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Case Report

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OVARIAN FIBROTHECOMA: A CASE REPORT WITH LITERATURE REVIEW

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ABSTRACT

Ovarian fibrothecomas are a rare gynecological pathology of gonadal stromal cell origin, often occurring in perimenopausal and menopausal patients. They are predominantly unilateral in origin. They are benign in the majority of cases and may be responsible for hormone secretion. Ultrasound, MRI, and CT scan data remain the best preoperative approaches currently available for diagnosing ovarian fibrothecomas. However, the diagnosis is confirmed by histopathological analysis. Radical surgery is the preferred management strategy for menopausal women with ovarian fibrothecomas and is associated with a good prognosis. We present the case of a 60-year-old woman who presented complaining of progressively increasing abdominal girth associated with abdominopelvien pain, in whom hysterectomy with bilateral annexectomy was performed. Histopathological analysis revealed a benign unilateral ovarian fibrothecoma with benign uterine leiomyomas.

INTRODUCTION

Ovarian fibrothecomas are rare types of stromal tumors classified in the thecoma-fibroma group, which represents 4% of all ovarian cancers.[1,2]

They are mostly benign and therefore rarely malignant.[3,4] They occur unilaterally in 90% of cases and predominantly in postmenopausal women, with the average age of onset ranging between 55 and 60 years old.[5-7]

Fibrothecomas represent the most common hormonally active ovarian neoplasms.[8] Nearly half of them produce estrogen, which can lead to high estrogen levels and occasionally result in menstrual disorders and vaginal bleeding in affected patients.[2] The clinical presentation of ovarian fibrothecomas is often misleading and non-pathognomonic. Symptoms may include pelvicpain, the presence of a pelvic mass, and metrorrhagia. In rare instances, approximately 8% of patients may experience ovarian torsion.[9,10]

Due to its low frequency, the imaging characteristics of fibrothecomas are not fully known, which easily leads to diagnostic errors.[11]

Ultrasound is the cornerstone of diagnosing ovarian tumors as well as ovarian fibrothecomas.[5]

Early diagnosis and surgical resection are the treatment of choice for ovarian fibrothecomas.[12] Tumor removal is indicated in young patients, while radical surgery in terms of bilateral salpingo-oophorectomy is indicated in perimenopausal and menopausal patients.[5]

We present the case of a 60-year-old woman who presented to the gynecologicalclinic with a progressively increasing abdominal girth associated with abdominopelvic pain. Our preoperative radiological imaging revealed multiple uterine masses along with an ovarian mass.

CASE REPORT

We present the case of a 60-year-old woman with a history of type II diabetes mellitus on oral antidiabetic agents, menopausal for 12 years. She had no history of abortion, hormone replacement therapy, or contraceptive medication use. Additionally, her surgical history included cholecystectomy 6 years ago, while her family history was unremarkable, and she had no known allergies or toxic exposures.

She presented to the gynecological clinic complaining of progressively increasing abdominal girth with diffuse abdominopelvic pain, rated 3/10 on the numerical pain scale, partially relieved by acetaminophen. Symptoms were accompanied by frequent urination with a tendency for constipation. No jaundice, nausea, vomiting, or pallor was observed.

Physical examination revealed a BMI of 33 kg/m². She was normocardic, normotensive, and afebrile. Abdominal inspection showed symmetric enlargement, and palpation revealed a large, mobile, hard pelvic mass in the right iliac fossa. Pelvic examination revealed a slightly enlarged uterus palpable above the pubic symphysis by 1 finger breadth, with a mass filling the right lateral cul-de-sac, and no abnormal discharge or bleeding.

An ultrasound revealed a significant right adnexal cystic mass with mixed echogenic properties, along with an adenomyotic and polymyomatous uterus.

Abdominopelvic MRI with and without contrast showed a large, well-defined complex cystic mass of the right ovary measuring 14×13×9 cm with an irregular enhancing mural area concerning malignancy, and a polymyomatous uterus with 4 interstitial myomas, the largest measuring 2 cm in maximum diameter, and a posterior corporal subserous myoma measuring 3 cm in maximum diameter, as well as 2 endocervical polyps measuring 1x1 cm and 3.5x2 cm. There were no signs of abdominopelvic lymphadenopathy.

