Primary giant leiomyoma of the ovary - case report

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Summary

Primary leiomyoma of the ovary, which is of unknown origin, is an extremely rare tumor of ovary. We report a rare case of giant primary ovarian leiomyoma with an unusual presentation, ascites, elevated CA125 and discuss the preoperative imaging findings. A 45-year-old woman was referred for evaluation of an adnexal mass of 8 x 9 cm with ascites and elevated CA125 levels. Preoperative imaging studies were in accordance with fibroma/thecoma. At laparotomy total abdominal hysterectomy and bilateral salpingo-oophorectomy were performed. Histological and immunhistochemical examination revealed primary ovarian leiomyoma.

Key words: Ovarian leiomyoma; Ovarian neoplasm; Carbohydrate antigen; Ascites.

Introduction

Primary leiomyoma of the ovary, which is of unknown origin, is an extremely rare tumor of the ovary. Leiomyomas of the ovary are usually smaller than 3 cm and incidentally found [1]. Preoperative diagnosis is difficult and imaging features of this tumor are not well established [2]. To our knowledge there are only two cases of ovarian leiomyoma with ascites and three cases with Meigs syndrome. We report a rare case of giant primary ovarian leiomyoma with an unusual presentation, ascites, elevated CA125 and discuss the preoperative imaging findings.

Case Report

A 45-year-old woman, gravida 8, para 8, was referred for evaluation of an adnexal mass. Gynecologic examination revealed an 8 x 9 cm mobile, solid adnexal mass with regular contours. Ascites and an isoechogenic mass of 88 x 90 mm were noted at transvaginal ultrasonographic examination. Her laboratory examination was normal, except for a CA125 level of 70.6. Computerized tomography (CT) revealed a solid homogeneous mass of 94 x 80 mm with a regular surface, pressing uterine fundus and bladder, in association with ascites.

A midline laparotomy was undertaken which revealed a left ovarian solid mass with 300 cc of clear ascites. The surface of the mass was dull, whitish and regular. Ascites was aspirated for cytological examination. Exploration of the abdomen was normal except for the left ovary. Left salpingo-oophorectomy was performed for frozen examination which was reported to be benign. Surgery was completed with contralateral salpingo-oophorectomy and hysterectomy. The postoperative course was uneventful and the patient was discharged three days after surgery. Pathological examination revealed a primary left ovarian leiomyoma. On microscopic examination, the ovarian tumor consisted of packets or bundles of smooth muscle fiber without significant cellular pleomorphism, necrosis, or mitotic activity (Figure 1a). Immunohistochemically, smooth muscle actin (SMA) was positive in tumor cells (Figure 1b).

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Discussion

Smooth muscle tumors of the ovary are rare and generally benign and unilateral [3]. It is difficult to estimate the incidence of these tumors because there are an important number of cases that are likely to be unreported or misdiagnosed as fibroma [2]. Primary ovarian leiomyomas are encountered in women aged 20 and 65 years [1, 4].

The origin of ovarian leiomyoma is uncertain. It is probably derived from smooth muscle cells present in the cortical stroma in the hylus, in the corpus luteum or in the ovarian ligament [5]. Other theories include smooth muscle metaplasia in endometriotic stroma, smooth muscle-like theca externa cells, smooth muscle metaplasia of ovarian stroma, and smooth muscle present in mature cystic teratomas [3]. Positive staining for smooth muscle actin is useful to distinguish ovarian leiomyoma from fibroma. In cases of doubt, desmin which is strongly positive in smooth muscle tumors may be further investigated. These tumors encompass the same varied histologic spectrum as their uterine counterparts [4]. They can exhibit degenerative changes. Although these tumors should be differentiated from ovarian fibromas, thecomas and subserous myomas, once the diagnosis is ovarian smooth muscle tumor the differential diagnosis of leiomyosarcoma should also be made. There are limited data on ovarian leiomyomas with high mitotic activity and bizarre nuclei.

There are a few cases that presented with ascites. Ascites are generally thought to be produced by the tumor and transudated through its surface. Usually tumors of 10 cm or more are to be associated with ascites [5]. As in our case, an adnexal mass of ovarian leiomyoma presenting with ascites and slightly elevated CA125 levels should be differentiated from ovarian malignancies. Immunhistochemical staining for CA125 suggested that elevated CA125 originated from the peritoneum

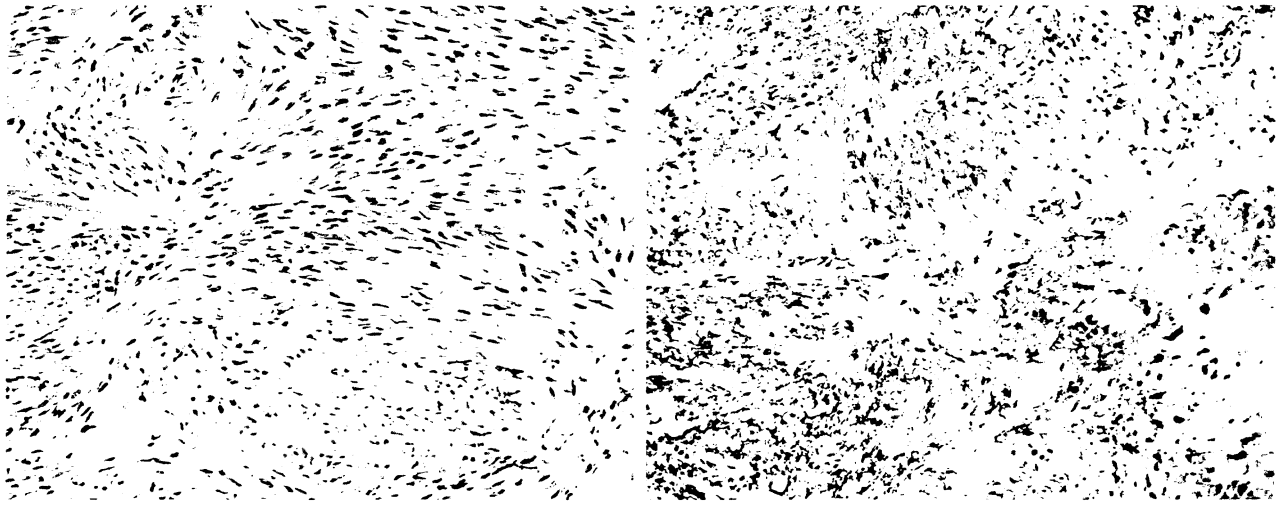

Figure 2a - Ovarian leiomyoma: Ovarian tumor consisting of packets or bundles of smooth muscle fiber without significant cellular pleomorphism, necrosis or mitotic activity (H&E x 20). 2b. – Ovarian leiomyoma: Immunohistochemically, smooth muscle actin (SMA) is positive in tumor cells (immunoperoxidase x 20).

rather than the fibroma [2]. Ovarian smooth muscle tumors may exhibit estrogen and progesterone receptors, and may enlarge rapidly during pregnancy.

Ovarian leiomyomas are treated surgically to date. All cases are treated with salpingo-oophorectomy, except for three cases treated with enucleation. There is no recurrence after complete removal of the tumor, however recurrence can be encountered after limited surgery.

In conclusion, ovarian leiomyomas are rare tumors of the ovary and the differential diagnosis from fibroma and thecoma should be made. Immunhistochemical analysis is the principal examination for the differential diagnosis. These smooth muscle tumors may also present with ascites and elevated CA125 masquerading as ovarian cancer. Salpingo-oophorectomy should be the treatment of choice to remove the tumor completely.

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