures 5 and 6). In the classic forms of endometriosis, the muscle is more fasciculated and disorganised.

The goals for endometrioma treatment are symptom relief, prevent complications due to adnexal mass such as torsion or rupture, fertility improvement and exclude malignancy. Even though ovarian surgery can reduce ovarian reserve,⁹ surgery is indicated when endometriomas cause pain or mass effect and do not respond to medical treatment.¹⁰ Cystectomy is preferable to cyst drainage or cyst wall ablation due to their high recurrence rates.¹¹

Oral contraceptive treatment is generally started with oestro-progestative drugs to block ovulation and reduce pain. Continuous progestational drugs such as chlormadinone acetate or norgestrel acetate are used in second-line therapy. Analogues such as triptorelin can be used for a short period of time, especially postoperatively.^{12–14} Women surgically treated for endometriosis symptoms should be treated postoperatively in order to prevent recurrence, unless pregnancy is being attempted.¹⁵

Endometriosis of the round ligament is associated with groin hernias in 40% of cases, mostly inguinal. Most cases of round ligament endometriosis are located on the right side, maybe due to the clockwise intraperitoneal fluid circulation, in which sigmoid colon may play a protective role, avoiding direct extension of the endometrial tissue.¹⁶ There are few reports of intrapelvic endometriosis involving only the round ligament. Although the prevalence of round ligament endometriosis is not as high as in other surrounding structures, it can have clinical implications, especially in postoperative symptom persistence

and quality of life when not correctly identified during surgical extraction in case of DIE. In our case, no hormonal contraceptives were administered after surgery due to the complete resection of an isolated implant.

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