Thoracoabdominopelvic CT confirmed a significant heterogeneous pelvic mass measuring 14 cm in maximum diameter. No pleural/pericardial effusion or peritoneal fluid was observed.
CA-125 level was 10 kU/L (0 to 35 kU/L).

Surgical intervention was necessary given the preoperative assessment findings. The patient underwent bowel preparation and received appropriate preoperative antibiotics. No obstacles or challenges were encountered during any of the preoperative phases.

A midline vertical laparotomy was performed, providing optimal surgical exposure. A significant right ovarian mass was found (**Figure 1**), along with multiple uterine lesions resembling uterine myomas. Due to the considerable size of the mass and uncertainty regarding benign or malignant diagnosis, the preference was to remove the mass intact and avoid spillage into the peritoneal cavity if it were malignant. The patient underwent total hysterectomy with bilateral salpingo-oophorectomy (**Figure 2**) along with multiple peritoneal biopsies and an omental biopsy. No ascitic fluid was noted.

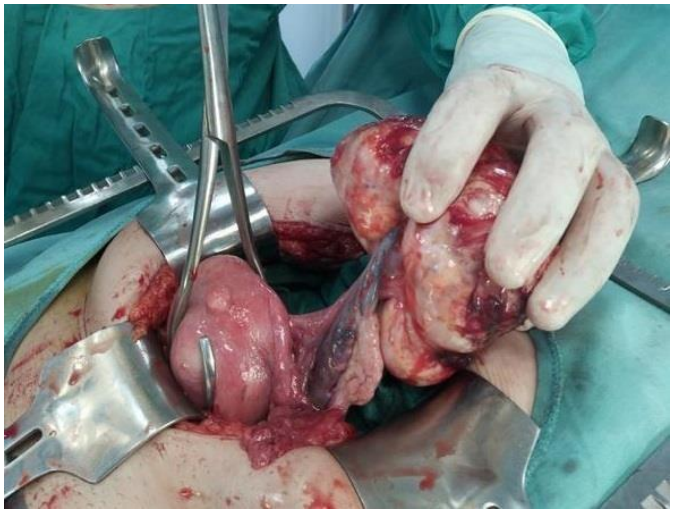

Figure 1: Large Right Ovarian Mass Suggestive of an Ovarian Fibrothecoma.

Figure 2: The Operative Specimen From the Total Hysterectomy with bilateralsalpingo-oophorectomy that was Performed.

Subsequent histopathological analysis of the samples revealed a left ovarian fibrothecoma. Furthermore, the uterine lesions were diagnosed as benign typical uterine leiomyomas with necrobiosis in one of the myomas, as well as endometrial glandular polyps without signs of malignancy. Peritoneal, omental, and visceral peritoneum analyzed were free from tumor infiltration.

The patient's symptoms completely resolved during the postoperative period She was discharged on the fourth day following the surgery. During follow-up after surgical intervention, the patient had no recurrent incidents since undergoing theoperation.

DISCUSSION

Ovarian fibrothecomas are rare tumors of stromal origin arising from the sex cords, accounting for <4% of all ovarian neoplasms.[7] These tumors are unilateral in approximately 90% of cases and rarely malignant.[3] In our case, surgeryrevealed that the lesion was of unilateral origin. Fibrothecomas are more common in older menopausal women.[1]

Ovarian fibrothecomas are composed of a mixture of fibrous and thecomatous elements.[13] Histologically, these tumors are characterized by the presence of spindle, oval, or round cells forming various amounts of collagen and also contain a smaller population of thecal cells containing intracellular lipids.[1,3]

Edema and cystic degeneration are relatively common, especially in large fibrothecomas, while calcifications and hemorrhages are rarely observed.[1,3]

The clinical presentation is often non specific.[9] Generally, pelvic pain or distension and irregular vaginal bleeding are the main symptoms for patients.[8 ,11,14] In rare cases, they coexist with Meigs syndrome, which involves the presence of ascites, pleural effusion, and elevated serum CA-125 levels.[9,13] Torsion is not a rare presentation, occurring in 8% of patients.[10]

