

## Ultrasound Guided Drainage and Laparoscopic Management of Giant Ovarian and Para-Ovarian Cysts: Report of Two Cases

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Received: 13 September 2019

Published: 01 October 2019

**Keywords:** *Laparoscopy; Para-Ovarian Cyst; Cesarean Surgery*

### Abstract

Benign ovarian cysts are common among women in reproductive age and very few of them reach large sizes. Giant ovarian cysts are usually managed by laparotomy. There is still no consensus for the size limitation of ovarian cysts. Minimal invasive approaches to facilitate the administration of laparoscopy may be applied in such patients. We report a case of a 25-year-old woman with a history of increasing gradually abdominal distension and abdominal pain with Magnetic resonance (MR) finding are a large tumor at the right adnexial region, treated by complete laparoscopic extirpation of a giant ovarian cyst. The other case is laparoscopic removal of giant paratubal cyst with partial torsion. Here we report ultrasound guided aspiration and successful laparoscopic excision of giant ovarian and paraovarian cysts.

### Introduction

Nowadays, giant ovarian cysts are rarely found with the development of advanced imaging methods. Most of them are benign diseases [1].

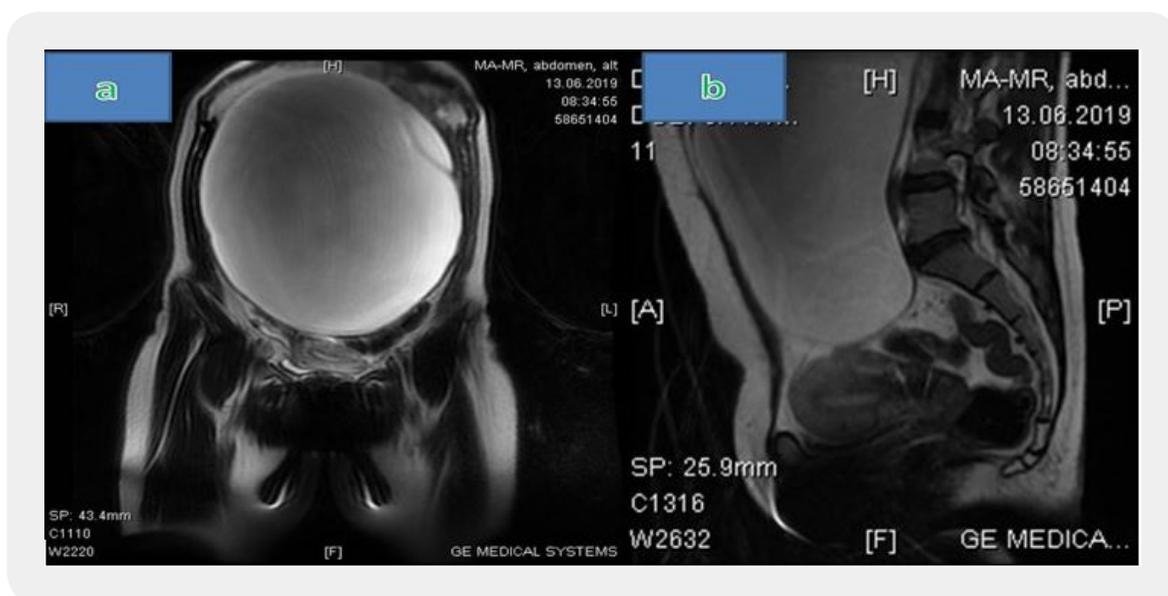
A management of benign ovarian cysts is determined by patient's age, symptoms, menstrual status, history of previous abdominal surgery and the size and structure of the cyst. Traditionally; midline laparotomy has been performed by management of giant intrabdominal cysts [2]. Nowadays ; minimally invasive surgery is an other approach to the treatment of giant ovarian cysts. A gold standart technique of these cysts's treatment is considered as laparoscopy [3] Only a few cases had been reported as laparoscopic approach that carried out by decompression of cyst without spillage of cyst fluid and cyst perforation. Also laparoscopy, comparing to the laparotomy has some benefits such as less pain, shorter hospital stay, less blood loss, faster recovery and better cosmetic results [4] .

