Case Report

Large ovarian leiomyoma in young woman

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Abstract

Leiomyoma is benign mesenchymal tumor, that frequently occur in uterus but it rarely happens in ovary. Ovarian leiomyomas are seen concomitantly with uterine leiomyoma in about 78% of cases. They often discover incidentally but their most clinical manifestations are abdominal pain and palpable mass. Herein, we reported a large ovarian leiomyoma in a 22-year-old woman with abdominal pain and palpable mass at lower abdominal region. Computed tomography scan revealed large adnexal mass. Microscopic appearance was typical for leiomyoma but because its rarity in ovary the immunohistochemical staining was done. Major differential diagnostic considerations for this tumor in ovary are fibroma/thecoma, sclerosing stromal tumor, and leiomyosarcoma. The immunohistochemical staining with desmin, inhibin, and α-smooth muscle actin are helpful to rule out this differential diagnosis.

Key Words: Desmin, leiomyoma, ovary, α-smooth muscle actin

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INTRODUCTION

Leiomyoma has low prevalence in the ovarian tumors, it accounts for 0.5-1% of all benign ovarian tumors.[1] In literature, reported case are between 17 and 79 years old.[2,3]

They may reach big size up to 11 kg but most of them are small, unilateral, measure about few millimeters in diameter, and usually occur in premenopausal women. They are commonly bilateral if they occur in pediatric/young adult group, no bilateral ovarian leiomyoma have been reported in patients over the age of 35 years old.[1,4] Ovarian leiomyoma concomitantly seen with uterine leiomyoma (78%) that suggest an identical hormonal stimulation.[2,5]

The probably origin of these smooth muscle include ovarian hilar blood vessels, ovarian ligament, smooth muscle cells or multipotential cells in the ovarian stroma, undifferentiated germ cells (but co-existence with germ cell tumors has not been reported yet), 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.[1,5]

In some instance, magnetic resonance imaging can help to determine the preoperative diagnosis but it may be impossible to delimitate precise origin of large tumor (uterus subserousal versus ovary). On magnetic resonance imaging, the tumor appeared as well-circumscribed low signal intensity mass on T1-weighted imaging, with mixed signal intensity on

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T2-weighted imaging. Areas of high signal intensity on T2-weighted images corresponded to degeneration of the leiomyoma.[6]

CASE REPORT

A 22-year-old woman was referred to our hospital for abdominal pain and palpable mass at lower abdominal region. Biochemistry laboratory results were not contributory. On computed tomography scan a large mass was revealed close to uterine. The patient was undergone surgical treatment and the large well circumscribed ovarian mass was excited. The left ovary was occupied by this mass without any attachment to other organs.

On gross examination, the mass was grayish white and measured about 14.5 × 11.5 × 10 cm. the mass had whorling pattern in cut surface. There was no any hemorrhage or necrosis [Figure 1].

On microscopic examination, the tumor show interlacing bundles of spindle cells with some area of hyalinization. There were no mitosis, necrosis, and atypia [Figure 2].

For confirming the initial diagnosis of ovarian leiomyoma and rule out other ovarian sex cord-stromal tumor, immunohistochemical staining for actin, desmin, and inhibin was performed. The cells showed positive staining for actin and desmin but not for inhibin, so the diagnosis of ovarian leiomyoma was confirmed.

