

# Giant Ovarian Masses and a Vivid Cosmetic-cum-Surgical Diversity: A Case Series

Shruti A Panchbudhe<sup>1</sup>, Aditya Rajiv Nimbkar<sup>2</sup>, Prasad Deshmukh<sup>3</sup>, Hemina Baldota<sup>4</sup>

Received on: 09 June 2022; Accepted on: 05 September 2022; Published on: 16 November 2022

## ABSTRACT

**Aim:** To understand varied approaches for surgical management of large ovarian cysts to minimize cosmetic, intraoperative, and postoperative complications.

**Background:** In the current era of medical practice, giant ovarian tumors have become a rarity due to increased awareness eventuating in early diagnosis. They cause mechanical pressure symptoms on the gastrointestinal, respiratory, and urinary tract and also cosmetic and postoperative complications related to large unsightly incisions required for surgery.

**Case description:** We describe our experience of five such cases and suggest diverse and successful surgical approaches in the management of voluminous ovarian masses, which include techniques such as laparoscopic excision using a specimen retrieval bag, mini-laparotomy, and laparotomy via a vertical midline or transverse incision with or without intraoperative decompression of the cyst.

**Clinical significance:** Enumerating methods that decrease complications like intraoperative spillage of cyst contents, unsightly scars, and early postoperative recovery in the management of ovarian tumors.

**Conclusion:** Choosing the best route for accessing the cyst and then choosing the best possible way for astute management of ovarian tumors.

**Keywords:** Cosmetic surgery, Cyst decompression, Laparoscopy, Laparotomy, Ovarian mass, Ovarian cystectomy.

*Journal of South Asian Federation of Obstetrics and Gynaecology* (2022): 10.5005/jp-journals-10006-2123

## INTRODUCTION

Ovarian tumors can present at any age in a woman's lifetime. The size of an ovarian cyst can range from a ping pong ball-sized dominant follicle to a mass larger than a full-term pregnancy. Fewer bodily phenomenon exhibits such varied size and malignant potential apart from the ovary. In recent years, unilateral salpingo-oophorectomy and cystectomies of the tumor, followed by ovarian reconstruction, allow not just complete sparing of the unaffected ovary but maximal sparing of the affected ovarian tissue as well, have been advocated as effective fertility-sparing surgical therapies for ovarian tumors. We describe our experience and suggest different surgical approaches in the management of voluminous ovarian masses.

## CASES

### Case 1: Mini-laparotomy (Vertical Incision) Approach with Intraoperative Cyst Decompression

A 26-year-old, P2L2, with previous two cesarean sections, came to the outpatient department with a complaint of abdominal distension since a month, associated with constipation, feeling of incomplete rectal emptying, early satiety, vomiting, and urinary frequency and urgency. She had regular menstrual cycles with significant dysmenorrhea. A vitally stable patient, her abdominal examination was suggestive of a giant mass arising from the pelvis into the abdominal cavity with cystic consistency, reaching up to the level of xiphisternum. On per vaginal examination, her uterine size and adnexa could not be assessed due to her tense abdomen. Routine blood investigations and tumor markers were within normal limits except mild elevation in serum lactate dehydrogenase. Ultrasound imaging was sought, which suggested a large cystic left ovarian lesion in the midline seen arising from the pelvis measuring 22 cm × 20 cm × 13 cm with internal thin septations without

<sup>1-4</sup>Department of Obstetrics and Gynecology, Lokmanya Tilak Municipal General Hospital and Medical College, Mumbai, Maharashtra, India

**Corresponding Author:** Aditya Rajiv Nimbkar, Department of Obstetrics and Gynecology, Lokmanya Tilak Municipal General Hospital and Medical College, Mumbai, Maharashtra, India, Phone: +91 7666842282, e-mail: nimbkaradi17@gmail.com

**How to cite this article:** Panchbudhe SA, Nimbkar AR, Deshmukh P, et al. Giant Ovarian Masses and a Vivid Cosmetic-cum-Surgical Diversity: A Case Series. *J South Asian Feder Obst Gynae* 2022;14(5): 510–513.

