

A huge mucinous cystadenoma of ovarian: a rare case report and review of the literature

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Abstract

We report a case of a 63-years-old woman with a ten years history of increasing abdominal girth with associated abdominal pain. Abdomino-pelvic ultrasound and computed tomography scan revealed a large left ovarian cyst. The patient underwent laparotomy, resection of ovarian cyst and hysterectomy with bilateral ovarian resection. The removed huge mucinous cystadenoma, weighed 27 kg. Her post-operative course was unremarkable.

Introduction

Epithelial tumors of the ovary represent 65-75% of all ovarian tumors. They may originate from tube, endocervix, endometrium or bladder epithelium. Mucinous cystadenomas make up 15-20% of all epithelial tumors. It's reported to occur in middle-aged women. It's rare among adolescents/teenager or in association with pregnancy.¹ On gross appearance, mucinous tumors are characterized by cysts of variable sizes without surface invasion. They could reach large size before being discovered but this does not necessarily indicate malignancy, even when they reach a diameter of 50 cm or more and weigh 50 to 150 kg. On average, the mucinous tumors measure 15 to 30 cm in diameter. Only 10% of primary mucinous cystadenomas are bilateral.²

These tumors are divided into three different categories: benign, borderline and malignant. The benign mucinous tumors represent 40% of all benign ovarian neoplasia, reaching sizes between 15-30 cm in diameter and they have a 10 years survival rate of 100%. The borderline tumors have a low malignant potential and they have an extra-ovarian spread of about 10% and the 10 years survival rate is about 60%. The third group is that of the malignant tumor; these tumors are more frequent under the age of 20 years and over 60 years representing 90% of all malignant ovarian tumors with a 10 years survival rate of about 30-40%.

The most frequent complications of benign

ovarian cysts are torsion, hemorrhage and rupture; considering of this last complication, pseudomyxoma peritonei can result if the tumor ruptures and spills its mucinous deposits on the peritoneum.³

We report a case of a woman with an history of increasing abdominal girth where the radiological investigations revealed an huge left ovarian cyst.

Case Report

A 63-year-old nulliparous woman with a ten years history of increasing abdominal girth presented to our hospital with abdominal pain. In the last month her general conditions worsened; swelling was accompanied by vague pain all over the abdomen and a quick increase in size of girth. On admission, general examination revealed normal vital signs. On examination, abdomen was grossly distended and tense, bowel sound was not audible. The thoracic-abdominal-pelvic computed tomography scan revealed an intra-abdominal complex cystic mass measuring 30×34×41 cm (Figure 1); this mass produced a compressive effect on the other organs and it originated from the left ovarian region. There was no free fluid in abdomen. Tumor markers (CEA, α -fetoprotein and CA-125) were normal.

The operation was performed under general anesthesia; the patient was on left side, because placement on her back side was considered to risk development of high pressure on vessels posteriorly. She underwent to median laparotomy where a huge cystic mass was noticed arising from the left ovary; we removed it intact without intraperitoneal rupture. Right ovary was normal and uterus appeared myomatous. The gynecologist decided to go ahead with hysterectomy with bilateral ovarian resection; there was an high risk of borderline tumor of ovary, so we followed oncologic protocols, that included careful intraperitoneal exploration and biopsy of the diaphragm, omentum, Pouch of Douglas and right and left side colon douche.

The histopathologic work-up showed a mucinous cystadenoma 30×34×41 cm, 26.85 kg, predominantly uniloculate with a few multiloculate features (Figure 2). Postoperative recovery was uneventful and the patient was discharged on the 10th postoperative day. A clinical followed up is planned.

Discussion

A 63-year-old nulliparous woman, with an intraabdominal complex cystic mass measur-

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ing 30×34×41 cm and weighing 26.85 kg, underwent a laparotomy with resection of the ovarian cyst, hysterectomy with bilateral ovarian resection. The histopathologic work-up revealed a mucinous cystadenoma. The post-operative period was uneventful.

A giant ovarian cystadenoma of such a large size is a rare finding.

