

Ovarian Fibrothecoma: A Case Report & Review of Literature

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Abstract: Fibrothecomas are uncommon tumors of gonadal stromal cell origin accounting for 3–4% of all ovarian tumors and in 90% of the cases are unilateral. We are reporting a case of fibrothecoma in a 55 year of female presenting with complaint of abdominal distention & huge pelvic mass since long duration, which must be differentiated from massive edema of the ovary and sclerosing stromal tumor of the ovary. USG and CT findings show multilobulated ovarian mass. Omental biopsy and ascitic fluid was negative for malignant cells. Microscopically, the ovarian mass was composed of a cellular and hyalinized hypocellular area. Histopathological diagnosis was given as Luteinizing fibrothecoma.

Keywords: Fibrothecoma, Ovarian mass.

INTRODUCTION

Sex cord stromal tumours account for approximately 6% of all ovarian tumors. These tumors are derived from the coelomic epithelium or the mesenchymal cells of the embryonic gonads. The most common types are granulosa cell tumors, fibrothecomas and Sertoli-Leydig cell tumors [1]. These tumours contain elements of sex cord and stromal derivation and have varied cytologic atypia and mitotic activity.

Ovarian fibrothecomas are benign tumours composed of an admixture of fibrous and thecomatous elements. They are rarely malignant and in 90% of the cases are unilateral [2]. We are presenting here a case of benign ovarian fibrothecoma in a patient with a presumed diagnosis of malignancy.

CASE REPORT

A 55 year-old woman presented with a history of increasing abdominal distention and a lump in the lower abdomen. General physical and systemic examination was normal. There were no associated gastrointestinal symptoms or vaginal bleeding. On examination, she had gross abdominal distention consistent with ascites.

Complete hemogram and routine blood biochemistry of the patient were within normal limits. CA-125 was 81U/ml. Abdominal and pelvic ultrasound

demonstrated a large mass in left ovary with predominantly solid mass with cystic areas. The right ovary was normal. Computed tomography (CT) also showed a large, mainly solid, complex mass in the lower abdomen/pelvis displacing the uterus to the right side with extensive ascites. Cytology of the peritoneal fluid was found to be negative for malignant cells.

The patient underwent exploratory laparotomy. At exploratory laparotomy, huge left side ovarian mass was found and a total hysterectomy with bilateral salpingectomy along left ovarian mass removal was done. No adhesions were present. No fluid was present in pouch of Douglas. Scrapings obtained from the fresh cut surface of tumors sent in 10% buffered formalin were smeared uniformly on to glass slide. Smears were then immediately fixed in 95% ethyl alcohol and stained with hematoxylin and eosin (H and E stain). Scrape cytology showed hypercellular smears comprising of spindle cell population with benign features. Omental biopsy was also done to rule out any metastatic deposits nearby, but was found to be negative. Histopathological examination show multilobulated bosselated ovarian mass measuring 23 x 14 x 11 cm (Fig. 1), Cut section of mass was partly cystic and partly solid (Fig. 2). Solid areas were grayish yellow and firm in consistency. Cyst was multiloculated were filled with serous fluid like material.



Fig. 1: Gross photograph of ovarian mass



Fig. 2: Cut section of ovary showing partly solid & partly cystic areas

Multiple sections were taken from ovarian mass, showing stromal spindle cells arranged in fascicles and storiform pattern along with round to oval to polyhedral cells with moderate amount of pale cytoplasm, round to oval nucleus (Fig. 3). Cells show no significant atypia or mitotic activity. Few cystic areas lined by mucinous lining were also present. Focal areas of hyalinization were also seen. Benign luteinizing fibrothecoma was given as diagnosis. Omental biopsy revealed areas of inflammation and capillary proliferation. Postoperative ultrasonography of abdomen and pelvis was normal. Postoperatively patient is uneventful and has been advised close follow-up.



Fig. 3: Microphotograph showing both cellular area and an edematous hyalinized hypocellular area, showing stromal spindle cells arranged in fascicles and storiform pattern (H & E, 40X)

DISCUSSION

The intraovarian matrix originates from mesenchyma of embryonic gonads and sex cords. The sex cords produce sertoli and granulosa cells, while mesenchyma is the source of origin of leydig cells, theca cells and fibroblasts. Fibromas of the ovary are unilateral tumours in about 90% of cases and are usually solid, encapsulated, hard, gray-white masses covered by intact ovarian serosa. Microscopically, they are composed of closely packed well-differentiated fibroblasts arranged in 'feather stitched' pattern along with mild interspersed collagenous connective tissue, with focal areas showing thecal differentiation. Myxoid change and hyaline bands may accompany. The tumor cells may contain small quantities of lipid, similar to that of thecoma [3].

Thecomas are solid yellow masses with accompanying cystic degeneration in some cases. Microscopic examination of the thecoma are composed of oval or rounded tumor cells with abundant pale or vacuolated cytoplasm containing lipid droplets. The nuclei vary from round to spindle shaped and exhibit little or no atypia. Reticulin stain helps to identify of individual cells by reticulin fibers, giving a box-in-appearance [3, 4].