**Source of support:** Nil

**Conflict of interest:** None

**Ethical approval:** Taken

evidence of torsion. Computer tomography (CT) imaging studies revealed large, midline, solitary well-defined abdominopelvic left ovarian cystic mass measuring 27 cm × 21.3 cm × 13.5 cm with few thin internal septations seen extending up to the epigastric region, without any solid component or papillary projections, compressing on the mid and distal right ureter with resultant hydroureter and hydronephrosis. The right ovary was seen normally in the right adnexal region, the left ovary was not visualized, no ascites, and findings were suggestive of ovarian cystadenoma.

Exploratory mini-laparotomy with a low infraumbilical 4-cm vertical midline incision was performed. Intraoperatively large tense smooth surfaced cystic mass that obliterated the abdominal and peritoneal cavity was seen with no ascites. The precautionary measure was taken by placing mops around the incision in case of inadvertent spillage. A syringe with a large bore needle was used to aspirate approximately 6 liters of cystic fluid and sent for cytology

examination, as seen in Figure 1. A left-sided salpingo-oophorectomy was performed. Rest of the pelvic organs, adnexa of the opposite side, and peritoneum were inspected, which were normal. Postoperatively, the patient's weight had reduced by 6 kg, and the recovery period was uneventful. Histopathology and the cytology study reports were suggestive of mucinous cystadenoma.

### Case 2: Mini-laparotomy (Transverse Incision) Approach with Cyst Decompression

A 28-year-old, P2L2, with previous two cesarean sections, presented to our outpatient department with an ultrasound report suggestive of a right adnexal cystic lesion of 12 cm × 10 cm × 10 cm with maintained pedicle vascularity. Routine blood investigations and tumor markers were within normal limits. Computer tomography imaging of the abdomen and pelvis was done, which showed a 14 cm × 12 cm × 10 cm well-defined hypodense cystic lesion in the right adnexa extending into the right iliac fossa, and right ovary was not seen separately from it with thin enhancing walls and a thin septum. There was no evidence of calcification or solid component within the lesion, and possibility of benign ovarian cystic neoplasm likely to be serous or mucinous cystadenoma was considered.

An exploratory mini-laparotomy was done, with a 4 cm transverse incision, just above the previous Pfannenstiel incision. Intraoperatively, there was a cystic mass that was felt arising from the right adnexa and occupying the pouch of Douglas. A purse string mass was taken with vicryl 2-0 on the cyst as seen in Figure 2,

