CASE REPORT

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Ovarian Fibroma with Substantial Calcification: An Uncommon Case Presentation

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ABSTRACT

Ovarian fibroma is a rare benign tumor of the ovary that is composed of fusiform fibrous cell components. Ovarian fibroma can occur at any age, and it is more common in postmenopausal or postmenopausal women. The clinical manifestations of ovarian fibroma are not typical; they are usually characterized by no obvious symptoms and mostly accidental imaging findings. The density and signal of ovarian fibroma are generally uniform, and necrosis, cystic degeneration, and calcification are rare. We report a 25-year-old young woman who accidentally discovered a large calcified mass on the right side of the pelvic cavity during a computed tomography examination of the lumbar spine. The mass was pathologically confirmed as calcified ovarian fibroma.

Keywords: Ovarian fibroma, calcification, sex cord-stromal tumor

INTRODUCTION

Ovarian fibroma with large calcification is a rare presentation except in Gorlin syndrome [1,2]. Most ovarian fibromas exhibit minimal or no calcification, and when present, calcifications are usually sparse. The presence of significant calcification in ovarian fibroma is rare and may pose a diagnostic challenge, as it can mimic other calcified pelvic masses, such as teratomas and malignancies. In this report, we emphasize the importance of recognizing this rare presentation and considering ovarian fibroma in the differential diagnosis of calcified pelvic masses.

CASE PRESENTATION

A 25-year-old female patient presented to our hospital with lower back pain. The patient underwent lumbar spine computed tomography examination, and unexpectedly, an irregular high-density mass was detected in her pelvic region, approximately 6.2×7 cm in size (Figure 1a). Ultrasonography confirmed the presence of a right adnexal mass with posterior acoustic shadowing (Figure 1b). Pelvic magnetic resonance imaging was used to further characterize the pelvic mass. The axial T1-weighted images (T1WI) (Figure 2a) and sagittal T2-weighted images (T2WI) (Figure 2b) sequences both exhibited prominent low signal intensities, with the enhanced scan revealing mild enhancement (Figure 2c). The patient complained of significant dysmenorrhea and occasional irregular vaginal bleeding but denied any abdominal pain or bloating. In addition, she denied any family genetic disease or other medical history. Laboratory examination upon admission revealed normal results for complete blood count, liver function, and kidney function. Urinalysis revealed elevated white blood cell counts (+++), increased vitamin C levels (+), and 113/L squamous epithelial cells. Tumor markers, including alpha-fetoprotein at 2.0 ng/mL, carcinoembryonic antigen at 1.17 ng/mL, ferritin at 38.00 ng/mL, carbohydrate antigen 125 (CA-125) at 19.60 U/mL, CA-153 at 4.30 U/mL, CA-199 at 3.68 U/mL, and human epididymis protein 4 at 20 pmol/L, all fell within the normal range. Subsequently, the right ovarian mass was removed, and oophoroplasty was performed. The pathological diagnosis of ovarian fibroma with marked calcification.

DISCUSSION

Ovarian fibromas are the most common type of ovarian sex cord-stromal tumor, accounting for approximately 4% of all ovarian tumors [3]. In approximately 84% of cases, ovarian fibromas appear as solid masses [4]. Larger ovarian fibromas may show heterogeneity because of necrosis, cystic degeneration, or hemorrhage. Heterogeneous masses comprise

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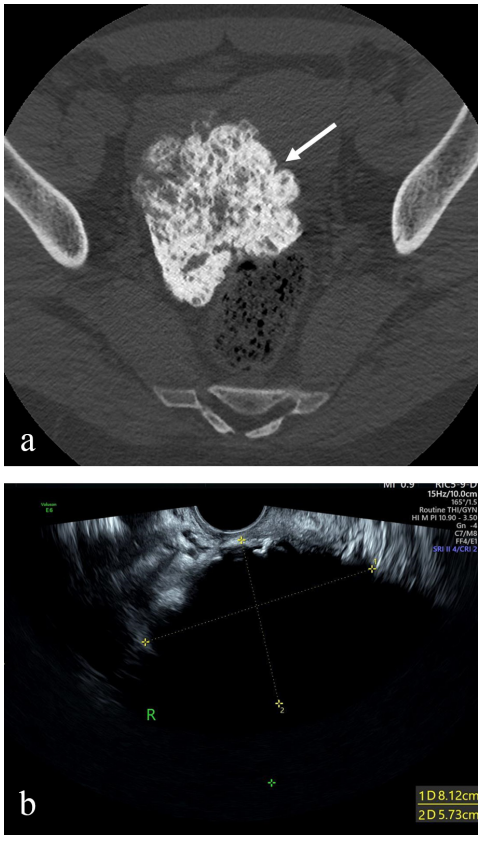

Figure 1. CT and Ultrasonography findings. (a) CT examination showed an irregular high-density mass in the pelvic region (white arrow); (b) ultrasonography of the right ovary