Fibrothecomas occur predominately in older postmenopausal women [2]. Fibrothecoma forms intermediate group and are composed of admixture of both fibrous and thecomatous elements. Fibrothecomas are round, oval or lobulated solid tumors that are associated with fluid in the pouch of Douglas, and most manifest minimal to moderate vascularization. A fibrothecoma with atypical ultrasound appearance may be mistaken for a malignancy, in particular if associated with fluid in the pouch of Douglas or ascites and raised CA 125 levels. Ovarian fibrothecomas can be associated with Meigs' syndrome, which is defined as the triad of ascites, unilateral hydrothorax, and benign ovarian tumor⁵. Meigs' syndrome resolves with the removal of the benign ovarian mass. The presence of ascites, such as in Meigs' syndrome, can cause inflammation of the peritoneum and subsequently elevate the serum CA-125. However, CA-125 being a nonspecific test, can also be elevated in a number of nonmalignant conditions, including liver disease, pelvic inflammatory disease, benign fibroids, or pregnancy. CA-125 is expressed by mesothelial cells of the serosal membrane in pleura, pericardium, and peritoneum, and its production is increased with inflammation of these structures [6, 7].

Histologically, these tumors are characterized by the presence of spindle, oval or round cells forming various amounts of collagen and a smaller population of theca cells that contain intracellular lipid. Edema and cystic degeneration are relatively common especially in

large fibrothecomas whereas calcification and hemorrhage are rarely observed.

Fibrothecoma with massive edema must be differentiated from massive edema of the ovary, ovarian myxoma and sclerosing stromal tumor. Massive edema of the ovary is characterized by a proliferation of ovarian stromal cells with marked intercellular edema [8]. Massive edema of the ovary almost always contains follicles, corpora lutea and corpora albicans. Ovarian myxoma shows a myxoid, moderate cellular proliferation of spindle and stellate cells along with areas of fibrosis, hemorrhage and delicate vascular spaces. Sclerosing stromal tumors are rare ovarian neoplasms occurring predominantly in young women, and their hypocellular and edematous area may be confused with edematous area of fibrothecoma. The histologic features of sclerosing stromal tumor are a pseudolobular pattern of cellular areas and hypocellular areas, prominent vasculature with a hemangiopericytomatous pattern and cellular heterogeneity of vacuolated luteinized theca-like cells and spindle-shaped fibroblast-like cells in the cellular area [8, 9].

The tumor cells are strongly positive for vimentin, occasionally and focally positive for α -SMA and desmin. The nuclei of thecoma cells are also positive for estrogen and progesterone receptors. Fibrothecoma is negative for cytokeratin, CEA, EMA, Factor VIII-related antigen, and S-100 protein. However, massive edema and sclerosing stromal tumor also reveal similar reactivity [10, 11].

CONCLUSION

Fibrothecoma with massive edema must be differentiated from massive edema of the ovary, ovarian myxoma and sclerosing stromal tumor. Massive edema of the ovary is characterized by a proliferation of ovarian stromal cells with marked intercellular edema

REFERENCES

1. Outwater EK, Wagner BJ, Mannion C, McLarney JK, Kim B; Sex cord-stromal and steroid cell tumors of the ovary. *Radiographics*, 1998; 18(6): 1523–1546.
2. Salemis NS, Panagiotopoulos N, Papamichail V, Kiriakopoulos K, Niakas E; Bilateral ovarian fibrothecoma. An uncommon cause of a large pelvic mass. *Int J Surg Case Rep.*, 2011; 2(3): 29–31.
3. Rosai J; Female reproductive system: Rosai and Ackerman surgical pathology. Volume 1, Elsevier Ltd., 2004: 1695-1698.
4. Scully RE, Young RH, Clement PB; Tumors of the ovary, maldeveloped gonads, fallopian tube and broad ligament. Washington DC, AFIP, 1996: 189-201.
5. Abad A, Cazorla E, Ruiz F, Aznar I, Asins E, Llixiona J; 'Meigs' syndrome with elevated CA125: case report and review of the literature. *European Journal of Obstetrics Gynecology and Reproductive Biology*, 1999; 82(1): 97–99.
6. Takemori M, Nishimura R, Hasegawa K; Ovarian thecoma with ascites and high serum levels of CA125. *Archives of Gynecology and Obstetrics*, 2000; 26(1): 42–44.
7. Morán-Mendoza A, Alvarado-Luna G, Calderillo-Ruiz G, Serrano-Olvera A, López-Graniel MC, Gallardo-Rincón D; Elevated CA125 level associated with Meigs' syndrome: case report and review of the literature. *International Journal of Gynecological Cancer*, 2006; 16(1): 315–318.
8. Nogales FF, Martín-Sances L, Mendoza-García E, Salamanca A, González-Núñez MA, Pardo Mindan FJ; Massive ovarian oedema. *Histopathology*, 1996; 28(3): 229-234.
9. Kawauchi S, Tsuji T, Kaku T, Kamura T, Nakano H, Tsuneyoshi M; Sclerosing stromal tumor of the ovary : a clinicopathologic, immunohistochemical, ultrastructural, and cytogenetic analysis with special reference to its vasculature. *Am J Surg Pathol.*, 1998; 22(1): 83-92.
10. Saitoh A, Tsutsumi Y, Osamura RY, Watanabe K; Sclerosing stromal tumor of the ovary. Immunohistochemical and electron-microscopic demonstration of smooth-muscle differentiation. *Arch Pathol Lab Med.*, 1989; 113(4): 372-376.
11. Webb MJ; Ovarian remnant syndrome. *Aust NZJ Obstet Gynaecol.*, 1989; 29(4): 433-435.