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Reviewh Article

A Case of Mitotically Active Cellular Fibroma of The Ovary Misdiagnosed Preoperatively as Pedunculated Subserosal Uterine Leimyoma

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Abstract

Cellular fibroma is the most common benign tumor of the ovary characterized by cellularity. Mitotically active cellular fibroma is a subtype of cellular fibroma showing mitotic activity, but no nuclear polymorphism or necrosis. These tumors are often misdiagnosed preoperatively as uterine myomas. A 42-year-old woman presented with pain in the right groin. Transvaginal ultrasound revealed a normal left ovary and a semisolid mass of approximately 4.5 x 5 cm originated from the right ovary. Pelvic MRI was reported as subserosal pedunculated uterine leiomyoma in the close antero-superior, right lateral proximity with the uterus fundus and the patient was scheduled for laparoscopic myomectomy. The excised mass was sent for the pathological examination, which resulted in the confirmed diagnosis of mitotically active cellular fibroma. The patient was informed about the local recurrence potential of cellular fibromas and frequent control visits were scheduled before the patient was discharged.

Keywords: leiomyoma; malignant; myectomy

Introduction

Ovarian fibroma is the most frequently encountered benign tumor of the ovarian stroma, accounting for 1% - 4% of all ovarian neoplasms [1]. It can be seen in women of any age, but the highest incidence occurs in women > 40 years [2]. The cellular subtype of ovarian fibroma has increased mitotic activity and mild-to-moderate nuclear atypia. Cellular fibroma of the ovary is characterized by cellularity compared to conventional type of fibroma [3]. In the revised 2014 WHO classification, cellular fibroma was included as a distinct entity and given great attention [4].

Most cellular fibromas are thought to arise from specialized ovarian stromal cells. Malignant potential of cellular fibromas is uncertain and these tumors may exhibit recurrence. The main factor distinguishing cellular fibromas from fibrosarcomas is the degree of mitotic activity. Mitotically active cellular fibroma is a recently described form of fibromatous tumors of the ovary and is less aggressive than cellular fibrosarcoma [5]. These fibromas are characterized by mitotic figures ≥ 4 MFs/10 HPFs, but have no severe nuclear atypia [6]. Mitotically active cellular fibromas sometimes exhibit evident characteristics of fibrosarcomas, including hypercellularity, a high mitotic rate and prominent nuclear polymorphism. There are some studies reporting cellular fibromas with a high rate of mitotic activity, but it has been proposed that the clinicopathologic characteristics of cellular fibromas that show a high mitotic activity differ from those of fibrosarcomas [5].

Cellular fibroma is clinically asymptomatic and may incidentally be detected during routine gynecological examinations. Cellular fibroma macroscopically resembles uterine leiomyoma and thus, it is usually misdiagnosed preoperatively as uterine leiomyoma. Histopathological diagnosis of cellular fibromas is usually certain because of their distinct growth pattern and spindle-cell morphology [3].

Completeness of the excision and absence of ruptured capsule are also important prognostic factors for cellular fibromas [5]. In addition, follow-up of cellular fibromas for future recurrence and/or fertility is important. In this report, we present a case of mitotically active cellular fibroma that was considered as uterine leiomyoma through the initial investigations.

Case

A 42-year-old woman presented to our clinic due to pain in the right groin. She had a history of two cesarean sections. In the genital examination, the labia was found to be operated with labiaplasty. There was tenderness in the right inguinal region upon deep palpation. No pathologic finding was

detected with speculum examination. A smear sample was collected for microscopic examination.
In the transvaginal ultrasonographic examination, the uterus was found to be anteverted. The endometrium was regular with a thickness measured as 4 mm (normal range: 1-16 mm). The myometrium was homogenous. The left ovary was normal, while the right ovary was adhered to the uterus with a semisolid mass of approximately 4.5 x 5 cm was detected in it.

The patient was asked to have pelvic MRI, analyses of tumor markers, hormones, anti-Mullerian hormone (AMH) test, complete urinalysis and urine culture. Hormone test results of the patient were reported as FSH: 4, LH: 2.5, E2: 33 and AMH: 21. Tumor markers included CEA: 1.81, CA 125: 10, Ca 15-3: 18 and CA 19-9: 9. The level of alpha feto protein was found as 1.86 ng/mL (normal range: 0 and 8 ng/mL). The complete urinalysis was normal and no growth was observed in the urine culture. Upon the examination of the smear sample revealed inflammation, the patient was prescribed local treatment via the vaginal route.

