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Original Research Paper

Pathology

PRIMARY OVARIAN LEIOMYOMA- CASE REPORT OF A COMMON TUMOUR IN AN UNCOMMON LOCATION

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ABSTRACT Primary ovarian leiomyoma is an unusual tumour making up 0.5 to 1% of all benign ovarian neoplasms. Here we report a case of a perimenopausal lady with incidentally detected ovarian leiomyoma. Microscopy complemented with immunohistochemistry play an important role in their diagnosis.

KEYWORDS : leiomyoma, ovary, extrauterine

INTRODUCTION

Primary leiomyoma of the ovary is a rare tumour, accounting for about 0.5–1% of all the benign ovarian tumours. Approximately 70 cases have been reported in the literature [1,2]. As these tumours are usually very small in size, they may be missed during the routine evaluation of the surgical oophorectomy specimens [3,4,5]. Here, we report a case of primary ovarian leiomyoma which was diagnosed incidentally on histopathological examination.

Case Study

A 46 year old lady, para 2 living 2, presented with abnormal uterine bleeding from 3 months. Per speculum examination revealed healthy vagina and cervix with bleeding from the external os. Per vaginam examination revealed uterus corresponding to 14 weeks size with bilateral fornices being free and non-tender. Abdominal ultrasound scan showed enlarged uterus measuring 9.4 x 6.4 x 5.2cm with fibroids, endometrial thickness of 0.7cm. With the working diagnosis of fibroid uterus, considering the completed family status, she underwent total abdominal hysterctomy with bilateral salphingo-oophorectomy, specimen was sent for histopathological examination.

Grossly, two subserosal grey white lesions with whorled appearance were seen, left ovary showed a tiny grey-white nodule measuring 0.5 x 0.5 cm.

Histopathological examination of the left ovary displayed a tumour with fascicles of spindle cells with cigar-shaped nuclei amidst ovarian tissue (Figures 1 & 2). Special staining with Masson Trichrome showed characteristic red staining. Immunohistochemistry for Smooth Muscle Actin, Desmin were diffusely positive cytoplasmic staining suggestive of leiomyoma.

Examination of subserosal lesions in the uterus of the patient also showed similar findings.

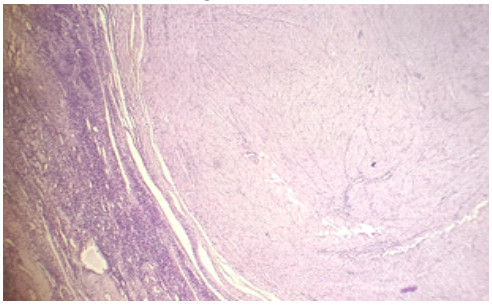

Figure 1: Histopathology showing interlacing smooth muscle fascicles amidst ovarian stroma. Haematoxylin and Eosin, x100.

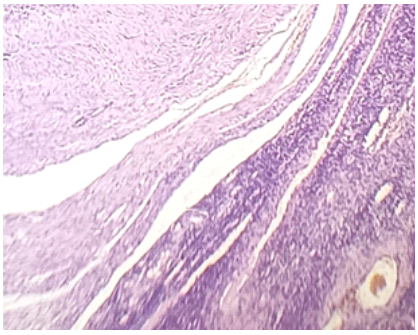

Figure 2: Histopathology showing leiomyoma adjacent to ovarian stroma with thick-walled, congested blood vessel.

DISCUSSION

Leiomyoma of ovary is a rare entity. Most patients are asymptomatic as these tumours usually measure <3 cm in diameter and rarely become large enough to present as a pelvic mass [4,5]. The ovarian leiomyoma in our case was too small to detect during surgery and hence was identified incidentally on gross and histopathologic examination. Rare presentations of this tumour include lower abdominal mass, ascites with hydrothorax, ascites with polymyositis, ascites with elevated CA125, or even hydronephrosis if the size is large [6]. Kurai et al. reported a leiomyoma of the ovary presented with Meigs syndrome, which disappeared after removal of the ovary [7]. This tumor most commonly occur in middle-aged women, usually are unilateral, and frequently (80% of cases) are coexistent with uterine leiomyomas. Bilateral tumours are usually observed in younger women, in whom coexistent uterine leiomyomas are usually absent [8,9]. Bilateral cases have not been reported in patients over 35 years of age [10]. In line with the literature, our patient was 40 years old and had unilateral ovarian leiomyoma along with coexisting subserosal uterine leiomyomas.

There are a number of theories of the origin of these tumors. Though its precise histogenesis is not known, some theories hypothesize that the tumor may originate from smooth muscle cells in the tunica media of the ovarian hilar blood vessels, or extremities of the ovarian ligament. Many other sites like undifferentiated germ cells in the ovarian stroma, remnants of the wolffian body, smooth muscle itself within the ovary and its ligaments have been considered as the origin of these tumors. Stroma of endometriosis and cortical smooth muscle metaplasia have also been proposed as other site of origin of these tumors [4,5,10]. Its association with uterine leiomyoma may suggest that they share the same mechanisms of development. This theory explained by the rapid growth of such tumors during pregnancy and their positivity for oestrogens and/or progesterone receptors [11].

Many patients with ovarian leiomyomas are nulli gravidas. This suggests that oestrogen may play a role in the development of ovarian leiomyomas. Another possible mechanism suggests that tumour may arise in developmentally abnormal ovaries [1, 12]. In our case, there was no developmental abnormality in ovary, normal ovarian tissue was present on histological examination.

Ovarian leiomyomas have to be distinguished from other spindle cell tumours as ovarian fibroma- thecomas, cellular fibromas, sclerosing stromal tumours, leiomyomas arising in the broad ligaments and uterine leiomyomas becoming parasites on the ovary [13,2]. Ideally a primary ovarian leiomyoma should be entirely within the ovary, with no similar lesions in the uterus or elsewhere [2]. The co-existence of this tumour with a uterine leiomyoma has been reported by several authors [11,14].

Secondary changes such as hyalinization, haemorrhage and cystic changes may be seen, particularly so in the larger tumours. Microscopically, the smooth muscle cells are uniformly spindle shaped with blunt-ended or cigar shaped nuclei. Mitotic activity is absent or very low and nuclear pleomorphisms are not a feature. The correct diagnosis of ovarian leiomyoma requires recognition of the smooth muscle nature of the tumour [2]. In our case no secondary changes noted in the lesion and microscopically there was no evidence of atypia or abnormal mitosis.

Immunohistochemical marker like desmin, may be useful in distinction between leiomyomas and fibromatous tumors. Desmin shows diffuse positivity in leiomyomas, whereas fibromatous tumors are typically negative or only focally positive. Smooth muscle actin is often positive in both leiomyomas and fibromatous tumors 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 [15,16,17]. In the present case, immunohistochemical analysis with SMA and desmin showed diffuse positivity and confirmed our diagnosis of ovarian leiomyoma.

CONCLUSIONS

Ovarian leiomyoma is a very rare tumor of unknown histological origin. Despite its rarity, this tumour should be considered in the differential diagnosis of ovarian spindle cell lesions. Further immunohistochemical analysis generally are useful for definitive diagnosis.

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