

Primary Ovarian Leiomyoma in A Premenopausal Woman: A Case Report



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Citation Sakhdari M, Maleki A. Primary Ovarian Leiomyoma in A Premenopausal Woman: A Case Report. Case Reports in Clinical Practice. 2023; 8(5): 228-229.

Running Title Primary Ovarian Leiomyoma



Article info:

Received: September 10, 2023

Revised: September 29, 2023

Accepted: October 12, 2023

Keywords:

Ovarian leiomyoma; Uterine fibroids; Pathology

ABSTRACT

Primary ovarian leiomyoma is a rare benign ovarian tumor that occurs in women between the ages of 20 and 65. This tumor is usually diagnosed incidentally through pelvic examination or histopathological study after surgery. A definitive preoperative diagnosis is difficult due to the lack of pathognomonic signs or specific imaging features. Therefore, histopathological examination and immunohistochemical analysis are considered necessary. The authors report a case of a 49-year-old woman with ovarian leiomyoma who had a history of heavy vaginal bleeding. She underwent laparotomy with a preoperative diagnosis of uterine fibroids.

GnRH agonist (Gonadotropin-releasing hormone agonist); TSH (Thyroid stimulating hormone); IHC (Immunohistochemical); SMA (Smooth Muscle Actin)

Introduction

Leiomyoma is a rare solid ovarian tumor that accounts for approximately 1% of benign ovarian tumors [1]. These tumors are usually small, unilateral, and typically seen in women aged 20-65. Most ovarian leiomyomas are incidental findings, with approximately 80% of them discovered in premenopausal women [2]. As patients are mostly asymptomatic, the diagnosis of these tumors is typically made through histopathologic examination after oophorectomy for solid ovarian tumors. The possible origins of these tumors include smooth muscle cells located in the ovarian ligament, smooth

muscle cells or multipotential cells in the ovarian stroma, undifferentiated germ cells, and cortical smooth muscle metaplasia [3]. The authors present a case of primary ovarian leiomyoma in a 49-year-old woman.

Case report

A 49-year-old woman was referred to the Gaem Clinic of Mashhad Medical University with a one-year history of abnormal uterine bleeding (AUB) and intermenstrual spotting, which limited her social activities. She had a history of taking tranexamic acid, mefenamic acid, and two courses of leuprolide

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(GnRH agonist). Further evaluation showed no history of urinary frequency, urgency, or gastrointestinal problems. Physical examination revealed a palpable mass between the umbilicus and pubic symphysis. In a bimanual examination of the uterus, a moving mass of approximately 10 x 10 cm was detected. To investigate the abnormal uterine bleeding (AUB) in the patient, thyroid and prolactin tests were performed. Both tests yielded normal results (TSH:2.4, Prolactin:15). Ultrasound evaluation revealed a large right adnexal mass with a 102 x 136 x 109 mm diameter near the uterine fundus, which resembled a pedunculated uterine fibroid. The solid mass had well-defined borders and showed a heterogeneous hypoechoic pattern.

The patient underwent a hysterectomy under general anesthesia for a probable uterine fibroid. During the surgery, an inspection of the uterus and adnexa revealed a right-sided solid, firm, oval ovarian mass with a smooth surface. The tumor was completely separated from the uterus and showed no adhesion to or invasion of adjacent structures as seen in Figures 1 and 2. No uterine mass was detected. The left ovary appeared normal, hence was left intact.

On account of a history of heavy vaginal bleeding, a hysterectomy alongside a right unilateral salpingo-oophorectomy was performed. Frozen sectioning showed leiomyoma. After surgery, histopathologic examination demonstrated interlacing bundles of spindle cells with some areas of hyalinization resembling a leiomyoma. No atypia, pleomorphism, mitotic count, and necrosis were reported. Immunohistochemical (IHC) staining exhibited positive staining for actin and desmin but not for inhibin, which confirmed the diagnosis of ovarian leiomyoma. Postoperatively, the patient had an uneventful recovery.

Discussion

Primary ovarian leiomyoma is a rare benign mass, usually found incidentally during a routine examination, during surgery, or after oophorectomy [4]. Even though most cases of ovarian leiomyomas are small and asymptomatic [1], the authors' case had a quite large tumor with heavy vaginal bleeding unresponsive to medical treatment. There is a predominance of unilateral leiomyoma in the literature; however, bilateral ovarian leiomyoma has been documented in adolescents [5]. Similar to previous studies, the authors' 49-year-old patient had unilateral ovarian leiomyoma. There is a possibility that uterine leiomyoma coexists with ovarian leiomyoma because subserosal pedunculated uterine leiomyoma can lose its attachment to the uterus and connect to the ovary. In the authors' case, the uterus was intact; however, a hysterectomy was performed due to a history of menorrhagia.

After reviewing the literature, the authors found that most patients with leiomyoma are nulligravidas, which suggests that estrogen may play a role in the development of ovarian leiomyoma [6]. Having said that, the authors' patient had three previous cesarean sections. Moreover, there is another speculation regarding the development and origin of ovarian leiomyomas in ovaries with abnormal growth [6]. Preoperatively, ovarian leiomyoma is difficult to distinguish from pedunculated uterine fibroids and other solid ovarian tumors by ultrasound. Therefore, MRI is usually performed to diagnose nonspecific pelvic tumors [7].

The definitive diagnosis of ovarian leiomyoma is established when the tumor has the nature of smooth muscle. In the authors' case, IHC staining showed diffuse strong positive SMA which is

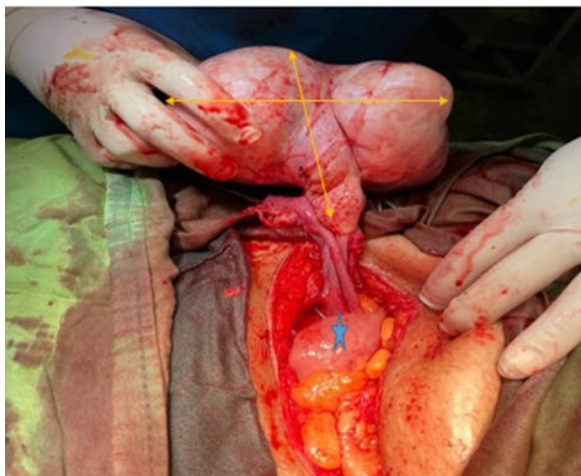


Fig. 1. (↔) Ovarian leiomyoma. (★) Uterine



Fig. 2. Ovarian leiomyoma

characteristic of leiomyoma [1,3,4]. It is worth mentioning that leiomyoma should be differentiated from leiomyosarcoma by analyzing mitotic count, cytological atypia, and tumor necrosis [3]. The authors' case showed neither of the above-mentioned markers. Hysterectomy with salpingo-oophorectomy is regarded as a common treatment for ovarian leiomyomas in middle-aged and elderly patients. Bilateral salpingo-oophorectomy is often necessary for bilateral ovarian leiomyomas; thus, the authors performed a hysterectomy in conjunction with the right salpingo-oophorectomy, while leaving the left ovary.

Conclusion

The current study presents a rare case of primary ovarian leiomyoma in premenopausal women. Preoperative assessment of adnexal masses is very important for diagnosing possible preoperative conditions, planning for the operation, and choosing subsequent treatments.

Ethical Considerations

Ethical approval and consent to participate

Ethical approval is not required for this case report because the research does not require any ractical actions or interventions on patients, it is an observational study.

Consent for publication

Written informed consent was obtained from the patient for publishing 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 upon request.

Funding

No funding was received to assist with the preparation of this manuscript.

Conflict of Interests

The authors have no conflict of interest to declare.

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