CT: Computed tomography

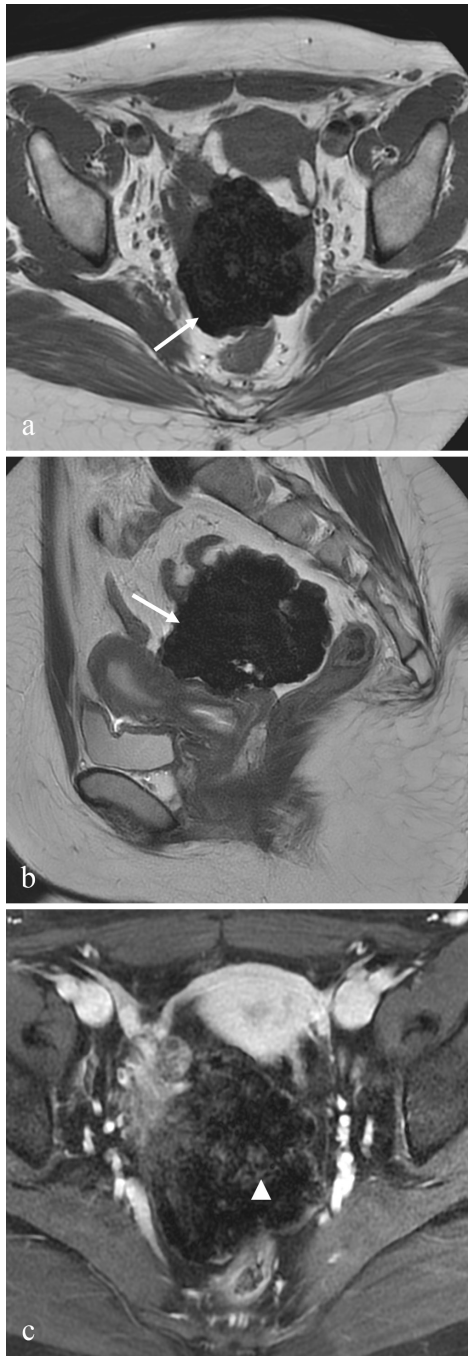

Figure 2. Pelvic MRI findings. (a) Axial T1-weighted image showing low-signal mass (white arrow); (b) Sagittal T2-weighted image showing low-signal mass (white arrow); (c) post-contrast T1 fat-saturated image showing mild enhancement (white triangle)

MRI: Magnetic resonance imaging

approximately 11% of all cases, whereas predominantly cystic lesions account for approximately 5% of cases. Calcified ovarian fibromas are rare, with a higher prevalence observed in Gorlin syndrome [5-8]. Gorlin syndrome is an autosomal dominant disorder characterized by specific diagnostic criteria, including multiple basal cell nevi, jaw cysts, and skeletal abnormalities [7]. Approximately 75% of affected individuals have a familial history of the syndrome [9]. In such cases, 75% of ovarian fibromas are bilateral and multifocal. In the current case, the patient had unilateral ovarian calcifying fibroma, no other skin or skeletal abnormalities, and no family history of Gorlin syndrome, effectively ruling out the possibility of Gorlin syndrome.

Subserosal uterine leiomyomas and ovarian Brenner tumors also demonstrate low signal intensity on both T1WI and T2WI, potentially leading to misidentification as ovarian fibromas. Subserosal uterine leiomyomas have pedicles extending to the uterus and blood vessels between the uterus and the tumor mass. They can be distinguished by assessing the relationship between the ipsilateral ovary and the tumor. For menopausal women, it is difficult to distinguish it from uterine leiomyoma calcification, but this case was a 25-year-old young woman, so the possibility of such a large amount of calcified leiomyoma is very small. Additionally, Brenner tumors predominantly consist of solid components, occasionally featuring amorphous

calcifications within the solid component, and widespread calcification is uncommon. Although ovarian teratoma may contain ossifying components, its fat content can serve as a distinguishing point from fibroma. Compared with fibroma, fibrothecoma may have estrogenic activity, less fibrosis and collagen components, higher T2WI signals, and more frequent necrosis and degeneration [10]. Ovarian fibroma is one of the most common ovarian sex cord-stromal tumors, and it is generally associated with no endocrine function. The tumor indicators in our case were all negative, although there are literature reports that some cases with ovarian fibroma have elevated serum CA-125 levels, tumor size, and ascites are associated with elevated CA-125 levels, and elevated serum CA-125 levels do not originate from tumor cells themselves [11]. Therefore, the tumor marker CA-125 can still be used as one of the distinguishing points between it and ovarian epithelial tumors.

In conclusion, widespread and diffuse calcification is an uncommon pathological feature of ovarian fibromas. Generally, small, asymptomatic tumors do not necessitate treatment, whereas larger tumors causing symptoms are best managed through surgical resection.

Ethics

Informed Consent: We obtained the patient's verbal assent and waived written informed consent.

Footnotes

Authorship Contributions

Concept: C.H., W.Y., Data Collection or Processing: W.Y., Literature Search: C.H., W.Y., Writing: C.H., W.Y.

Conflict of Interest: No conflict of interest was declared by the authors.

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