Case report

Large twisted ovarian fibroma in menopausal women: a case report

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Abstract

Ovarian fibroma is the most common benign solid tumors of the ovary, commonly misdiagnosed as uterine fibroma as malignant ovarian tumors. It occurs generally in older perimenopausal and postmenopausal women. Occasionally large fibromas may undergo torsion causing acute abdominal pain. Doppler Ultrasonography imaging is the choice study. CT and MRI are often needed for further characterization and differentiation from other solid ovarian masses. The choice treatment is surgical removal with intraoperative frozensection. Immunohistochemical analysis is recommended to rule out the differential diagnosis. Here we present a case of a postmenopausal woman with a large twisted ovarian fibroma reflecting diagnostic and management difficulties including potential misdiagnosis of the tumor as a malignant ovarian neoplasm that may influence the surgical approach.

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Ovarian fibromas are the most common benign solid tumors of the ovary (1-4%), typically detected in middle aged women [1], often difficult to diagnose preoperatively and commonly misdiagnosed as uterine fibromas, because of their same pathology, complications, clinical and ultrasonic features [2,3], or sometimes as malignant ovarian tumors because of accompanying ascites and increased serum CA-125 level [4]. Extra uterine fibromas present greater diagnostic challenge. Here we present a case of a 62 year-old postmenopausal woman with a large twisted ovarian fibroma presented as acute pelvic pain. This case highlights the diagnostic difficulties that may be encountered in the management of twisted ovarian fibroma including potential misdiagnosis of the tumor as a malignant ovarian neoplasm that may influence the surgical approach.

Discussion

Mesenchymal neoplasms of the ovary are uncommon, not specific and determine difficult problems in diagnosis, histogenesis, behavior, and therapy [5]. Ovarian fibroma is seen between 20 and 65 years old with mean ages in the fifth and sixth decades [6-8].

Ovarian fibroma can be bilateral in 4-8% of patients and multiple in 10% of cases [5], especially in Gorlin syndrome [9, 10], or associated with pleural effusion and ascites in Meigs' syndrome [11]. It is often seen concomitantly with uterine leiomyoma suggesting an identical hormonal stimulation [12] and rarely associated with hirsutism or infertility [13].

These tumors are often asymptomatic despite their large size and are mostly discovered on routine examination [1]. Sometimes, they manifest with abdominal enlargement, urinary symptoms, abdominal pain [5], and occasionally with torsion [1] which is rare in the postmenopausal patient such as our case [14, 15]. Also, ovarian fibromac mimic ovarian cancer because of its solid nature, his association with ascites, pleural effusions [16] and elevated CA-125 levels [8] which is more pronounced in torsion due to necrosis and inflammation [4].

Ultrasound features are usually nonspecific [16]. Doppler imaging is the study of choice when ovarian torsion is suspected. Classically, the ovary appears enlarged, amorphous, and hypoechoic with heterogeneous stroma because of hemorrhage and edema [15] and coexistent mass, free pelvic fluid, lack of arterial or venous flow, and a twisted vascular pedicle [14].

On CT, ovarian fibroma usually appears as homogeneous solid tumors with delayed enhancement [8, 17]. While, diagnostic criteria for torsion include an adnexal mass in the midline, rotated toward the contralateral side of the pelvis; deviation of the uterus to the side of the affected ovary and ascites [14].

MRI is often needed for further characterization and differentiation of ovarian fibromas from other solid ovarian masses [16]. The tumor appeared as well-circumscribed low signal intensity mass on T1, with mixed signal intensity on T2 due to degeneration of the leiomyoma [12]: hemorrhage, necrosis, cyst formation, calcareous and sarcomatous degeneration [2, 5]. In fact, suggestive signs of malignancy include: solid mass, size greater than 10 cm, internal hypervascularity, advanced age, extension of the tumor into the pelvis or surrounding visceras and metastases [13]. While, suggestive signs of torsion include: tube thickening, ascites, deviation to the twisted side, hemorrhage in the thickened tube, and torsion knot [17].

Because of its rarity, the immunohistochemical analysis with desmin, inhibin -smooth muscle actin or histochemical staining with Masson’s trichrome is recommended to rule out the differential diagnosis especially leiomyosarcoma and sex-cord stromal tumors (thecoma and sclerosing stromal tumor) [12].

Early recognition of ovarian torsion and restoration of blood flow are important to avoid irreversible ovarian damage. Adnexectomy has been the standard treatment, rather than untwisting the affected ovary due to fear of thromboembolism into the systemic circulation after untwisting the ovarian vasculature [14]. In fact, treatment for ovarian fibroma need surgical removal with intraoperative frozen whether laparoscopic or open. However, surgeons are reluctant to use laparoscopic approach because of extraction difficulty. Moreover, the benign nature cannot be definitely diagnosed preoperatively and safe removal must be achieved without peritoneal contamination [3, 13].Cystectomy only can be performed in young women [3, 7]. While, a total hysterectomy and bilateral salpingooophorectomy is be the treatment of choice in the elderly patient [13].

Conclusion

Ovarian fibromas are uncommon but are the most common benign solid tumor of the ovary. Despite its rarity, it should be preoperatively considered in the differential diagnosis. Its treatment requires surgical removal with intraoperative frozen section and immunohistochemical analysis for definitive diagnosis.
Competing interests

The authors declare no competing interest.

Authors’ contributions

All authors had participated in the management of this case and the realization of this work. All authors read and agreed to the final version of this manuscript.

Figures

**Figure 1**: pelvic computed tomography revealing an enlarged ovary with iso-dense mass in the midline, measuring 122× 86cm with deviation of the uterus

**Figure 2**: pelvic computed tomography showing rotated mass toward the contralateral side of the pelvis without lymphadenopathy or pelvic effusion

**Figure 3**: intraoperative picture showing a black bluish encapsulated mass arising from the twisted right adnexa, measuring 140x 100x 60 mm

**Figure 4**: intraoperative picture showing an ovarian mass with irregular surface, hemorrhagic reshuffle and thrice twisted pedicle

**Figure 5**: macroscopic appearance of the resected ovarian fibroma.

**Figure 6**: histopathology of ovarian fibroma showing benign spindle cell proliferation (X4)

**Figure 7**: histopathology of ovarian fibroma showing ischemic necrosis (X4)

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