

A successful management of a giant mucinous ovarian tumor with intraoperative controlled fluid aspiration

H. Güraslan¹, L. Yaşar¹, M. Ekin¹, C. Kaya², H. Cengiz¹, M. Gönenç³

¹ Department of Obstetrics and Gynaecology, Bakirkoy Dr Sadi Konuk Teaching and Research Hospital, Istanbul

² Clinic of Obstetrics and Gynaecology, Van Ozalp State Hospital, Van

³ Department of General Surgery, Bakirkoy Dr Sadi Konuk Teaching and Research Hospital, Istanbul (Turkey)

Summary

Background: The aim of this article was to present management of a giant ovarian mass. **Case Report:** A 61-year-old patient was admitted with complaints of abdominal swelling and dyspnea. Ultrasound revealed a giant ovarian mass with dimensions 47x43x30 cm. The patient underwent laparotomy and the cyst's content was aspirated before total cyst excision. The total weight of the mass was calculated to be 42.5 kg. Postoperatively, the patient was discharged on her postoperative seventh day. **Conclusion:** Giant ovarian cysts can be managed with controlled aspiration before total cyst excision.

Key words: CA 19.9 antigen; Mucinous cystadenoma; Ovarian neoplasm.

Introduction

Due to the advancement at imaging technologies and health care services ovarian tumors that reach massive sizes are rarely seen. Many life-threatening complications such as; severe hypotension, increased venous return and cardiac failure, respiratory problems and intestinal distension can be encountered during the management of patients with massive ovarian tumors [1,2]. Most complications arise during the operations or after removal of the mass and are associated with rapid changes in the body circulation and pulmonary edema.

We present a giant mucinous borderline ovarian tumor weighing 42.5 kg and managed via mid-line laparotomy incision followed by controlled cyst aspiration and total excision of the ovary. We also discussed the problems encountered during the intraoperative and the postoperative period.

Case Report

A 61-year-old nulliparous, postmenopausal patient was admitted to the present emergency department with complaints of abdominal swelling and dyspnea. The patient's body weight was 113 kg, height 145 cm, abdominal circumference 163 cm, and BMI 53.7 kg/m² (Figure 1). Abdominal ultrasonography showed a thick-walled multicystic large mass with thick septation, with an unidentified origin. Intra-abdominal organs could not optimally evaluated due to the presence of the large mass. The abdominal computed tomography of the patient showed a cystic mass of 47x43x30 cm in size, with minimal solid areas inside, and was suspected to originate from the ovaries (Figure 2). The blood tests were: Hb: 8.7 gr/dl, Hct: 26%, serum CA 125: 106 IU/ml. and CA

19.9: 2,021 IU/ml. Other tumor markers and biochemical tests were at normal range.

The patient underwent laparotomy with a ten-cm long mid-line incision. A compress was placed between the cyst wall and the abdominal wall to prevent spillage of cyst fluid into the abdomen. The cysts tension was reduced after suctioning about seven liters of cyst contents by using a Verres suction needle connected to the aspirator. The cyst wall was elevated with two clamps to prevent leakage of the cyst fluid. The needle was then removed and an incision of 0.5 cm in diameter was made at the same place. An aspirator tip was placed through that incision and about 21 more liters of brown, clear, dark, and odourless cyst fluid was aspirated gradually (500 ml/min). When the authors were aspirating the cyst fluid, controlled reperfusion was performed by the anesthesiology team so persistent hypotension did not occur during the operation. The exploration of the lower abdomen showed that the mass was originating from right ovary. The authors were unable to reach the back of the mass due to adhesions, so the inci-



Figure 1. — The patient is laid in a slight right lateral position.

