Case Report

Massive ovarian edema masquerading as fibroma: A rare case report

Nidhi Raina, Kavita Mardi, Akshay Rana, Pooja Chauhan

Department of Pathology, Indira Gandhi Medical College, Shimla, Himachal Pradesh, India

ABSTRACT

Massive edema of the ovary is a rare benign entity affecting young women. Most cases are thought to result from venous and lymphatic obstruction. The ultrasonographic appearance is nonspecific and can mimic neoplasia, and the definitive diagnosis requires histological examination. Massive ovarian edema should be suspected in women in reproductive age group presenting with solid enlargement of the ovary. Awareness of this rare entity among surgeons and pathologists is essential in the diagnosis and to avoid unnecessary oophorectomy. We describe one such rare case of massive ovarian edema in a 22-year-old female.

Key words: Edema, massive ovary, oophorectomy

INTRODUCTION

Ovarian edema was first described by Kalstone *et al.* in 1969.[1] About 100 cases of this entity have been reported. Massive ovarian edema is considered to be a nonneoplastic lesion characterized by a tumor such as enlargement of one or occasionally both ovaries due to the accumulation of edema fluid within the stroma.[2] The etiology is still obscure, but some suggest recurrent ovarian torsions to be responsible for it. Radiologically, it usually cannot be differentiated from other malignant lesions. Ultrasonographic findings are usually nonspecific and give the impression of a solid lesion. It is often misdiagnosed for malignancy, thus, posing the young patient at risk for overtreatment with resultant loss of hormonal function and fertility. We report one such rare case of ovarian edema in a 22-year-old female who was diagnosed radiologically and clinically with ovarian tumor and underwent oophorectomy.

Address for correspondence: Dr. Nidhi Raina,
Room No. 108, Department of Pathology, Indira Gandhi Medical College, Shimla - 171 001, Himachal Pradesh, India.
E-mail: simply.nid@gmail.com

Access this article online

Quick Response Code:

Website: www.ccij-online.org

DOI: 10.4103/2278-0513.176251

CASE REPORT

A 22-year-old unmarried nulliparous patient was admitted to the gynecology department with acute pain abdomen. On ultrasonography, uterus measured 5.5 cm × 4.6 cm × 3.4 cm. Left adnexa showed a solid, heterogeneous mainly hypoechoic mass of 8 cm × 3.2 cm with peripheral follicle and decreased vascularity. There was free fluid in the pouch of Douglas. A diagnosis of solid ovarian tumor suggestive of fibroma was made. The patient underwent exploratory laparotomy. Oophorectomy was done, and omental biopsy was taken, which were then send for histopathological examination.

We received unilateral ovary measuring 8.5 cm × 4.5 cm × 2 cm and omental biopsy measuring 8 cm × 5 cm. The outer surface was smooth shiny and gray-white. Cut section showed superficial cortex preserved at the periphery, the rest of the ovary was edematous to gelatinous with multiple minute cystic areas [Figure 1].

Multiple sections from ovary showed stromal edema with separation of stromal cells by abundant pale staining fluid

Cite this article as: Raina N, Mardi K, Rana A, Chauhan P. Massive ovarian edema masquerading as fibroma: A rare case report. Clin Cancer Investig J 2016;5:181-3.

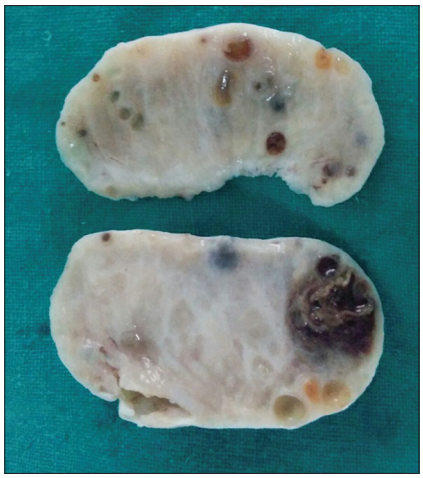

Figure 1: Ovary measuring 8.5 cm × 4.5 cm × 2 cm. Cut section is oedematous, gray-white with superficial cortex preserved at the periphery

with a focal microcystic appearance. Multiple follicle cysts, corpus luteum, and Graafian follicle were seen in both cortex and medulla. The superficial cortex was spared and showed thickening and fibrosis along with vascular and lymphatic dilatation, focal extravasation of red blood cells, hemosiderin laden macrophages, mast cell sprinkling [Figure 2]. Omental biopsy was within normal limits.

Immunohistochemistry was not done in this case as the diagnosis was made on H and E sections.

DISCUSSION

Massive ovarian edema is an unusual cause of ovarian enlargement seen in young patients. Venous and lymphatic obstruction producing edema are thought to be the reason for enlargement of the ovaries, in most cases.[3] The World Health Organization defined it as an accumulation of edema fluid within the ovarian stroma separating normal follicular structures.[4]

Massive ovarian edemas can involve one or both the ovaries. It most commonly affects young women in their reproductive stage, with an average age of 20 years. In few cases, it has also been observed during pregnancy.[5]

The patient presents with abdominal or pelvic pain, menstrual irregularities, and abdominal distension. The pain may sometimes be sudden in onset mimicking an attack of acute appendicitis. About 20% of the patients have androgenic manifestations and are nearly always associated with the presence of luteinized stromal cells.