Endocrine manifestations due to hormonally active tumors are rare. In cases where fibrothecoma exhibits estrogenic activity, associated uterine changes such as uterine hypertrophy and thickening of the endometrium can be demonstrated primarily by magnetic resonance imaging (MRI).[3,9]

Ultrasound is typically used as the first-line imaging technique for evaluating ovarian pathological abnormalities. However, the ultrasound features of fibrothecomas are generally non specific.[15]

Variations in ultrasound characteristics are demonstrated and include masses characterized by echogenic, mixed echogenic, or hypoechoic appearance.[5] Ultrasound examinations have also indicated the absence of blood flow in the tumors.[7]

On CT scan, ovarian fibrothecomas may appear as a homogeneous solid tumor with varying degrees of enhancement.[12]

In 79% of cases, the tumor appears as a solid mass with delayed contrast enhancement, while in 21% of cases, the tumor is partially or predominantly cystic, allowing for differential diagnosis with other ovarian masses such as serous cystadenofibromas or even malignant tumors, which can be challenging.[10] The absence of arterial vessels and the absence or slight early contrast uptake are characteristic signs and can be useful in considering the preoperative diagnosis of a fibrothecoma.[10]

A study previously reported the MRI characteristics of fibrothecoma in 26 patients and showed that MRI had superiority in demonstrating the characteristics of ovarian fibrothecoma as well as other estrogenic functional aspects.[14] En MRI, ovarian fibrothecomas typically exhibit predominantly low signal intensity on T2-weighted images.[1]

Tumor markers (serum CA-125 levels) are generally normal. However, elevated serum levels may initially be detected and become normal after tumor removal.[16]

The differential diagnosis of ovarian fibrothecomas includes pedunculated and intraligamentary uterine leiomyomas, as well as other solid ovarian masses such as Brenner tumors, cystadenomas, dysgerminomas, and granulosa cell tumors.[1,3,9]

Treatment for these ovarian tumors is surgical. Tumor excision is the preferred intervention for young women, while radical surgery in the form of bilateral salpingo-oophorectomy is justified in perimenopausal and menopausal women.[17-19]

In our case, radical surgery was performed, including total hysterectomy, considering the patient's age, the multiplicity of myomas, and the diagnostic uncertainty (benign or malignant) of the ovarian mass.

Diagnostic certainty relies on histopathological examination. Macroscopically, fibrothecomas exhibit a whorled white appearance, mimicking the appearance of uterine leiomyomas.1 The tumor may be lobulated or globular and is surrounded by generally intact ovarian epithelium.[9]

Microscopically, ovarian fibrothecomas are stromal tumors containing spindle, oval, or round connective tissue cells that produce abundant collagen, a hallmarkof this tumor type, as well as thecal cells or both associated cell types.[3,17,18,20]

CONCLUSION

Ovarian fibrothecomas are a rare gynecological neoplastic entity that most commonly occurs in older women. The diagnosis of ovarian fibrothecoma should

be considered in women presenting with postmenopausal bleeding, pelvic pain, and a significant pelvic mass.

An atypical ultrasound appearance of a fibroma/fibrothecoma may be confused with a malignant tumor, especially if associated with ascites, high color content on Doppler examination, and elevated CA 125 levels.

The treatment of ovarian fibrothecomas is surgical and depends on the age, parity, and hormonal status of the patient. Radical surgical excision is the preferred treatment for menopausal women and is associated with a goodprognosis.

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Guarantor of Submission

The corresponding author is the guarantor of submission.

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Availability of data and materials

Supporting material is available if further analysis is needed.

Competing interests

The authors declare that they have no competing interests.

Consent for publication

Written informed consent was obtained from the patient for publication of this case report and any accompanying images. A copy of the written consent is available for review by the Editor-in-Chief of this journal.

Ethics approval and consent to participate

Ethics approval has been obtained to proceed with the current study. Written informed consent was obtained from the patient for participation in this publication.

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