

# Laparoscopic Removal of a Large Ovarian Mass Utilizing Planned Trocar Puncture

Michael L. Stitely, MD

## ABSTRACT

**Background:** Large cystic ovarian masses pose technical challenges to the laparoscopic surgeon. Removing large, potentially malignant specimens must be done with care to avoid the leakage of cyst fluid into the abdominal cavity.

**Case:** We present the case of a large ovarian cystic mass treated laparoscopically with intentional trocar puncture of the mass to drain and remove the mass.

**Discussion:** Large cystic ovarian masses can be removed laparoscopically with intentional trocar puncture of the mass to facilitate removal without leakage of cyst fluid.

**Key Words:** Large ovarian cyst, Laparoscopic removal, Trocar puncture, Specimen retrieval.

## INTRODUCTION

Laparoscopic surgery provides numerous benefits to patients, including improved cosmetic results, reduced infection risk, less pain, and quicker recovery from surgery.<sup>1,2</sup>

However, challenges arise with the laparoscopic approach when large cystic ovarian masses are addressed. Removal of the mass intact is usually not possible, and care must be taken to avoid the leakage of malignant cells from the cyst in cases of malignancy.<sup>3,4</sup> Also, chemical peritonitis may result from the leakage of benign cyst fluid into the peritoneal cavity.<sup>5,6</sup>

Several approaches to removing large cystic ovarian masses have been described. Drainage of the cyst either by ultrasound-guided paracentesis<sup>7</sup> or by drainage during laparoscopy<sup>8</sup> followed by oophorectomy or extracorporeal cystectomy<sup>9</sup> are common surgical approaches.

## CASE REPORT

A 37-year-old, para 4, patient presented for evaluation of increasing abdominal girth and abdominal pain. A computed tomography scan showed a very large simple cystic right adnexal mass filling the entire abdomen, measuring 27cm by 18cm by 22cm (**Figure 1**). The CA-125 level was 37 (normal range, 0 to 35 units/mL). Physical examination confirmed the finding of a large cystic abdominal mass that was freely mobile and separate from the uterine body. A benign serous cystadenoma was suspected from the clinical examination, CA-125 level, and imaging results.

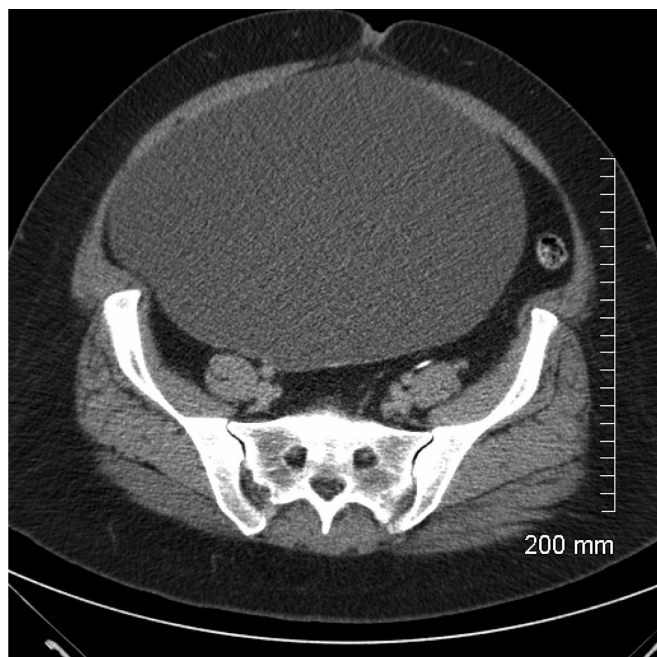
The patient was taken to the operating room for surgical management. Laparoscopic access was obtained at the left upper quadrant. The mass filled the entire abdomen. The surface of the mass was smooth and regular and without excrescences (**Figure 2**). Direct laparoscopic visualization of the mass supported the clinical suspicion that the mass was benign. A second port site was placed just inferior to the umbilicus. A Step bladeless trocar system (Covidien, Mansfield, MA) access needle and sleeve were guided through a small skin incision and intentionally directed into the cystic mass under laparoscopic visualization. The access needle was removed from the sleeve, and

West Virginia University Department of Obstetrics and Gynecology, Morgantown, West Virginia, USA.

