

Ovarian leiomyoma- An uncommon tumour

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Abstract

Primary ovarian leiomyoma is a rare benign tumour of the ovary seen in women between 20 and 65 years of age. We report a case of an ovarian leiomyoma in a 30 years old woman who presented with lower abdominal pain. Ultrasound scan revealed a heterogenous adnexal mass of 12x10cm, raising the possibility of dermoid cyst/teratoma. CA-125 level was 20.81 IU/ml. Laparoscopic removal of an irregular, white, stony hard ovarian mass was performed and histopathological examination confirmed the diagnosis of primary ovarian leiomyoma. Less than 100 cases have been reported in literature so far, including one from Pakistan. The tumour is usually asymptomatic and often misdiagnosed prior to surgical resection, therefore, the diagnosis is frequently made incidentally on histopathology. This rare tumour of the ovary should be considered in the differential diagnoses of solid ovarian masses and surgical intervention with ovary preserving technique is important in young patients.

Keywords: Ovary, Leiomyoma, Pathological examination.

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Introduction

Primary ovarian leiomyoma was first identified in 1862 by Sangalli, and rarity of the tumour has been well documented since then, with fewer than 100 cases reported so far.¹

Leiomyoma is the most common benign mesenchymal tumour of the uterus, which can be developed at any site where smooth muscle cells are found, including the ovary, however, it accounts for only 0.5-1% of all benign ovarian tumours.² Primary ovarian leiomyoma is suggested to arise from the smooth muscle cells of the ovarian blood vessels,³ and is usually seen between 20 and 60 years of age, with most of the cases occurring in pre-menopausal women.⁴

Because of their rarity, ovarian leiomyomas are not typically suspected preoperatively or even intraoperatively, and are

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often misdiagnosed as, uterine myomas, malignant ovarian tumours, fibroma/thecoma, cystadenoma, teratoma or ovarian endometriomas, based on ultrasound scans and tumour appearance.^{5,6} Detection is mostly incidental and diagnosis is confirmed after histopathological examination of surgically resected ovarian masses.^{1,7} Minimally invasive ovary-sparing surgery is recommended, particularly in young patients, as misidentification of the tumour pre or intraoperatively can lead to unnecessary extensive surgery and may compromise fertility.⁸

Case Report

A 33-year-old female, Para 2+0, with no known co-morbidities and a history of two previous Caesarean sections, presented in Gynaecology Out-patient Department (OPD) of Dr. Ziauddin Hospital on 26th December 2023 with persistent lower abdominal pain for two months. She reported a history of shivering and fever associated with periods. Her menstrual cycle had been irregular for the past year, with episodes of menstruation occurring twice a month and bleeding lasting up to ten days. Ultrasound pelvis showed an echogenic right adnexal mass with anechoic areas, measuring approximately 12x10 cm. The findings were suggestive of a right dermoid cyst. CA-125 was 20.8 IU/ml. The patient was haemodynamically stable, and her per abdominal and vaginal examinations were unremarkable. Hence elective laparoscopic cystectomy was planned. During surgery a large white right ovarian mass was noticed with irregular margins and stony hard texture, measuring approximately 12x15 cm, mimicking a cartilage-like structure in appearance. No healthy ovarian tissue was identified. (Figure-1).

It was completely removed using a Ligature device. The entire specimen was initially attempted to be retrieved

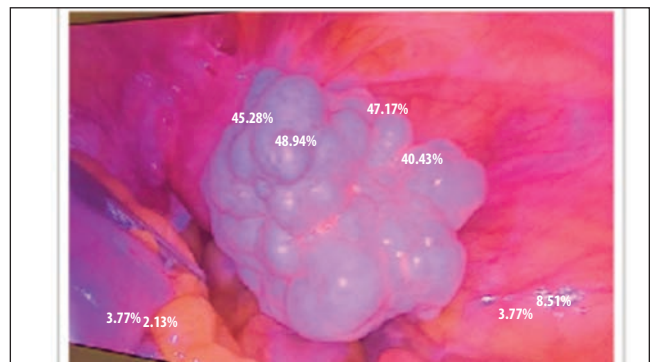


Figure-1: Laparoscopic view of the right ovary.

