Unusual association of diseases/symptoms

Lipoleiomyoma

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A 56-year-old postmenopausal patient presented with acute exacerbation of chronic pelvic pain to the gynaecological ward. Her pelvic pain was dull, grinding and constant with radiation to lower back. There were no bowel problems like per rectal bleeding, constipation or diarrhoea. She had two children. On examination, 12 to 14 week size mass was palpated in her abdomen which was slightly tender. Ultrasound scan and MRI of the pelvis showed a well-circumscribed mass about 10 cm size, heterogeneous in appearance posterior to a normal sized uterus. The provisional diagnosis was of either a subserosal fibroid or an ovarian fibroma. Her Ca-125 was within normal limits. She underwent laparotomy with subtotal abdominal hysterectomy and bilateral salpingo-oophorectomy. There was a 10 cm mass arising from the posterior aspect the uterus. The histopathology report showed mature lipoleiomyoma.

BACKGROUND

There are few case reports of lipoleiomyomas in radiology journals as compared to gynaecology journals. They are incidentally found on imaging studies in most of the cases.

CASE PRESENTATION

A 56-year-old postmenopausal lady presented with acute exacerbation of chronic pelvic pain to the gynaecological ward. She felt bloated and her abdomen felt distended for the last few months before she presented to gynaecological emergency. She had increased frequency of micturition. She had lost weight due to early satiety. She did not have any vaginal discharge or bleeding. Her pelvic pain was dull, grinding and constant with radiation to lower back. There were no particular aggravating or relieving factors and the pain was not relieved with any analgesics. There was no history of bowel symptoms, per rectal bleeding, constipation or diarrhoea. She had two children, one born by caesarean section and the other delivered normally. There was no significant gynaecological history. She had natural menopause at the age of 51 years and was not on any hormone replacement therapy. Her cervical smear was normal and up to-date.

She had hypertensive disease well-controlled by anti-hypertensive medications. She had no family history of ovarian cancer. Her mother died of breast cancer. On examination of her abdomen, 12 to 14 week size mass was palpated which was slightly tender. On bimanual examination, the mass was cystic, tender and pelvic in origin. It was difficult to differentiate whether it was arising from the uterus or the ovary.

INVESTIGATIONS

Her pelvic ultrasound showed a normal sized anteverted uterus. There was a well-circumscribed mass ten by eight by nine centimetres size, heterogeneous in appearance with no obvious vascularity. It could not be clearly

delineated whether it arose from the uterus, ovary or bowel (figure 1).

She had a MRI scan which showed a well-defined 10 cm mass lying posterior to the uterus. Her Ca-125 was within normal limits (figure 2).

DIFFERENTIAL DIAGNOSIS

- ▶ Subserosal fibroid
- ▶ Ovarian fibroma
- ▶ Benign cystic ovarian teratoma
- ▶ Malignant degeneration of cystic teratoma
- ▶ Non-teratomatous lipomatous ovarian tumour
- ▶ Pelvic lipoma
- ▶ Pelvic liposarcoma.

TREATMENT

She underwent laparotomy with subtotal abdominal hysterectomy and bilateral salpingo-oophorectomy. During laparotomy, dense scar tissue and omental adhesions were found. The uterus was normal, ovaries and tubes were normal. There was a 10 cm mass arising from the posterior aspect of the isthmus area of the uterus which was adherent to the bowel and embedded in the pelvis.

OUTCOME AND FOLLOW-UP

She had an uneventful postoperative recovery and was discharged home 3 days after her operation. The histopathology report showed mature lipoleiomyoma, consisting of smooth muscle cells and mature adipose tissue (figure 3).

DISCUSSION

Uterine lipoleiomyoma is a rare benign tumour, with a reported incidence of 0.03% to 0.20%.¹ To date, only nine cases have been reported in the radiological literature.^{1–3}

Postmenopausal women ranging from the age 50 to 70 years old are the most vulnerable age group for uterine lipoleiomyoma and 90% of the patients are older than 40 years of age.

Figure 1 Ultrasound scan showing mass behind uterus.

Lipoleiomyoma is an unusual fatty tumour. Myolipoma of soft tissue was first described in 1991 by Meis and Enzinger. These tumours showed characteristic histological findings, being composed of benign smooth muscle and mature adipose tissue. Similar tumours in the uterus are known lipoleiomyomas.⁴ Lipoleiomyomas occur in different locations including cervix and ovaries.⁵

Uterine lipoleiomyomas are typically found in postmenopausal women. There is a high incidence of concomitant uterine leiomyoma.^{6 7}

The signs and symptoms are similar to those caused by leiomyomas of the same size, such as a palpable mass, heavy menstrual bleeding and pelvic pain. Many patients are asymptomatic, although some patients present with urinary frequency, constipation, pelvic discomfort and uterine bleeding. These symptoms are probably related to the size of the lesion.

Uterine lipoleiomyomas are most frequently found in the uterine corpus and are usually intramural. Lipoleiomyomas can be found anywhere in the uterus or cervix and maybe subserosal.

Despite its rarity, the imaging characteristics of lipoleiomyoma provided by the tumour's mixture of fat, smooth muscle and fibrous tissue afford the radiologist the opportunity to make a specific diagnosis. It can be differentiated from lipoma only on histopathology.⁸

On Gray-scale sonography, lipoleiomyoma is a discrete, well-defined heterogeneous mass within the myometrium, sometimes exophytic, which is hyper echoic due to the presence of fat.⁶ Similarly, on CT images the tumour shows typical areas of fat attenuation within a circumscribed uterine mass. MR imaging reveals a well-circumscribed heterogeneous mass with high signal intensity on T1 weighted sequences, and low signal intensity on fat-saturated or T2 weighted images. Imaging plays an important role in preoperatively identifying the fatty nature and exact intrauterine location of a leiomyoma. Radiologists need to be aware of this entity, which, if large in size, can be mistaken for a more common pelvic mass, such as an ovarian teratoma, on ultrasound. The diagnosis can be confirmed on CT or MRI, which can specifically depict fat content within the tumour.

Lipoleiomyomas are composed of variable amounts of smooth muscle, fat cells and fibrous tissue. Fatty metamorphosis of smooth muscle cells of leiomyomas is the most likely cause for their development. The lesion is benign and the only puzzle for the pathologist could be the unexpected presence of fat in a uterine tumour.

There are few case reports of lipoleiomyomas in radiology journals as compared to gynaecology journals since there are incidentally found on imaging in most of the cases.

Figure 2 MRI-heterogeneous, well-encapsulated mass posterior to the uterus appearance resembling subserosal fibroid.

Figure 3 High power image, staining with H&E $\times 200$ magnification.

Learning points

- ▶ Multi-disciplinary approach should be taken in chronic pelvic pain with pelvic mass.
- ▶ Most of them are postoperative chance findings and the diagnosis is made in retrospect. It is often diagnosed preoperatively as leiomyoma or ovarian mature teratoma.
- ▶ Additionally, fat suppression techniques in MRI can be useful in verifying the diagnosis.

Competing interests None.

Patient consent Obtained.

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