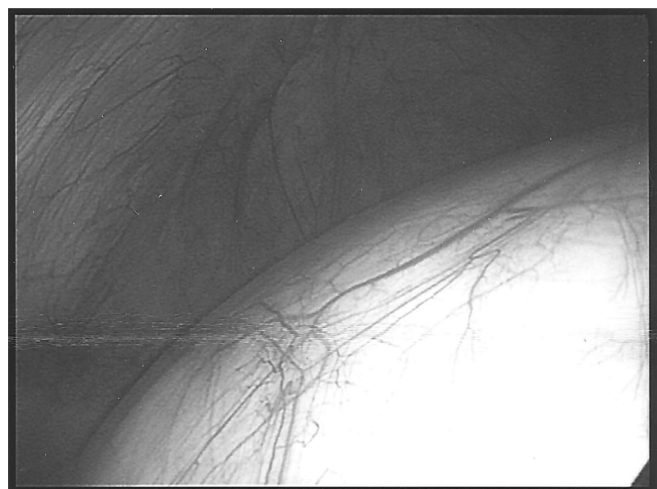
Address correspondence to: Michael L. Stitely, MD, Department of Women's and Children's Health, Dunedin Hospital, Private Bag 1921, Dunedin 9054 New Zealand. E-mail: Mike.Stitely@southernmb.govt.nz

DOI: 10.4293/108680812X13291597716465

© 2012 by JSLS, *Journal of the Society of Laparoendoscopic Surgeons*. Published by the Society of Laparoendoscopic Surgeons, Inc.



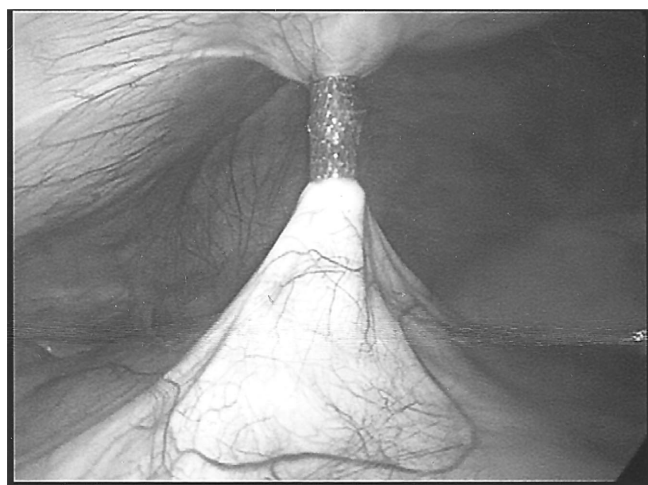
**Figure 1.** Computed tomography scan image of the large cystic ovarian mass.



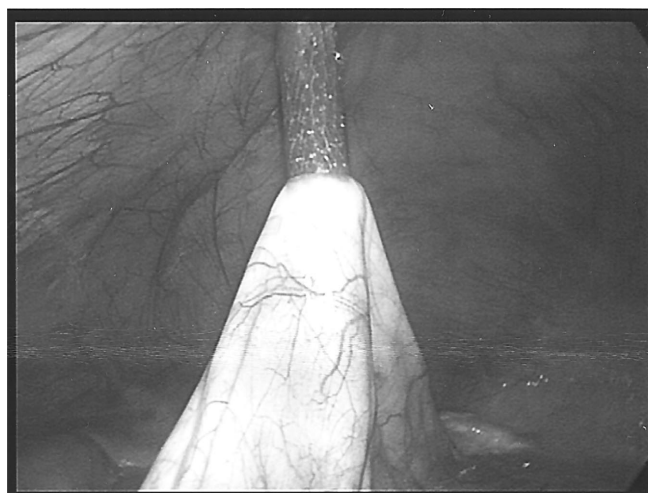
**Figure 2.** Laparoscopic view of the mass looking toward the upper abdomen.

the 5-mm dilating cannula was placed through the sleeve (**Figure 3**).