The aim of our study was to increase the safety and efficacy of operative laparoscopy in the treatment of giant ovarian cysts and to reduce possible complications.

### Case 1

A 25 year-old, gravida two parity two presented with a gradually abdominal distension and abdominal pain, was admitted to our institution. In addition, the patient had been menstrual irregularity. There was no significant feature in her medical history except ceserian surgery.

On physical examination palpable mass covering the entire abdomen was identified. Transabdominal and transvaginal ultrasonographic examination revealed an anechoic cystic structure of approximately 30 x 27cm, extending from the right adnexial region to the xiphoid. And also the uterus and left over were normal and endometrial thickness was 7mm. CA-125 level (23 IU/ml) and other tumor markers was within the normal ranges. Magnetic resonance (MR) findings were consistent with a large well-defined homogeneously cystic lesion originating from the right ovary measuring 30x27cm, respectively (Figure 1). The patient was scheduled for elective laparoscopic surgery and informed consent was obtained.



**Figure 1:** MR image of giant pelvic mass

Following in litotomy position before operation, the cysts were aspirated with 14 gauge veress needle under ultrasound guidance. Approximately 5 liters of cystic content were aspirated. (Figure 2) After entering the abdominal cavity with 10mm trocar, the abdominal cavity visualized and two ancillary trocars size in 5mm were inserted in the lower quadrant. Peritoneal wash was taken for cytology. After ovarian cystectomy, cyst wall removed with endobag. Histopathologic examination indicated that the tumor was serous cystadenoma of the ovary.



**Figure 2:** a-b: peroperative mass image, c: image of cyst content

## Case 2

A 18 year-old, gravida two parity two presented with a gradually abdominal distension and acute abdominal pain, was referred as our institution. After a sudden onset of pain 4 hours ago, she had a defensive and rebound examination and also she had nausea and vomiting. There was no significant feature in her medical history.

A cystic, well-circumscribed, palpable huge tumoral mass lesion was determined by gynecological bimanual examination in the right adnexial region. Transabdominal ultrasonographic examination revealed an anechoic cystic structure of approximately 25 x 23cm, extending from the right adnexial region to the xiphoid. In addition, the uterus and bilateral ovaries were normal and endometrial thickness was 9mm. A laboratory workup overall was normal, including b-HCG, CEA, AFP, CA 19 -9 and CA-125 level (27 IU/ml ). Computerized Tomography (CT) of the abdomen and pelvis showed a giant homogeneous cystic mass in the abdomen measuring 27x22cm in size. This cyst had a significant mass affect and seemed as partially torsioned. The patient was scheduled for emergency surgery and was taken to the operating room for laparoscopic management.

In litotomy position following sterile condition, the cyst wall was inspected prior to drainage. The cyst was then drained under the ultrasound guidance by using a 14 gauge veress needle. Approximately 4 litres of the cyst's content aspirated through the veress in order to avoid spillage. Once the cyst was emptied, A 10mm trochar was inserted below 1cm from the umbilical fold in the abdomen. The abdominal cavity was visualized and bilateral ovaries were normal and giant right paratubal cyst was observed. Paratubal cyst with partial torsion, was seemed as purple and edematous. Two accessory trocars size in 5mm were inserted in the right and left lower quadrant. Peritoneal wash was taken for cytology. Paratubal cyst was excised with electrocautery system. After hemostasis, the cystic mass was removed by the Endo Catch bag. That's so laparoscopic cystectomy was performed in usual manner with no spillage. Histopathologic examination indicated that the tumor was serous benign cystic formation of the tuba.

## Discussion

Laparoscopic approach should be preferred to the treatment of the giant benign ovarian cysts due to least invasiveness, better cosmetic results, shorter hospital stay and availability of modern advanced techniques in laparoscopic surgery [5]. Disadvantages of laparotomy for these cysts are worse cosmetic results, longer hospital stay, slow recovery process and excess pain. There are no guidelines for the maximal size of cyst performed by laparoscopy in literature. Laparoscopy can be preferred especially large benign ovarian cysts with selected proper patients [6].

The disadvantages of laparoscopy in these large masses are the inability to provide adequate imaging, inability to adequately expand the abdomen for operation, cyst or other organ injuries and insufficient manipulation and tumor spillage.