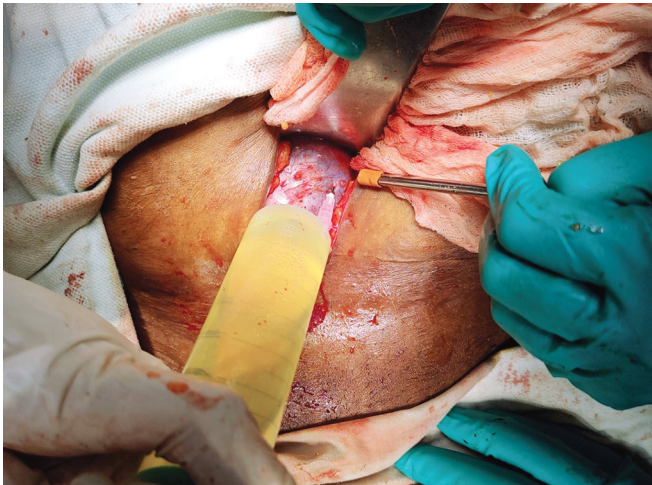


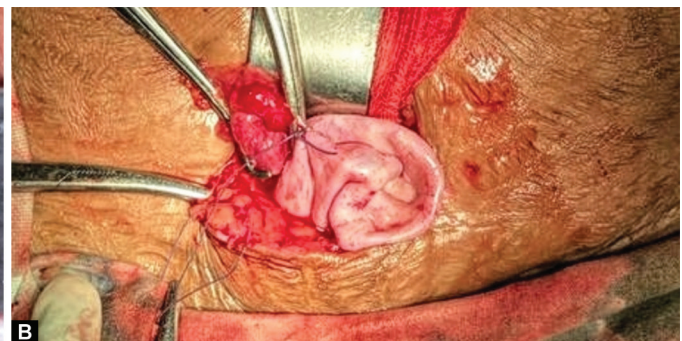
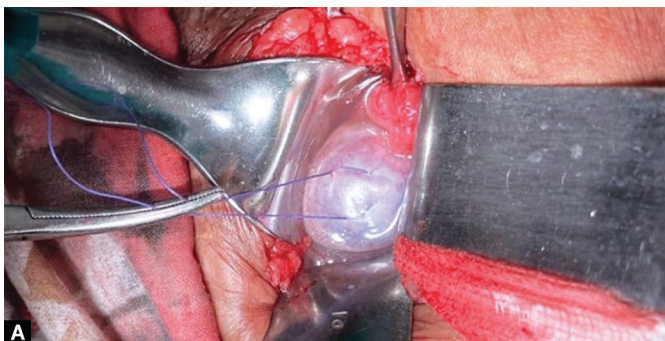
Fig. 1: Ovarian cyst aspiration and decompression in vertical midline mini-laparotomy incision

a cruciate incision was taken over it and a suction cannula was introduced into the cyst. Serous content aspirated and sent for cytology study. The purse string suture was tugged with gentle traction on the ends, which were knotted, and the cyst was delivered through the mini-laparotomy incision. Following this, right-sided cystectomy was performed with ovarian reconstruction, and the left fallopian tube and ovary were normal. Histopathology and cytology confirmed the diagnosis of benign serous cystadenoma.

### Case 3: Laparotomy Approach with Vertical Midline Incision

A 23-year-old, unmarried girl presented with complaints of dull aching pain over the right iliac fossa intermittently for 3 months. Ultrasound of abdomen and pelvis was suggestive of a midline cystic mass with a solid component of size 18 cm × 15 cm × 10 cm, with right ovary not seen separately from it compressing on the right ureter and right kidney and no signs of torsion, probably a right ovarian cystadenoma. She was vitally stable with no pallor or supraclavicular lymphadenopathy. On per abdominal examination, a midline mass corresponding to 26 weeks size, firm consistency, and arising from pelvis with free side to side mobility was palpated without signs of acute abdomen. Routine blood investigations were normal. Amongst tumor markers, only serum lactate dehydrogenase was marginally elevated above the upper normal limit. Computer tomography scan was done primarily for checking lymph nodes, while MRI was done to study the planes and extent of tumor. Computer tomography scan findings showed a midline 20 cm × 15 cm × 10 cm well-defined multiloculated cystic lesion in the pelvic-abdominal region with the right ovary not seen separately. The solid component of the lesion showed arterial enhancement with no lymph node involvement. On MRI, the lesion was extending from the coccyx inferiorly to the L3 vertebra superiorly, with compression seen on the urinary tract, aorta, inferior vena cava and iliac vessels posteriorly, anterior abdominal wall anteriorly, and urinary bladder inferiorly with mild ascites. All the above findings were suggestive of a germ cell tumor, probably a dysgerminoma.

The patient was posted for exploratory laparotomy with an extended vertical infraumbilical midline and paraumbilical curved incision was taken for adequate exposure and care sought to prevent spillage in view of the imaging reports. Intraoperatively a 20 cm × 15 cm × 8 cm mass, solid to cystic consistency, with multiple firm areas was noted, which prevented the cyst decompression technique. It was arising from the right adnexa without visualization of the right ovary, and the right fallopian tube was stretched over the mass with dilatation. Mass was highly



Figs 2A and B: Ovarian cyst decompression with suction using purse-string suture technique in transverse mini-laparotomy incision



vascular with dilated large vessel plexus at its pedicle, as seen in [Figure 3](#). The left-sided ovary was normal in appearance. Right-sided salpingo-oophorectomy was performed by applying a clamp on infundibulopelvic ligament. Interestingly, histopathology and cytology studies were suggestive of a benign sclerosing stromal tumor instead of the earlier diagnosis of a dysgerminoma. With no literature of recurrence of this tumor, patient was discharged with an uneventful postoperative course.