Revised manuscript accepted for publication May 13, 2014

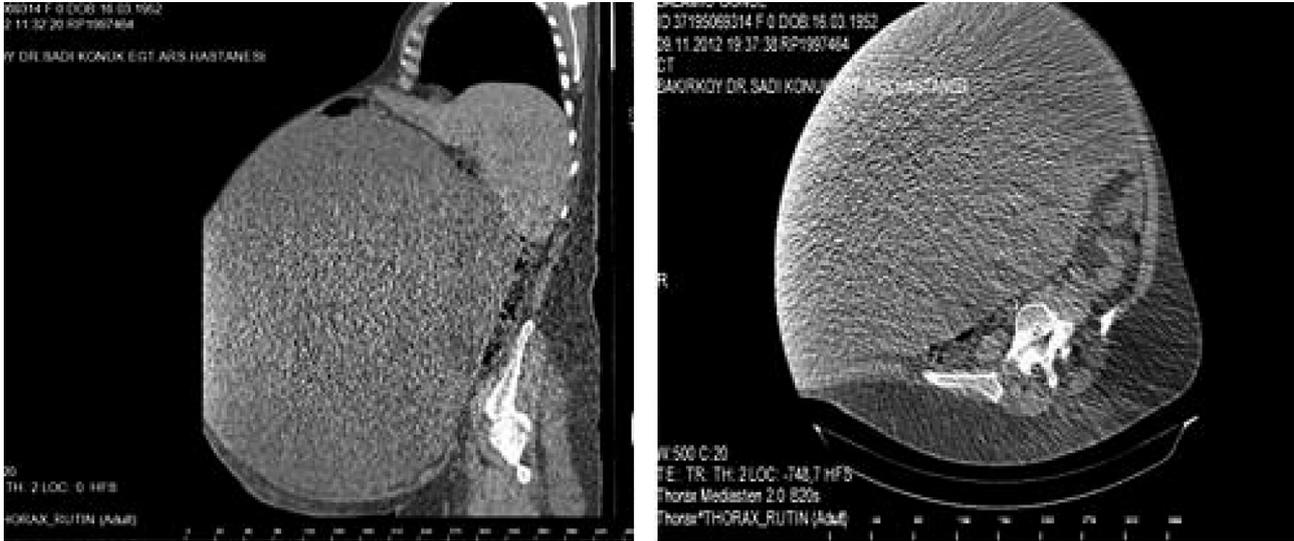


Figure 2. — The abdominal computed tomography of the patient.

sion was extended to above the abdomen. The cyst was not further drained because it was thought that it would facilitate the cyst dissection. A 0.5-cm wide cut that was made to the cyst wall was sutured. The cyst was completely released with a sharp and blunt dissection and was completely removed (Figure 3). The specimen was sent to frozen section. Although the examination of the frozen section had no macroscopic or microscopic findings suggesting malignancy; intraperitoneal staging with total abdominal hysterectomy, bilateral salpingo-oophorectomy, and infracolic omentectomy was performed as the final surgery because of risk of misdiagnosis at frozen section. Intraoperative total blood loss was 800 cc, while the urine output was 2,600 cc. The total weight of the aspirated cyst content plus excised mass was calculated to be 42.5 kg. Reconstruction of the abdominal wall was not performed for the residual abdominal skin after the excision of the mass. On the postoperative first day, the patient's bowel sounds were detected to be normoactive, so the nasogastric tube was removed and the patient was started on a liquid diet. The patient was given an intermittent supply of oxygen due to difficulties in deep breathing and coughing. Moreover, she was fitted with an elastic abdominal corset, and started breathing exercises. On the fifth postoperative day those findings resolved completely. The patient did not have any problems and was discharged on the seventh postoperative day. The evaluation on the 15th postoperative day showed that sagging of the abdominal skin was reduced, and serum CA 19.9 levels were measured to be 60 IU/ml. Final pathology indicated the presence of an intestinal type borderline mucinous tumor in the right ovary and there was no evidence of intraperitoneal spread.

Discussion

There is lack of information about management of giant ovarian tumors because of their rare incidence and experiences are limited with case series. Dotters *et al.* [3] stated that only 20 cases with tumors exceeding 23 kg have been reported during the period of 1946-1988.