The suction irrigator was then advanced through the cannula to decompress and drain the cyst of approximately 5 liters of fluid without any spillage of the cyst fluid. The cannula was left in place throughout the salpingo-oophorectomy procedure to prevent any spillage of residual cyst fluid and was also utilized to manipulate the mass (**Figure 4**). Two addi-



**Figure 3.** Laparoscopic view of the trocar puncture of the mass.



**Figure 4.** Laparoscopic view of the decompressed cyst with the trocar in place being used for intraoperative traction.

tional ports were placed, one in the right upper quadrant and one in the right lower quadrant to complete the procedure.

The ovarian vessels were sealed and divided, and the salpingo-oophorectomy was performed. The specimen was placed into a specimen retrieval bag, and the cannula was removed from the cyst upon closure of the bag. The specimen was removed intact without leakage of any cyst fluid into the peritoneal cavity.

The patient was discharged home the same day. The final pathology report showed a benign serous cystadenoma.

## DISCUSSION

Large ovarian masses pose a surgical challenge when addressed laparoscopically. Care must be taken to avoid

cyst rupture to prevent the spread of malignant cells throughout the peritoneal cavity and to reduce the risk of chemical peritonitis.

The Step bladeless trocar system consists of an access needle inserted through a braided expandable sleeve. A dilating cannula is then placed through the sleeve after removal of the access needle. The braided contour of the expandable sleeve makes this trocar system ideal for the drainage of a large ovarian cyst. Once directed into the cyst, the small puncture site is dilated by the cannula with the braided sleeve in its expanded configuration. This gives a watertight seal and prevents the cannula from slipping out of the cyst.

This technique is an effective variation of the previously described methods for the removal of large ovarian cysts.

The intentional insertion of a dilating trocar directly into a large ovarian cystic mass should be considered as a method of laparoscopic removal to prevent leakage of fluid from the cyst.

#### References:

1. Goh SM, Yam J, Loh SF, Wong A. Minimal access approach to the management of large ovarian cysts. *Surg Endosc*. 2007 Jan;21(1):80–83.
2. Garry R. The benefits and problems associated with minimal access surgery. *Aust N Z J Obstet Gynaecol*. 2002 Aug;42(3):239–244.
3. Mettler L, Semm K, Shive K. Endoscopic management of adnexal masses. *JSLs*. 1997 Apr-Jun;1(2):103–112.
4. Canis M, Rabischong B, Houille C, et al. Laparoscopic management of adnexal masses: a gold standard? *Curr Opin Obstet Gynecol*. 2002 Aug;14(4):423–428.
5. Edwards AG, Lawrence A, Tsaltas J. Ovarian dermoid cyst leakage—a cautionary tale. *Aust N Z J Obstet Gynaecol*. 1998 Aug;38(3):332–333.
6. Kondo W, Bourdel N, Cotte B, et al. Does prevention of intraperitoneal spillage when removing a dermoid cyst prevent granulomatous peritonitis? *BJOG*. 2010 Jul;117(8):1027–1030.
7. Nagele F, Magos AL. Combined ultrasonographically guided drainage and laparoscopic excision of a large ovarian cyst. *AJOG*. 1996 Nov;175(5):1377–1378.
8. Postma VA, Wegdam JA, Janssen IM. Laparoscopic extirpation of a giant ovarian cyst. *Surg Endosc*. 2002 Feb;16(2):361.
9. Lee LC, Sheu BC, Chou LY, Huang SC, Chang DY, Chang WC. An easy new approach to the laparoscopic treatment of large adnexal cysts. *Minim Invasive Ther Allied Technol*. 2011 May;20(3):150–154. Epub 2010 Nov 17.