#### Case 4: Laparotomy Approach with Transverse Incision

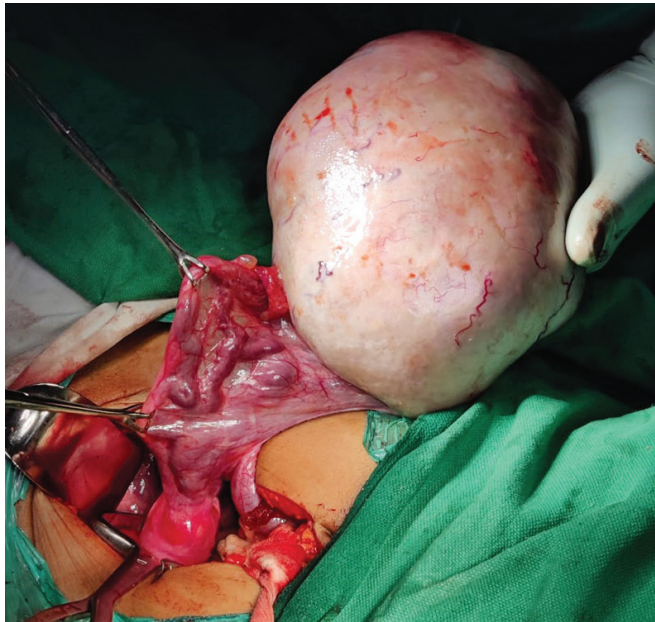
A 35-year-old, P2L2, with previous vaginal deliveries, was referred to the emergency room with acute abdomen with suspected left ovarian torsion. She had complaints of acute onset abdominal pain over 3 hours preceded by intermittent dull aching pain since a week. The current episode of pain was associated with two episodes of vomiting. On examination, she had tachycardia (110/min), blood pressure of 90/70 mm of Hg, pallor and bore a toxic, debilitated look. Abdominal examination revealed guarding and tenderness. On per vaginal examination, the uterus was normal size, anteverted with restricted mobility. There was cervical

motion tenderness and a left and posterior forniceal mass of 15 × 10 cm with tenderness. Routine investigations were reported with complete hemogram revealing hemoglobin of 7 g/dl. Blood and blood products were confirmed, and one unit of packed red cells was transfused preoperatively. Ultrasound study was suggestive of torsion of left ovarian cyst of size 18 cm × 12 cm × 10 cm, with no internal septations or vascularity.

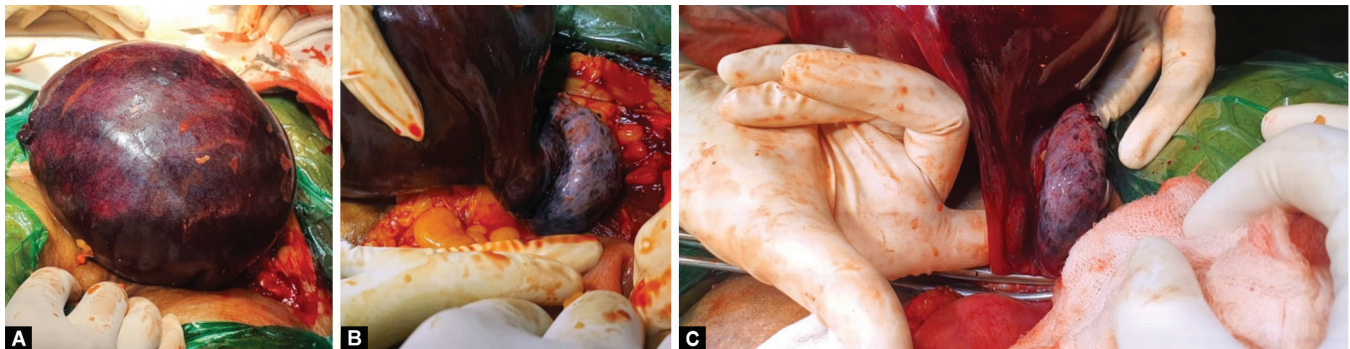
On basis of clinical and sonography findings, emergency exploratory laparotomy with transverse incision was performed. The cyst was delivered as seen in [Figure 4A](#), and care was taken to avoid rupture and spillage of contents. Intraoperatively, there was an unruptured left-sided hemorrhagic cyst of 18 cm × 12 cm with necrosis and two and a half coils over its own pedicle as seen in [Figure 4B](#). The left ovary was not visualized separately, and the left fallopian tube was necrosed. Uterus and contralateral adnexa were normal. Left salpingo-oophorectomy was performed by applying the clamp at the infundibulopelvic ligament, as seen in [Figure 4C](#). Histopathological examination confirmed the diagnosis of a hemorrhagic cyst. The patient was transfused to another unit of packed red cells postoperatively and had an uneventful recovery.