Secondary massive ovarian edema can occur in capillary hemangioma, mature cystic teratoma, Meigs syndrome, ovarian fibrothecoma, and polycystic ovary and malignancies causing lymphatic permeation by metastatic

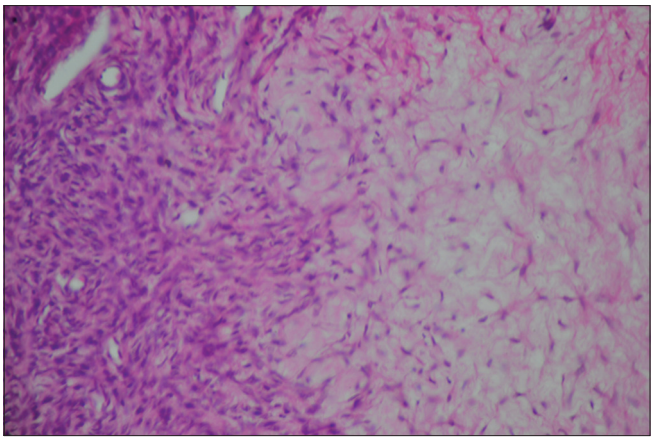

Figure 2: M/E shows stromal cells separated by abundant pale staining fluid. The superficial cortex is spared and showed thickening and fibrosis at the periphery (H and E, ×100)

carcinoma from the uterine cervix, gastric carcinoma, and lymphangitis carcinomatosa.[4]

Concurrent pathology such as serous cystadenoma has also been reported with ovarian edema.[6]

Massive ovarian edema has uncertain etiology. The most appealing pathogenetic theories include edema occurring due to partial, recurrent torsion with outflow obstruction. Despite technological advances, it is difficult to preoperatively diagnose it with imaging techniques. The ultrasound findings are usually reported as a solid tumor such as mass or as a solid mass with cystic component, which is nonspecific and can mimic neoplasia.[3]

Involved ovary is grossly enlarged, soft and fluctuant, ranging from 5.5 to 35 cm in maximum dimensions. On cut section, thin edema fluid oozes out, and the specimen appears wet and soft, microscopically, the ovarian stromal cells are widely separated by copious edema fluid. At times, atretic follicles may be recognized. Characteristically, a thin rim of compressed cortical stroma is recognized at the periphery of the mass. Necrosis and hemorrhage are unusual. In approximately 40% cases, the focus of luteinized cells is present.

Any ovarian neoplasm that may exhibit edematous or myxoid appearance can come in the differential diagnosis of ovarian edema, namely fibroma, sclerosing stromal tumor, Krukenberg tumor, luteinized thecoma associated with sclerosing peritonitis and ovarian myxoma.

The presence of preserved follicular structures within an edematous stroma can help differentiate the lesion from fibroma and luteinized thecoma. Ultrasonographically, in our case, diagnosis of fibroma was suggested the differentiating points include fibroma occurs at all ages,

most frequently during middle age, average age is 48 years and are hormonally active, sectioning reveals hard, flat, chalky-white surfaces having whorled appearance. M/E reveals intersecting bundles of spindle cells arranged in a storiform pattern. Fibroma may also show varying degrees of intercellular edema. The cytoplasm of the neoplastic cells of fibromas may contain small quantities of lipid.

In ovarian fibromatosis, there is usually complete or almost complete ovarian involvement by the fibromatous process and is bilateral in 20% cases. Metastatic tumor cells can cause edema by spreading to the lymphatics in the ovary. Therefore, the presence of signet ring cells or other epithelial cells in the stroma should be carefully evaluated to exclude Krukenberg's tumor.

Treatment of massive ovarian edema is controversial, sometimes massive ovarian edema mimics a malignant tumor in its appearance, and these cases are subjected to extensive surgery. When an ovarian mass is found in a young woman, frozen section examination can be helpful in diagnosis and to avoid unnecessary oophorectomy.[2]

CONCLUSION

It is a rare disease, and most of the cases are generally over treated. It should be suspected in women in reproductive age with solid enlargement of the ovary, and definite treatment should be undertaken only after confirmed pathological diagnosis. The majority of massive ovarian edemas will respond to the judicious use of intraoperative wedge resection and frozen section for the confirmation of diagnosis.

Financial support and sponsorship

Nil.

Conflicts of interest

There are no conflicts of interest.

REFERENCES

1. Kalstone CE, Jaffe RB, Abell MR. Massive edema of the ovary simulating fibroma. Obstet Gynecol 1969;34:564-71.
2. Bildirici K, Kabukcuoglu S, Ozalp SS, Yalçin OT, Ozden H. Massive ovarian edema: A case report. Eur J Gynaecol Oncol 2004;25:512-4.
3. Friedrich M, Ertan AK, Axt-Fliedner R, Holländer M, Schmidt W. Unilateral massive ovarian edema (MOE): A case report. Clin Exp Obstet Gynecol 2002;29:65-6.
4. Praveen R, Pallavi V, Rajashekar K, Usha A, Umadevi K, Bafna U. A clinical update on massive ovarian oedema – A pseudotumour? Ecancermedicalscience 2013;7:318.
5. Coakley FV, Anwar M, Poder L, Wang ZJ, Yeh BM, Joe BN. Magnetic resonance imaging of massive ovarian edema in pregnancy. J Comput Assist Tomogr 2010;34:865-7.
6. Khalbuss WE, Dipasquale B. Massive ovarian edema associated with ovarian serous cystadenoma: A case report and review of the literature. Int J Gynecol Cancer 2006;16 Suppl 1:326-30.