The unexpected malignancy of the mass can be a problem for laparoscopy due to require laparotomy for further evaluation. This risk is greatly reduced if preoperative evaluation is performed well. The incidence of unsuspected ovarian cancer at laparoscopy has been shown to be 0.04% [7]. Nezhat *et al.* was determined only four ovarian cancer in 1011 patients with adnexial mass which treated by surgically [8].

Another potential complication of laparoscopic surgery can be contamination of cyst's fluid in abdominal cavity with perforation of cyst wall. Spillage of dermoid cyst contents in peritoneal cavity may cause inflammatory reactions, leading to peritoneal fibrosis and spillage of mucinous cyst's content can lead to pseudomyxoma peritonei [9]. Also malignant cyst spillage can result in advance of the stage of the disease by dissemination of malignant cells in peritoneal cavity [10].

Nagele *et al.* was reported that a large ovarian cyst was drained by veress via ultrasonographic guidance before laparoscopy [11]. Cevrioglu *et al.* had performed a laparoscopic cystectomy after drainage of giant paraovarian cyst by spinal needle with ultrasonography [12].

## Conclusion

We aimed to eliminate spillage of cyst content by drainage of the cyst with ultrasonography before laparoscopic cystectomy. Ultrasound-guided cyst's drainage prior to laparoscopy can reduce complications and thus

minimizing contamination of the cyst content. This method can be a feasible; cost-effective treatment of benign cysts which can prevent unnecessary laparotomies.

## Bibliography

1. Sri Paran, T., Mortell, A., Devaney, D., Pinter, A. & Puri, P. (2006). Mucinous cystadenoma of the ovary in perimenarchal girls. *Pediatric Surgery International*, 22(3), 224-227.
2. Westfall, C. T. & Andrassy, R. J. (1982). Giant ovarian cyst: case report and review of differential diagnosis in adolescents. *Clin Pediatr (Phila)*, 21(4), 228-230.
3. Dolan, M. S., Boulanger, S. C. & Salameh, J. R. (2006). Laparoscopic management of giant ovarian cyst. *JSL.S.*, 10(2), 252-225.
4. Ma, K. K., Tsui, P. Z., Wong, W. C., et al. (2004). Laparoscopic management of large ovarian cysts: more than cosmetic consideration. *Hong Kong Med J*, 10(2), 139-141.
5. Salem H. A. F. (2002). Laparoscopic excision of large ovarian cysts. *Journal of Obstetrics and Gynaecology Research*, 28(6), 290-294.
6. Eltabbakh, G. H., Kaiser Jr (2000). Laparoscopic management of a large ovarian cyst in an adolescent: a case report. *The Journal of Reproductive Medicine*, 45(3), 231-234.
7. Sagiv, R., Golan, A. & Glezerman, M. (2005). Laparoscopic management of extremely large ovarian cysts. *Obstetrics & Gynecology*, 105(6), 1319-1322.
8. Nezhat, F., Nezhat, C., Welander, C. E. & Benigno, B. (1992). Four ovarian cancers diagnosed during laparoscopic management of 1011 women with adnexal masses. *American Journal of Obstetrics and Gynecology*, 167(3), 790-796.
9. Morrow, C. P. (1998). Tumors of the ovary: classification: the adnexal mass. In: Morrow CP, Curtin J (eds) *Synopsis of gynecologic oncology*. Churchill Livingstone, Philadelphia, (pp. 215-232).
10. Berek, J. (2000). Epithelial ovarian cancer. In: Berek J, Hacker N (eds) *Practical gynecologic oncology*. Lippincott Williams & Wilkins, Philadelphia, (pp. 457-522).
11. Nagele, F. & Magos, A. L. (1996). Combined ultrasonographically guided drainage and laparoscopic excision of a large ovarian cyst. *Am J Obstet Gynecol.*, 175(5), 1377-1378.
12. Cevrioglu, A. S., Polat, C., Fenkc, V., et al. (2004). Laparoscopic management following ultrasonographic-guided drainage in a patient with giant paraovarian cyst. *Surg Endosc.*, 18(2), 346.