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A Rare Case of Abdominal Lump Presenting as Ovarian Leomyoma

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Introduction

Leiomyoma is a benign smooth muscle tumor that most commonly affects the uterus, cervix and broad ligaments in women of reproductive age group. Primary leiomyoma of the ovary is a very rare that accounts for 0.5 to 1% of all benign ovarian tumors with only an approximate 70 cases reported in the literature.[1,2,3] Ovarian leiomyomas are particularly unilateral and small, and they most commonly occur in women aged 20–65 years.[4,5]. The majority of these tumours are discovered incidentally, with about 80% of the cases occurring in premenopausal women. Patients are usually asymptomatic, and the tumour is most commonly diagnosed unintentionally by histological examination of ovarian tissue after an ovarian excision of solid mass.[4,5]. The most likely theory is that they take their origin from the smooth muscle of the ovarian ligaments where they enter the ovary or from smooth muscles of ovarian hilar blood vessels, smooth muscle cells or multipotential cells in the ovarian stroma, undifferentiated germ cells, cortical smooth muscle metaplasia, smooth muscle metaplasia of endometrial stroma, smooth muscle present in mature cystic teratomas, smooth muscle in the walls of mucinous cystic tumor and metastasizing uterine leiomyoma to the ovary. [2, 4-10.] We present a case of primary ovarian leiomyoma with corpus luteal cyst in a 30 year old nulliparous female.

Case Report

A 30-year-old nulliparous woman was admitted to our hospital with six months history of right lower abdominal lump with no associated menstrual or abdominal complains. The patient gave history of a surgery for excision of the lump at a private setup, fifteen days back, the documents of which were not available.

On per abdominal examination, stitches of laparotomy were present. The lump was approximately 15cm × 10 cm in size, spherical in shape, extending from pelvis to 5 cm above umbilicus having irregular surface, hard consistency with restricted mobility in all directions.

On USG whole abdomen a solid mass lesion of size 131 × 111mm seen in right adnexa with cystic component of size 36 × 26 mm at posterior aspect of mass ? broad ligament fibroid.

On CECT whole abdomen, a large lobulated inhomogenously enhancing soft tissue density mass lesion of size 156 × 150 × 130 mm was noted closely abutting uterine fundus on right lateral aspect with small areas of internal degeneration. Uterus appeared slightly bulky with no other focal lesion noted. Left adnexa appeared

clear. Sugesive of? right ovarian neoplastic lesion. All laboratory investigations were within normal limit. CA 125 level was 124 U/ml.

A laparatomy was performed. During laparotomy, inspection of the uterus and adenexa revealed a solid, hard, oval, right-sided ovarian tumour with irregular surface, approximately 15cm × 15cm × 10 cm in size. The tumour was distinctly separate from the uterus however it was adhered to small bowel, its mysentery and parietal wall. No vascular encasement was present. Left ovary showed a cystic lesion of size 3 × 2 cm. A right ovarian mass excision with left ovarian cystectomy was performed and sent for HPE. Postoperative period was uneventful and patient was discharged on 9th post-operative day.

Pathologic examination revealed (of right mass) a grossly huge globular grayeish tissue of approximately 15cm × 15cm × 10 cm size. On cut section solid grayeish white fibrous tissue was noted. Microscopically it showed smooth muscle proliferation in criss-cross pattern with intermingled stroma showing hyaline and myxoid changes. There was no atypia or pleomorphism, and mitotic count and necrosis were absent.

Pathologic examination revealed (of left mass) grossly grayish white tissue of 2 cm × 2 cm size. Microscopically it showed cyst lined by corpus luteal cells which were polygonal with central nuclei and abundant cytoplasm.

Immunohistochemically, the tumor cells were strongly positive for smooth muscle actin (SMA) (Fig.) and desmin.

