Case Report

Ovarian Leiomyoma with cystic degeneration - a case report

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ABSTRACT

Primary leiomyoma of the ovary is a rare benign tumour and accounts for 0.5-1% of all benign ovarian neoplasms. As their uterine counterparts, ovarian leiomyomas also exhibit the same varied histological spectrum. Cystic degeneration accounts for 4% in leiomyomas. We herein report a case of ovarian leiomyoma with cystic degeneration. The predominant cystic and myxoid nature of the lesion in our case mimicked a primary surface epithelial neoplasm on gross examination. Extensive degeneration in ovarian leiomyoma is unusual and one should consider this rare possibility when dealing with a cystic ovarian mass.

Keywords: leiomyoma, ovary, cystic, degeneration.

INTRODUCTION

Primary leiomyoma of the ovary is a rare benign tumour and accounts for 0.5-1% of all benign ovarian neoplasms. Most of them are small and remain asymptomatic or are detected incidentally at surgery or autopsy [1]. As their uterine counterparts, ovarian leiomyomas also exhibit the same varied histological spectrum. Usually these tumours are small in size but rare ones may become extremely large due to progressive degenerations and cyst formation, simulating an ovarian malignancy [1-3]. We herein report a case of leiomyoma with cystic degeneration mimicking an ovarian mucinous neoplasm on gross inspection.

CASE REPORT

A 44 years old lady presented with abdominal pain since 3 months. The pelvic examination and ultrasonography revealed presence of a right ovarian cyst. Her serum tumour markers were within the normal range. Abdominal hysterectomy with bilateral salphingo-oophorectomy was performed and sent for histopathological examination.

Grossly, the right ovary was completely replaced by a large cystic mass measuring 24x14x11cm having a smooth outer surface and prominent vasculature. Cut surface of the ovarian mass had a spongy appearance with multiloculated variable sized cysts containing thick viscid mucinous material (Fig.1). Few cysts contained clear serous fluid. Periphery of the mass revealed few grey white solid areas. The left ovary and both fallopian tubes were unremarkable.

Cut section of the uterus revealed an intramural leiomyoma of size 1x1 cm.

Figure 1: Gross- Ovarian mass on cut surface showing spongy,cystic appearance with mucin

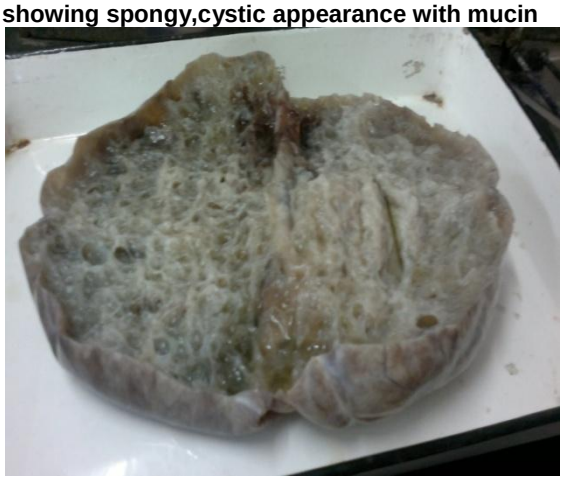


Figure 2: 10X-microphotograph showing spindle cells in intersecting fascicles with cystic areas

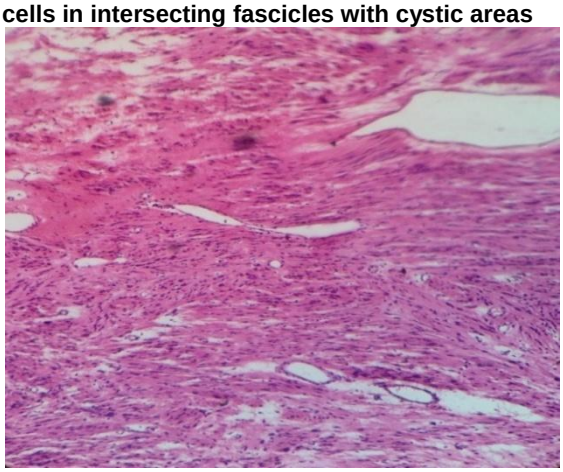


Figure 3: Immunohistochemistry- Tumour cells showing cytoplasmic positivity for Smooth muscle Actin

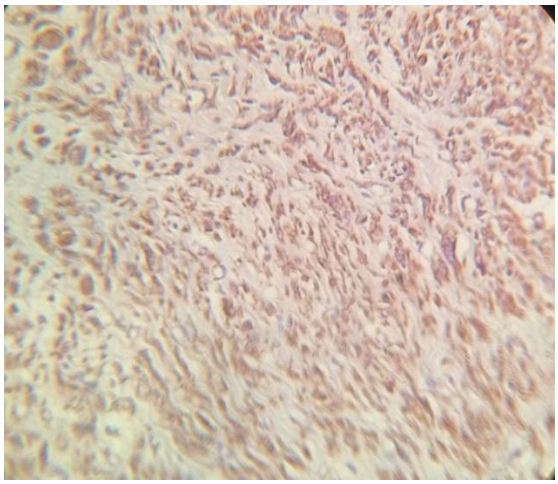
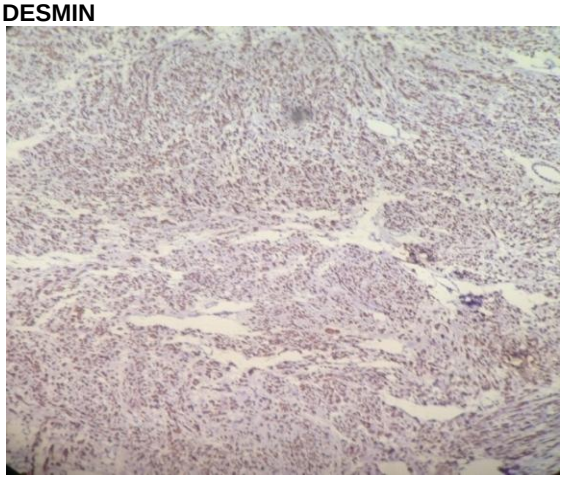


