MASSIVE EDEMA OF THE OVARY: TWO CASE REPORTS

F.K. LOTGERING and F.B. LAMMES

Department of Obstetrics and Gynaecology Zuiderziekenhuis, Rotterdam, The Netherlands

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Abstract

Lotgering FK, Lammes FB (Department of Obstetrics and Gynaecology Zuiderziekenhuis, Rotterdam, the Netherlands). Massive edema of the ovary: two case reports.


Clinical history and histological findings in two cases of massive edema of the ovary are presented. The etiology is discussed and literature is reviewed. Recognition of this clinico-pathological entity may possibly prevent unnecessary oophorectomy in young women.

Key words: Ovarian tumor Ovarian edema Ovariectomy Torsion

Case report

Case 1

A 20-year-old nulli gravida was admitted to the gynecological department because of sudden right lower quadrant pain, together with nausea and vomiting. Three months before, identical complaints had subsided spontaneously. She had a regular menstrual cycle and a normal period 10 days prior to admission. General physical examination did not show any abnormalities and there was no virilization.

Pelvic examination revealed a tender adnexal mass, approximately 8 cm in diameter. Laboratory findings were normal. At surgery the right ovary was enlarged, 9 × 6 × 4 cm, and its surface was smooth and glistening. The pedicle was twisted twice without clear signs of strangulation in the pedicle. The left ovary was slightly enlarged, diameter 4 cm. The right ovary resembled a solid proliferative neoplasm, and right oophorectomy was performed. The pathological report (J.A.J. Spaas) showed a macroscopic smooth, pale white, and gelatinous tumor.

Microscopically, the cortex and especially its underlying stroma were markedly edematous (Fig. 1). The cortex showed multiple primordial follicles and small follicle cysts (Fig. 2). On high-power examination, small, dark, spindle-shaped cells were located in optically empty areas, in which thin strands of fibrillary structures could be seen, together with a scattered group
of Leydig-like or luteinized cells (Figs. 3 and 4). There were numerous dilated vessels, some of which were lymphatic in type, filled with eosinophilic material, and also some areas of necrosis and bleeding, with signs of organization.

Case 2

A 16-year-old patient was seen by the gynecologist because of primary amenorrhea. General physical examination did show a male hair distribution which was familial. Pelvic examination revealed a right adnexal

Fig. 1. The cortex, and especially its underlying stroma are markedly edematous (H.E., very low-power).

Fig. 2. Primordial follicles and small follicle cysts, surrounded by edematous stroma (H.E., low-power).
Figs. 3 and 4. Groups of Leydig-like or Luteinized cells (H.E., high-power).

mass, approximately 8 cm in diameter. At surgery the right ovary was partially cystic and enlarged (9 × 6 × 4 cm). The pedicle was twisted twice. The left ovary was slightly enlarged. Right oophorectomy was performed. Pathologic examination showed a comparable picture to case 1 (Ovarian Tumour Committee No. 0.640).

Discussion

Since the publication of Kalstone et al.
[4] in 1969, another 20 cases have been described in the literature [1,2,5—16] (Table 1). Clinically the entity occurs only in young patients from 6 years to 33 years old. Initial symptoms are the development of acute or subacute abdominal pain which may be constant or intermittent; or infertility, menstrual disorders or precocious puberty, in 5 of the 26 cases virilization was present. The right ovary was affected 18 times, the left ovary 8 times. Pathological examination was always similar to that described in case 1.

In all cases pronounced diffuse edema of the ovary was present, especially in the medulla. In 13 out of 26 cases groups of luteinized stromal cells or Leydig-like cells were present. It may well be very difficult for the pathologist, who is unfamiliar with this picture, to make a correct diagnosis. Uncorrect classification as fibroma, thecoma, myxoma or even sarcoma may result, especially because of the sometimes imposing dimensions presented by the tumor.

Aetiology

There are two common theories:

(a) Partial torsion of the mesovarium. Partial torsion of, or traction at, the mesovarium, will cause congestion of the venous and lymphatic system, resulting in edema, but this will not necessarily always progress to complete torsion and resulting ischemic necrosis of the ovary. Only in 10 out of 26 cases torsion was present, so possibly another cause of edema may (co-)exist. Torsion will more easily develop in an already enlarged ovary.

(b) Primary insufficiency of the venous drainage of the ovary. If insufficiency...
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of venous valves exists, post-capillary pressure in the ovary will increase, resulting in edema.

The right-sided ovarian vein is more prone to insufficiently because it is bigger in diameter and it drains directly into the inferior vena cava [3]. This can possibly be the explanation for the higher incidence of localization in the right ovary.

(c) One can also speculate on a hormonal or intrinsically ovarian contribution to the development of edema.

Therapeutic consequences

In most cases the massive edematous ovary was removed because of its resemblance to a solid proliferative neoplasm. If the gynecologist is aware of the possibility of massive ovarian edema at laparotomy, the ovary may be preserved. If (partial) torsion is found, attaching the ovary directly to the uterus can be considered. In this case the diagnosis has to be confirmed by frozen section before deciding on an ovarian saving method of operative treatment. Recognition of this clinico-pathological entity may possibly prevent unnecessary oophorectomy in these young women.

References