The literature on the management of massive ovarian tumors indicated that serious and even fatal complications



Figure 3. — The cyst after suctioning about 28 liters of cyst content.

may occur up to 30%. According to reports from Symmonds *et al.* [1] in 11 cases before 1905, a total of six patients died; one before the operation, one during the operation, and four in the postoperative period. The majority of publications in the literature on how to remove large ovarian tumors recommend showing maximum effort to remove the mass intact in order to prevent the spread of the malignant tumor [3-5]. However, most of the complications during treatment are associated with sudden changes in abdominal pressure during excision of the masses. Also general condition of many of these patients are not suitable for long and invasive surgeries. Kinsey *et al.* had removed a pelvic mass weigh-

ing 107 kg via initial aspiration technic in lateral decubitus position and turning to supine position for removing the mass and adding abdominoplasty, subsequently. They reported no complications and the patient was satisfied with her postoperative appearance [6]. In the present case the authors also aspirated the cyst but they performed aspiration, only a slight head up supine position. They believe that, changing the position during the operation may cause a sudden decrease in blood pressure due to a decrease in caval pressure. They did not add any reconstructive surgery for abdominal sagging. It was not necessary to repositioning the patient during the operation and the patient is also satisfied with her postoperative appearance. The authors may speculate that, the size of the masses are the major determiners of the operation techniques.

One of the challenges for these patients is the structure of the abdominal and diaphragm muscles. They are thin and weakened due to constant stretching, and with the removal of the mass serious insufficiency in respiratory function may occur [6]. Deep breathing and coughing cannot be done effectively. Pulmonary edema may develop immediately as well as during the later period [7]. Another difficulty is the sudden drop of abdominal pressure that may cause severe hypotension during and after the operation [6]. To reduce these risks; tumours had been removed, without circulatory or respiratory complications, by the gradual drainage of 44 - 48.4 L of cyst fluid over four or five days before definitive surgeries in the literature [7]. However, this slow technique limits patients activity and prolongs hospital admission before removal of the tumour. For these reasons the present authors decided to drain the cyst in a controlled manner during the operation. They did not experience any problems during the cyst aspiration, except for a slight decrease in blood pressure and this was managed by anesthesiologist by intravenous fluid replacement. The ovarian cyst weighing 42.5 kg was removed via controlled aspiration technic slowly without spreading into the peritoneal cavity. With this method, surgical morbidity, intraoperative, and postoperative complications were decreased and no serious complications were observed.

In the postoperative period, a fatal intestinal distension may be observed due to sudden decompression and formation of the gas diffusion in the bowel [2]. The present authors applied

an abdominal bandage to their patient at the first postoperative day to increase abdominal pressure and observed that the patient was able to cough and discard phlegm more easily.

Although removal of excess abdominal wall and various reconstructive techniques were proposed in the literature [2, 6], the present authors did not performed abdominoplasty because of recovery potential of the abdominal muscles and skin in expanding conditions such as pregnancy and obesity. In addition, they also observed that sagging of the abdominal wall was greatly reduced within 15 days.

Conclusions

Giant ovarian cysts can be managed with controlled aspiration of the cyst fluid in supine position followed by staging procedure via midline laparotomy incision. The present authors suggest that this procedure can be performed safely without increasing the risk of spreading malignancy and can prevent sudden decreases of intraoperative abdominal pressure.

References

- [1] Symmonds R.E., Spraitz A.F., Koelsche G.A.: "Large ovarian tumor. Report of case". *Obstet. Gynecol.*, 1963, 22, 473.
- [2] Hoile RW.: "Hazards in the management of large intra-abdominal tumours". *Ann. R. Coll. Surg. Engl.*, 1976, 58, 393.
- [3] Dotters DJ, Katz VL, Currie J.: "Massive ovarian cyst: A comprehensive surgical approach". *Obstet. Gynecol. Surv.*, 1988, 43, 191.
- [4] Hunter DJS.: "Management of a massive ovarian cyst". *Obstet. Gynecol.*, 1980, 56, 254.
- [5] O'Hanlan KA.: "Resection of a 303.2-pound ovarian tumor". *Gynecol. Oncol.*, 1994, 54, 365.
- [6] Kincey J, Westin SN, Zhao B, Curtis MG, Ramondetta L.: "Surgical removal of a gigantic abdominal mass: A multidisciplinary approach". *Obstet. Gynecol.*, 2011, 117, 508.
- [7] Nishiyama T, Hanaoka K.: "Same day drainage and removal of a giant ovarian cyst". *Can. J. Anaesth.*, 1997, 44, 1087.

Address reprint requests to:

C. KAYA, M.D.

Clinic of Obstetrics and Gynaecology

Van Ozalp State Hospital

Cumhuriyet District, No: 3, Ozalp

65800 Van (Turkey)

e-mail: drcihankaya@gmail.com