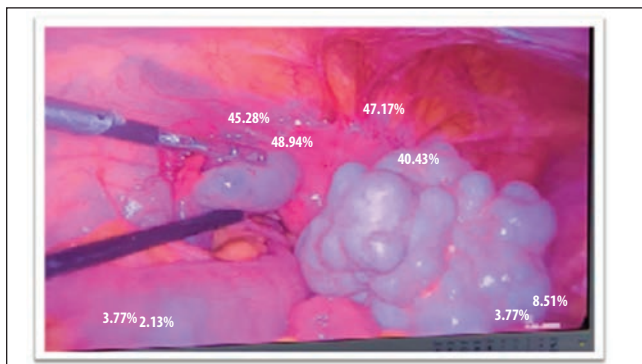


Figure-2: Healthy Left ovary and fallopian tube.

through the supraumbilical port, but due to its cartilaginous texture and large size, this was not possible. Instead of converting to laparotomy, the specimen was cut into 1-2 cm chunks with a knife, keeping it within the bag to avoid intraperitoneal spillage. Both fallopian tubes and left ovary appeared healthy and were preserved (Figure-2).

The patient had an uneventful postoperative recovery and was discharged within 24 hours of surgery. Histopathological examination of the specimen revealed a neoplastic lesion, with presence of circumscription and fascicles of bland spindle cells along with focal positivity of immunohistochemical stains ASMA and Caldesmon, which supported the diagnosis of Ovarian Leiomyoma, without any evidence of malignancy. An oncology review was obtained, which confirmed the benign nature of the tumour. She was followed up in the out patient clinic by the consultant at 10th post op day. The histopathology report was discussed and the patient was reviewed by the oncologist. The patient conceived again spontaneously and had regular antenatal visits by the consultant, and delivered a healthy baby at 37 weeks of gestation via elective LSCS due to previous two scars, without any antenatal or postnatal complication. Post delivery her menstrual cycle remained regular and she was advised contraception.

Discussion

Ovarian leiomyoma's are usually unilateral, with a predilection to right side as per the recent clinical analysis, with approximately 85% occurring in pre-menopausal women.^{1,9,10} However, bilateral tumour and post-menopausal occurrence have also been reported.

Leiomyomas are mostly asymptomatic, and less than 5cm in size, often detected incidentally on ultrasound, during surgery, or after histopathological examination. Larger tumours may present with lower abdominal pain or acute abdomen secondary to torsion. Most reported cases presented with lower abdominal pain, fever and menstrual irregularities, similar to our patient. In this case patient

recovered well and delivered a baby postoperatively, after surgery like similar to the case presented by Kim.⁵

In the present case, the tumour exhibited several previously reported features. It was unilateral, right-sided and large, measuring 12x10 cm, making it one of the largest ovarian leiomyomas reported so far, and the patient initially presented with lower abdominal pain. Large ovarian leiomyomas may show secondary degenerative changes including oedema, hyalinization, haemorrhage, calcification, myxoid and cystic changes.^{4,6} Extensive sclerosis and fibrosis were noted in this case on histopathologic examination of specimen, a finding not previously reported in the literature.

Ultrasonography remains the first-line imaging modality for evaluating pelvic masses, and the findings in ovarian leiomyomas often mimic those of teratomas, as observed in previously reported cases and in the present case. MRI is considered a useful adjunct to ultrasound, as it can diagnose leiomyomas with better clarity.⁸ However, none of the reported cases have been correctly diagnosed before surgery as per a clinical analysis conducted.⁶

CA-125 levels play an important role in guiding the extent of surgical management of ovarian masses. Primary ovarian leiomyomas are benign tumours with an extremely low risk of malignant degeneration, and have an excellent clinical prognosis.^{1,8,11} Elevated CA-125 levels in POLs are rare and are more commonly observed in postmenopausal women.¹¹ In the present case, CA-125 levels were within the normal ranges; therefore, we proceeded with laparoscopic excision of the right ovarian mass, preserving the healthy appearing left ovary.

Literature review showed that extensive pelvic surgeries were performed in almost all previously reported cases, due to the inability to accurately diagnose POL preoperatively and the concern for potential malignancy. The surgical management included TAH+BSO, bilateral Salpingo-oophorectomy and unilateral salpingo-oophorectomy.⁶ Therefore, it can be a potential reason of compromised fertility for women of reproductive age, as ovary-preserving surgeries were rarely performed in the past owing to misdiagnosis and concern for malignancy.⁸

Primary ovarian leiomyoma should be considered in the differential diagnosis of ovarian masses, and the surgical plan should be individualized accordingly. It is recommended to consider ovarian- and fertility-preserving surgical approaches in young patients when there is no evidence of malignant potential in the ovarian mass. These may include mass excision, cystectomy, or wedge resection.^{8,11} This approach can reduce the frequency of

extensive gynaecological surgeries, which are associated with higher morbidity when performed unnecessarily, thereby preserving fertility and minimizing complications.

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Author Contribution:

MYR: Wrote abstract, discussion and introduction.

SH: Searched previous literature and dug out references.