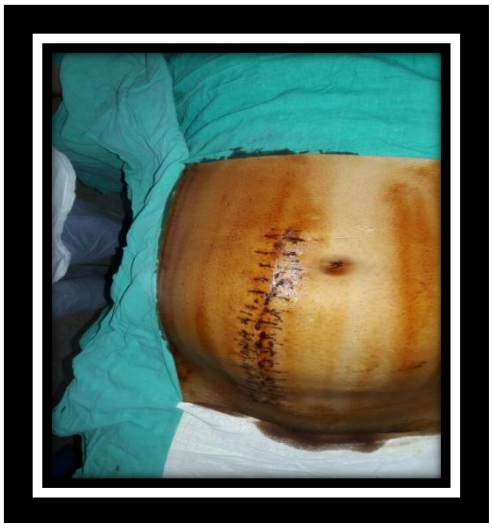

Fig.1: Image Showing The Abdominal Lump

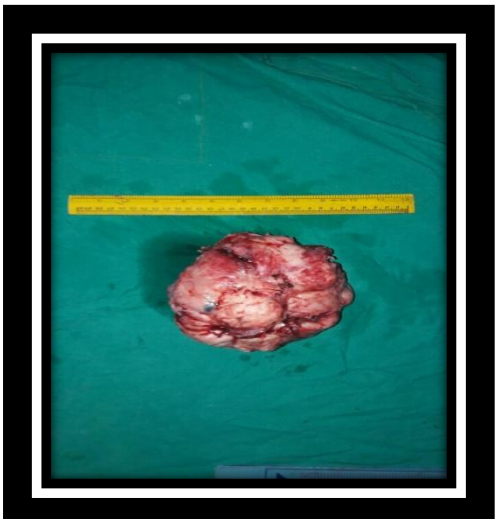

Fig:2 Gross Image Of The Lump Excised

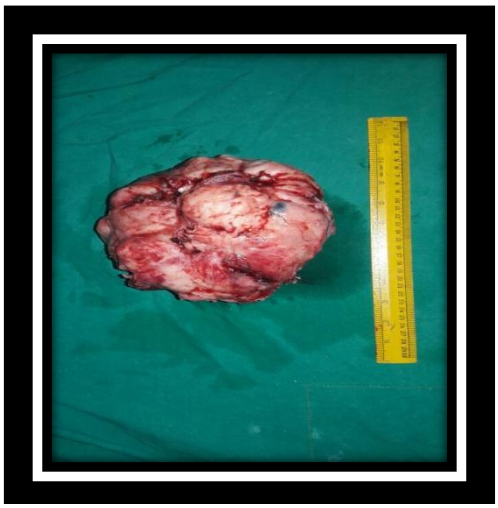

Fig 3 Gross Image Of The Lump Excised

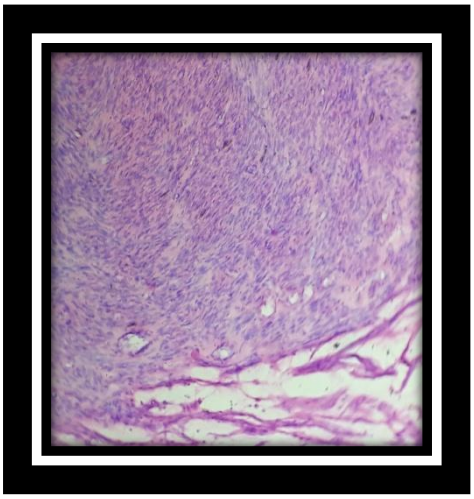

Fig:4 Histopathological Specimen of the Lump Showing Smooth Muscle Proliferation With Myxoid Changes

Fig: 5 Actin Staining of the Specimen

Fig:6 Desmin Staining Of The Specimen

Discussion

Primary leiomyoma of the ovary is a very rare benign tumour. Most ovarian leiomyoma described in literature are asymptomatic and discovered incidentally. [4,5]. In symptomatic cases, clinical presentations are variable like abdominal pain, a palpable mass, hydronephrosis, elevated CA-125, hydrothorax, and ascites. [4,6,7,11,12]. When present as mass, usually these tumours are smaller than 3 cm.[5,13]. In present case, patient presented with a mass of approximately 15cm × 15cm × 10 cm size . Such massive enlargement occurs due to progressive degeneration and cyst formation with accumulation of fluid, rather than active growth of the tumour cells. Most of these tumors are unilateral.[6]. But most of the bilateral cases are also reported in young patients. Usually the presentation of ovarian leiomyoma occurs in the premenopausal, childbearing years as in the present case . This is also the common age for developing uterine leiomyoma. There is associ-ation of ovarian leiomyoma and intrauterine leiomyoma. [13,15]. But in our case the uterus appears normal.

The origin of ovarian leiomyoma is not well known. Some theories hypothesize that the tumor may originate from hilar blood vessels, smooth muscle metaplasia of ovarian stroma, or smooth muscle-like theca externa cells. Its association with uterine leiomyoma may suggest that they share the same mechanisms of development. [4-10]. This theory is explained by the rapid growth of such tumors during pregnancy and their positivity for estrogen and/or progesterone receptors. [14.]

Because of the rarity of the condition, primary ovarian leiomyomas are not diagnosed initially by ultrasonography or radiography. Ultrasound is the best diagnostic modalities for pelvic organ masses, but in ovarian leiomyomas, it is difficult to distinguish ovarian leiomyomas from other ovarian tumors. Even on CECT, it is difficult to dist-inguish ovarian leiomyomas from other ovarian masses, and in some cases, the ovarian mass is reported as malignancy. Despite its rarity, leiomyosarcoma, which has a characteristic microscopic appearance, should also be considered in the differential diagnosis. In present case there is no atypia or pleomorphism, and mitotic count and necrosis are absent which are the characteristics of leiomyosarcoma.[4,5,15.]

Apart from leiomyoma there are other ovarian tumors that show a spindle cell microscopic appearance. Fibroma is the most common ovarian spindle cell neoplasm, but other neoplasms of the sex cord-stromal group may contain spindle cells and the differential diagnoses may include thecoma, granulosa cell tumor, Sertoli-Leydig cell tumor, sclerosing stromal tumor, and signet-ring stromal tumor. [5.]

Immunohistochemistry was stated to be useful in establishing our diagnosis in this case. Desmin

shows diffuse positivity in leiomyomas, whereas fibromas are typically negative or only focally positive. Smooth muscle actin (SMA) is often positive in both leiomyomas and fibromas and it is not useful in differential diagnosis. Cellular thecoma could be also considered in differential diagnosis but thecoma does not express smooth muscle actin and expresses α-inhibin and calretinin. [2,4,5,6,15].

Conclusion

The present study presents a rare case of primary ovarian leiomyoma having unresolved origin. Preoperative diagnosis is very difficult due to rarity. Despite its rarity, ovarian leiomyoma should be considered in the differential diagnosis of ovarian spindle cell tumors. An immunohisto-chemical analysis is recommended for definitive diagnosis as was performed in the present case.

Consent: Written informed consent was obtained from the patient for publication of this case report and accompanying images.

Conflict of Interest: The authors declare that they have no competing interests.

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