In the pelvic MRI examination report, the uterus was slightly anteverted. A nodular appearance was detected in the close proximity of the fundus at antero-superior right lateral aspect with a mass of 45 x 52 x 53 mm in size identified in close proximity with the right ovary posteriorly, displacing the posterior aspect slightly, which was compatible with a subserosal pedunculated uterine leiomyoma with regular lobulated contours, iso-hypointense signal patterns on the T1 and T2 weighted images and relatively homogenous enhancement after administration of the intravascular contrast agent. Both ovaries were in the normal localization and predominantly peripheral cystic components are monitored with the largest cyst of 10 x 8 mm at the right and 5 x 4 xm at the left ovaries. Result of the MRI examination was reported as subserosal pedunculated uterine leiomyoma in the close antero-superior, right lateral proximity with the uterus fundus.

The patient was scheduled for laparoscopic myomectomy. The first trocar was introduced through the umbilicus and the second trocar from laterals. An orange colored and smooth contoured solid mass of 4 x 4 cm with nodular fibroid appearance, which was adhered to the right lateral of the uterus fundus and originated from the right ovary, was excised. The part that was adhered to the uterus was separated. The excised material was sent for pathological examination and the operation was terminated.

The pathologic examination was reported as spindle cell stromal tumor and immunohistochemical study was recommended for the differential diagnosis. The immunohistochemical examination revealed cellular fibroma with 4 mitotic figures. No nuclear polymorphism or necrosis was detected. The definitive diagnosis was established as mitotically active cellular fibroma. The patient was informed about the local recurrence potential of cellular fibromas and frequent control visits were scheduled before the patient was discharged.

Discussion

Ovarian tumors with four or more mitoses and high cellularity are defined as cellular fibrosarcomas. However, some case report and the most comprehensive study on this subject by Irving et al. suggested that some tumors with four or more mitotic activity, but without nuclear atypia should be distinguished from the fibrosarcomas and named as mitotically active cellular fibromas of the ovary (5). Cellular fibromas are usually solid, unilateral tumors of uncertain malignant potential. In our case, the fibroma was unilateral and originated from the right ovary. The pathological report of our case also included 4 mitotic figures, but without nuclear polymorphism or necrosis, leading to the confirmed diagnosis of mitotically active cellular fibroma, which is associated with potential for recurrences.

Irving et al. examined 40 mitotically active cellular fibroma and 35 cellular fibroma cases and reported the mean age as 41 years [5]. Consistently, our patient was 42 years old. However, cellular fibromas may be seen in women of any age. Yildirim et al. reported a 24-year-old patient with mitotically active cellular fibroma [7]. The average size of cellular fibromas was reported as 9.4 cm [5]. However, the size of these tumors may show great variability among the cases. In our case the fibroma was measured as 4 x 4 cm. The size of the cellular fibroma was reported as 27 cm by Adad et al., 10 cm by Abdelazim et al. and 7.3 cm by Kim et al. (1, 3, 8). Size of cellular fibromas may be associated with patient characteristics and time to diagnosis. Patients with fibromas most frequently present with the symptoms of pain and abdominal mass. Our patient presented due to pain in the right groin and the mass was detected on gynecological examination.

Cellular fibroma of the ovary is often misdiagnosed preoperatively as uterine myoma or malignant ovarian neoplasms [9]. Leung et al. reported that 34% of ovarian fibromas were found to be misdiagnosed as uterine leiomyomas preoperatively [10]. Abdelazim et al. reported a case of 36-year-old women with ovarian fibroma that was misdiagnosed preoperatively as uterine leiomyoma [8].

The preoperative diagnosis of mitotically active cellular fibromas is challenging, because currently there are no clinically useful serum tumor markers or characteristic imaging findings for these tumors. [11]. Pelvic MRI is of limited utility in the diagnosis of cellular fibromas. In a study by Târcoveanu et al., MRI was suggestive for the diagnosis only in 3 of 10 cases of fibroma [12]. In our study, pelvic MRI showed a mass of 45 x 52 x 53 mm in size in close proximity with the right ovary, compatible with pedunculated subserosal uterine leiomyoma, leading to misdiagnosis. Whereas, the postoperative immunohistochemical examination of the excised mass confirmed the diagnosis of cellular fibroma of the ovary.

There is no standard treatment for mitotically active cellular fibromas, although overtreatment should be avoided in women requiring preservation of fertility. Najmi et al. reported that the ovarian fibroma can be removed either laparoscopically or with laparotomy, particularly when the preoperative diagnosis is unclear [13]. In our patient, we excised the cellular fibroma with laparoscopic myomectomy. Frequent control visits were scheduled considering the local recurrence potential of the fibroma.

Conclusion

Mitotically active cellular fibromas of the ovary are frequently misdiagnosed preoperatively as uterine myomas. Surgical excision is the mainstay of the treatment and can be performed with minimally invasive laparoscopic surgery. Patients having cellular fibromas should be closely followed-up as these tumors may show local recurrences.

Declaration of patient consent

The author certifies that all appropriate patient consent forms were obtained. The patient gave her consent for the images and other clinical information to be reported in the journal. The patient understand that name and initials will not be published and due efforts will be made to conceal identity, but anonymity cannot be guaranteed.

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