#### Case 5: Laparoscopic Approach

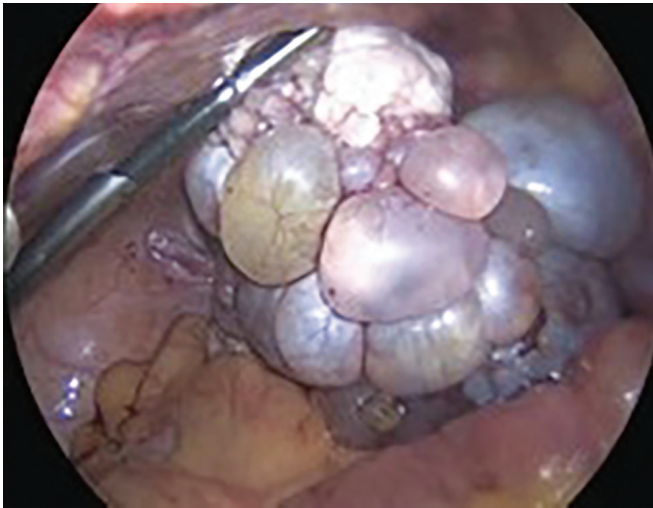
A 26-year-old, P2L2, with previous two cesarean sections visited to outpatient department with pain in the abdomen since past 6 months and inability to conceive since 3 years (secondary infertility). Abdominal examination was normal, and Pfannenstiel scar cesarean section was noted. On per vaginal examination, the uterus was anteverted, normal size, with restricted mobility, and a cystic mass of 6 cm × 4 cm was felt in the posterior fornix. An impression of secondary infertility with tubo-ovarian mass was made. Routine investigations including infertility workup were performed, which was normal. Ultrasound of pelvis was suggestive of the bulky uterus of 9 cm × 3.4 cm size with tortuous tubular cystic lesion in the pelvis, posterior to the uterus with few septae within, ovaries appeared separate but in close proximity with this lesion, and an impression of right-sided hydrosalpinx or an ovarian septate cyst was given. Computer tomography imaging of the abdomen and pelvis was suggestive of a large multiloculated cystic lesion of 9 cm × 4 cm × 3 cm in the pelvis, posterior to the uterus with extension to both adnexa, with faint calcification within cystic wall, mostly suggestive of tubo-ovarian cystic mass. MRI of the pelvis was suggestive of a multiloculated cystic lesion 8 cm × 4 cm × 3 cm in the pelvis posterior to the uterus with multiple internal septations with minimal enhancement, without solid component, and with contents showing fluid signal without hemorrhage within. The



**Fig. 3:** Large ovarian cyst exteriorized through vertical midline laparotomy incision



**Figs 4A to C:** (A) Large hemorrhagic ovarian cyst with torsion exteriorized through transverse laparotomy incision; (B) Unruptured left-sided hemorrhagic cyst; (C) Left salpingo-oophorectomy was performed by applying the clamp at the infundibulopelvic ligament



**Fig. 5:** Laparoscopic view of ovarian cysts

lesion was identified separately from both the ovaries and appeared benign in nature, and could represent a complex para-ovarian cyst.