Figure 4: Immunohistochemistry- Tumour cells showing diffuse cytoplasmic positivity for DESMIN



Microscopic examination of the ovarian mass showed multiple cystic spaces, surrounded by spindle cells of variable cellularity. The cystic spaces lacked the true epithelial lining and contained mucoid and edema fluid in the lumina. Few cellular areas were seen with spindle cells arranged in intersecting fascicles. The spindle cells had regular, elongated, blunt ended nuclei with moderate amount of eosinophilic cytoplasm (Fig.2). Significant nuclear atypia, nuclear pleomorphism and mitotic activity were absent. Considerable part of the tumour exhibited edematous, cystic and myxoid degeneration with foci of hemorrhages. Blood vessels were thickened and hyalinised. Normal ovarian tissue was not found.

Uterus revealed cystic atrophy with intramural leiomyoma. Bilateral tubes and left ovary were unremarkable.

Masson trichrome stain in ovarian mass helped to identify the spindle cells as smooth muscles which were further confirmed by immunohistochemical stains. Immunohistochemistry showed a moderate to diffuse cytoplasmic positivity for Smooth Muscle Actin and Desmin (Fig 3&4) and thus a diagnosis of ovarian leiomyoma with cystic degeneration was established.

DISCUSSION

Leiomyoma is a smooth muscle tumour that most commonly affects the uterus, cervix and broad ligaments in women of reproductive age. Primary leiomyoma of the ovary accounts for 0.5-1% of all the benign ovarian neoplasms [1]. The likely theory is that they arise from the smooth muscles of the ovarian blood vessels or smooth muscles of the ovarian ligament, but other possible origins include multipotential cells in ovarian stroma, undifferentiated germ cells or cortical smooth muscle metaplasia. Endometriotic cysts are also suggested to trigger metaplasia of the surrounding stroma into smooth muscle cells. Additionally, teratomas and smooth muscle in the walls of mucinous cystic teratomas may explain their occurrence in the ovary in some cases [2].

The age incidence of ovarian leiomyoma varies between 20-65 years and about 16% occur in postmenopausal age. Mostly these tumours are unilateral and small in size, thereby remaining asymoptomatic or discovered as an incidental finding at surgery or autopsy [1]. However massive enlargement may occur due to progressive degenerations and cyst formation leading to variable clinical presentation as abdominal pain, a palpable mass, hydronephrosis, hydrothorax and ascites.

As their uterine counterparts, ovarian leiomyomas also exhibit a varied spectrum of histologic features. As these tumours enlarge, they outgrow their blood supply resulting in various degenerative changes like hyaline, cystic, myxoid and dystrophic calcification. Hyaline degeneration is the commonest whereas cystic degeneration accounts for 4% in leiomyomas and is considered as an extreme sequel of edema [3]. Very few cases are reported of ovarian leiomyoma showing cystic degeneration. The predominant cystic and myxoid nature of the lesion in our case led to a presumptive diagnosis of a primary surface epithelial neoplasm on gross examination.

Coexistence of an ovarian leiomyoma with uterine leiomyomas has been reported by several authors [2] and was also noted in our case.

Spindle cells of ovarian leiomyoma need to be distinguished from ovarian fibroma and sclerosing stromal tumours. Immunohistochemical analysis demonstrating smooth muscle differentiation confirms the diagnosis.

Ovarian leiomyoma must also be differentiated from a pedunculated subserosal uterine leiomyoma, which may have lost its original attachment and become attached to ovary. Presence of ovarian tissue thus helps in differentiating them. However, ovarian tissue was not identified in our case due to extensive cystic degeneration which had replaced the entire ovary.

Leiomyosarcoma, spindle cell carcinoma and metastatic GIST also should be excluded in case of large tumours. Lerwill et al [4] described smooth muscle tumours of ovary exhibiting the same histological spectrum as their uterine counterparts; however, unlike cases of uterine leiomyoms, the histological features of malignancy of ovarian smooth muscle tumours have not been well defined.

Usually ovarian leiomyomas have a benign course and complete surgical resection is the preferred treatment.

CONCLUSION

We herein report a rare case of ovarian leiomyoma with cystic degeneration, simulating an ovarian epithelial neoplasm on gross appearance. This is an extremely uncommon phenomenon and solid areas should be carefully inspected and adequately sampled. Appropriate immunohistochemical analysis helps in correct diagnosis. Extensive degeneration in ovarian leiomyoma is unusual and one should consider this rare possibility when dealing with a cystic ovarian mass.

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