DISCUSSION

Most ovarian leiomyomas have no symptoms and discover either during routine physical examination, incidentally at surgery, or at autopsy. In symptomatic cases that often present in large one, clinical manifestation are abdominal pain, palpable mass, hydronephrosis, elevated CA-125, Meigs' syndrome and polymyositis.[1,3,4,7,8]

Ovarian leiomyoma often misdiagnose preoperatively as pedunculated uterine myoma, ovarian fibroma or even ovarian endometrioma.[9]

Macroscopic and microscopic manifestations of ovarian leiomyoma are very characteristic, but because of its rarity, several other tumors should include in the differential diagnosis. The major differential diagnostic considerations for ovarian leiomyoma include leiomyosarcoma and sex-cord stromal tumors, such as fibroma/thecoma (particularly the small one, cellular or with diffuse fibrosis), sclerosing stromal tumor.[1,5]

To confirm the diagnosis and rule out the differential diagnosis the immunohistochemical staining with desmin, inhibin, and α-smooth muscle actin (α-SMA) or histochemical staining with Masson's trichrome should be done. The leiomyoma's cells will be stained with Masson's trichrome, desmin, and α-SMA.[5]

Desmin can be helpful especially, in distinction between leiomyomas and fibromatous tumors because desmin shows diffuse positivity in leiomyomas, whereas fibromatous tumors are typically negative or only focally positive. Because, SMA is often positive in both leiomyomas and fibromatous tumors, it is not useful in this regard. Other stromal tumor such as cellular thecoma could be also considered in differential diagnosis but they express α-inhibin and calretinin and dose not express smooth muscle actin.[1,10]

Ovarian leiomyomas must be also differentiated from leiomyosarcoma but due to the rarity of these tumors

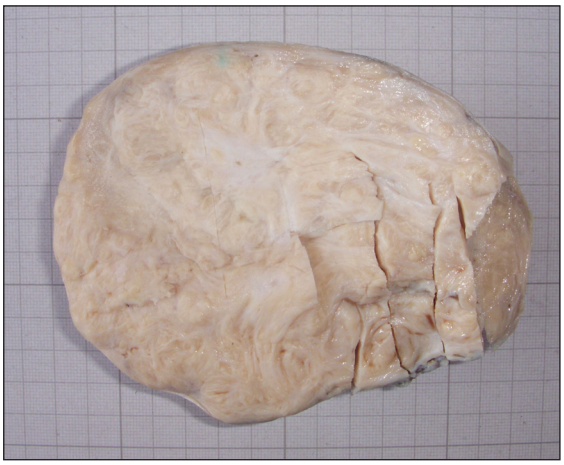

Figure 1: Grayish white mass with whorling pattern in cut surface

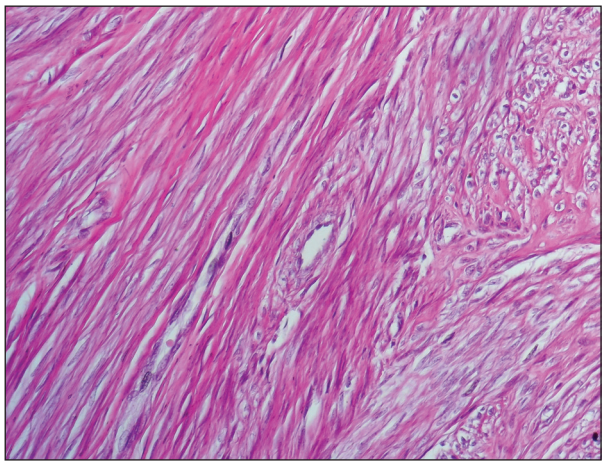

Figure 2: Interlacing bundles of spindle cells

histologic features of malignancy have not been well defined. Pathologists have traditionally used criteria that stress the mitotic count, but it is evident that some other criteria, such as cytological atypia and tumor necrosis must be used when considering the possibility of malignancy in a smooth muscle uterine tumor.[1]

Most of the patients undergone a salpingo-oophorectomy or an oophorectomy with or without hysterectomy despite the young age of affliction, and only minor of patients are submitted to an ovary-preserving surgery.[9-12]

CONCLUSION

Ovarian leiomyoma is a very rare tumor of unresolved origin. Despite its rarity, ovarian leiomyoma should be considered in the differential diagnosis of ovarian spindle cell tumors. Appropriate diagnosis in some cases requires additional immunohistochemical analysis for actin and desmin.

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