The most remarkable descriptions of large ovarian cysts are those of Spohn, who in 1922 reported one that weighed 148.6 kg, and of Symmonds, who in 1963 reported finding one that weighed 79.4 kg.^{4,5} Recently, Ton-Ho Young *et al.*, described a 24-year-old woman with a benign serous cystadenoma measuring 37×22×27 cm that weighed 24 kg. She underwent a laparotomy with a right sided salpingo-oophorectomy and the patient recovered completely.⁶

Nwobodo described a case of a 35-year-old grand multiparous African woman in 2010 with a 5 year history of abdominal swelling. She underwent a laparotomy with a left sided oophorectomy and a huge mucinous cystadenoma weighing 33.6 kg was removed. The post-operative period was unremarkable.⁷

This condition is potentially dangerous if

not managed properly. An anesthetist, a dietician, a psychologist and a gynecologist must be involved before the operation.

In the preoperative period, psychological and nutritional aspects are important. These patients are known to have a low plasma albumin and an iron deficiency. A longer period of preoperative enteral hyperalimentation has been recommended in the literature.⁸

Relative to our case the patient was dyspneic with heart failure grade III-a (NYHA Classification) due to the huge cystic mass, therefore a long period of preoperative hyperalimentation (before the operation) was not been possible; moreover the patient refused any psychological support as of the first day she was an inpatient in the hospital.

Besides the routine hematological and biochemical analyses, ventilatory function was clinically assessed to be adequate and the arterial blood gas analysis was also in the normal range. Many authors suggest the measurement of pulmonary artery wedge pressure in the presence of pulmonary edema but in our case it was not been necessary because the patient never presented clinical signs of pulmonary edema.⁸



Figure 1. Preoperative computed tomography scan shows large, well-encapsulated mass that filled the entire abdominal cavity with diaphragm elevation and lung compression.

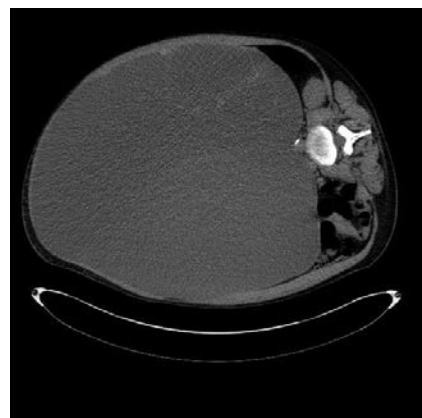


Figure 2. Postoperative image of giant mucinous cystadenoma of left ovarian.

The literature showed evidently that the huge dimensions of the mass could entail hemodynamic and pulmonary complications; during the operation monitoring of central venous pressure is recommended, because the venous return fluctuates markedly during the course of the surgical procedure.⁹ Howard *et al.* has shown that hypotension was due to the reduced venous return from the obstructed inferior vena cava and Crossen *et al.* has shown that splanchnic dilatation and venous pooling might follow sudden removal large of intra-abdominal masses;^{10,11} in addition to this situation, when a mass compressing the vena cava is removed, the venous return increases.

Considering these conditions, we decided to perform the laparotomy with the patient in left side lateral decubitus to reduce the high risk of blood pressure fluctuation. During the operation we monitored upper central venous pressure (CVP). After the cyst removal we changed the decubitus of the patient to continue the operation under more favorable hemodynamic and pulmonary conditions. No alteration in blood pressure occurred during the change of position from left lateral to supine because of appropriate administration of crystalloid and colloid solutions to keep the CVP stable.

Pulmonary edema has been reported following surgery of a giant intra-abdominal cyst;¹² Poulas *et al.* has shown that pulmonary edema may occur after removal of the tumor due to the sudden re-expansion of a chronically collapsed lung as a result of compression by the elevated abdomen.¹³

In our case pulmonary edema did not occur: the postoperative recovery was uneventful, and the patient was discharged on the 10th postoperative day

Conclusions

Management of ovarian cysts depends on the patient's age, the size of the cyst and its histopathological nature.

Conservative surgery as in ovarian cystectomy and salpingo-oophorectomy is adequate for benign lesions. For large ovarian masses with a risk of malignancy we suggest laparotomy and intraoperatively we followed the oncologic protocols, which included careful intraperitoneal exploration and a biopsy of the diaphragm, the omentum majus, the Pouch of Douglas and right and left side colon douche. The histopathologic workup of our case revealed a mucinous cystadenoma and all biopsies were shown to be free of neoplastic tissue.

This disease has a significant biological/physiological and psychological

impact on the patient as described above and for these reasons we suggest a multidisciplinary approach so that the collaboration of different specialists can create the optimal conditions to manage the perioperative period by trying to minimize the risk of the complications.

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