Operative laparoscopy was performed. Intraoperative uterus was normal size, left-sided hydrosalpinx of 8 cm × 6 cm × 2 cm was present at the fimbrial end, left ovary was identified with multiple fluid-filled cysts around it as seen in [Figure 5](#), and right-sided fallopian tube and ovaries were normal. Left salpingectomy along with puncturing the cysts around the ovary and cyst wall excision was done. The specimen was retrieved through endo-bag, and the entire sample was sent for histopathological examination. Right-sided fallopian tube and both sides ovaries, and hence the much-desired fertility<sup>1</sup> were conserved. Postoperative period was uneventful. The sample sent for histopathology was suggestive of simple benign serous cystadenoma. The patient was followed up to guide her for subsequent fertility and conceived successfully 8 months later.

## DISCUSSION AND CONCLUSION

Ovarian cysts over 5 and 15 cm in diameter are described as large and giant, respectively, and when encountered possess a dilemma on whether to proceed by open or the laparoscopic route, the decision on the approach is complicated by a potential malignant risk in these cysts. The open approach, via Pfannenstiel or vertical midline laparotomy, offers excellent exposure and minimizes

the risk of cyst spillage, however, has its distinct disadvantages. Alternatively, an exclusive laparoscopic approach has excellent advantages, however, huge ovarian masses arrive with some limitations in terms of visualization and manipulation due to the large volume of the cyst. Further disadvantages of this technique are the rupturing and spilling of cyst contents into the peritoneal cavity and unexpected malignancy, apart from limited expertise that can hamper this approach.

Spillage of ovarian cyst fluid during surgery is likened with risks like chemical peritonitis, pseudomyxoma peritonei, recurrence of tumor, gliomatosis peritonei, and dissemination of malignant cells.<sup>2</sup> Considering these risks, the ideal surgical approach should minimize the risk of spillage of tumor contents while minimizing surgical morbidity. Although data has been published on laparoscopic<sup>3</sup> or laparotomy-assisted management of large and giant cysts, midline laparotomy is still preferred by many surgeons, particularly in cases of giant cysts. The various surgical approaches for these large masses should often be used in conjunction with techniques for cyst decompression and cyst retrieval to minimize surgical morbidity. The technique of repeated paracentesis has been associated with tumor seeding of the peritoneal cavity, bleeding, infection, and increased adhesions resulting in difficult cyst removal and therefore is not recommended.

Depending upon the clinical and imaging findings in collaboration with reports of tumor markers, the plan of action is formulated which is often surgery at the fore. The route and technique of surgery often depend upon the characteristics of the mass and the availability of expertise. To date though, there are many descriptions of techniques that allow safe decompression of the cyst with a minimal risk of fluid spillage or rupture, the basic principle in any technique is the isolation of the abdominal cavity from the area where the mass is to be punctured to prevent inadvertent spillage which can be dangerous in borderline and malignant tumors.

## REFERENCES

1. Chatterjee S, Chatterjee A, Chowdhury RG, et al. Fertility promoting laparoscopic surgery: Our experience. *J South Asian Feder Obst Gynae* 2012;4(1):12–16. DOI: 10.5005/jp-journals-10006-1163.
2. Watanabe E, Tanaka K, Takeda N, et al. Surgical technique to prevent spillage of cyst fluid during operation for cystic ovarian tumors. *Pediatr Surg Int* 2013;29(6):645–649. DOI:10.1007/s00383-013-3277-9.
3. Gautam H, Kathar K, Goswami P, et al. A case of cystic struma ovarii: A rare ovarian tumor. *J South Asian Feder Obst Gynae* 2020;12(5):320–322. DOI: 10.5005/jp-journals-10006-1815.