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Laparoscopic management of large ovarian cysts: more than cosmetic considerations

以腹腔鏡技術剔除體積大的卵巢囊腫：外觀以外的考慮因素

Laparoscopic management of three cases, each with a large ovarian cyst, is reported. Appropriate preoperative assessment, patient counselling, and good laparoscopic skills are the cornerstones of successful laparoscopic management in such patients.

本文報告三個以腹腔鏡技術治理病症的個案，患者卵巢內均發現有體積大的囊腫。適當的術前評估、給病人提供諮詢服務以及純熟的腹腔鏡技術，是這類腹腔鏡手術順利完成的三大要素。

Introduction

Laparoscopy has been considered the gold standard approach for managing benign adnexal masses. However, the management of large masses with suspicious clinical or ultrasound features remains controversial. Should it involve laparoscopy or laparotomy? In this report, we present three cases, each with a large ovarian cyst managed successfully by laparoscopy.

Case reports

Case 1

A 16-year-old female student with good past health was referred with a pelvic mass. She first presented with abdominal distension of 1 year's duration. Physical examination showed a grossly distended abdomen, corresponding to pregnancy at term, with a non-tender pelvic mass. There was no inguinal or cervical lymphadenopathy detected.

Transabdominal ultrasound examination confirmed the presence of a hypoechogenic cystic mass. The exact size of the cyst was difficult to estimate because its boundaries fell outside the range of the ultrasound probe. There was no definite solid area or ascites seen. The cancer antigen (CA) 125 level was 10.6 IU/mL. Thyroid function was checked incidentally 1 month before surgery and the result was normal.

After preoperative counselling and considering the low risk of malignancy, the patient and her family indicated a preference for laparoscopic surgery, as it offered a better cosmetic result and quicker recovery than laparotomy. They accepted the risk of conversion to laparotomy and the chance of spreading malignant cells during the operation in the event of encountering a malignant tumour.

Laparoscopy was carried out. A 12-mm intra-umbilical incision was made, with an open-entry technique employed to avoid accidental perforation of the cyst. Two 5-mm ports were made on each side of the abdomen. Peritoneal washings were saved for cytological examination. On laparoscopic inspection, the cyst wall was intact, smooth, and adhesion-free. The cyst wall was punctured with a 5-mm trocar and sleeve under vision. A total of 6 L of serous fluid was aspirated. When the cyst became flaccid, the puncture site on the cyst was grasped with forceps. Laparoscopic right oophorectomy was then done. The cyst wall

Key words:

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was retrieved through the umbilical port together with forceps and sleeve. The deflated cyst slipped out easily. A 5-mm laparoscope was inserted through the side port and any leakage of cystic fluid was observed under direct vision. The peritoneal cavity was washed with warm saline until clear return. The uterus, fallopian tubes, the left ovary, appendix, liver surface, and the subdiaphragmatic area appeared normal. The tumour excised measured approximately 40 cm x 30 cm. The operation lasted for 90 minutes with blood loss of 10 mL. The pathology report confirmed a mature cystic teratoma, consistent with struma ovarii. Cytology examination of the peritoneal washings showed no malignant cells. The patient recovered well and was discharged on postoperative day 2. She remained well 8 weeks after the operation.

Case 2

A 74-year-old woman with five adult children had enjoyed good past health. She presented with progressive abdominal distension of 1 year's duration, associated with shortness of breath. There was no pain, postmenopausal bleeding, or constitutional symptoms reported. Abdominal and pelvic ultrasound examinations were performed and a large ovarian cyst measuring at least 20 cm was identified. It was multiloculated, with numerous internal septa but no solid component. There was no ascites seen. The CA 125 level was 26.2 IU/mL.

After discussing management options, the patient indicated a preference for laparoscopic surgery. Open laparoscopy was then performed. The large ovarian cyst was found to originate from the left ovary. Peritoneal washings were saved for cytological examination. The cyst was punctured by a 5-mm trocar and sleeve. A total of 6 L of fluid was aspirated from the cyst. There was no difficulty in the drainage of cyst content. Bilateral salpingo-oophorectomies were performed. The operation lasted for 95 minutes, with blood loss of 50 mL. The patient recovered well and was discharged on postoperative day 1. Pathological reports showed a stage IA, left borderline, mucinous ovarian tumour of endocervical type. However, she declined further staging procedures. She remained well and serial CA 125 levels remained normal at the last follow-up, 32 months after surgery.

Case 3

A 23-year-old university student presented with abdominal distension of 1 year's duration. Ultrasound examination showed a right hypoechoic ovarian tumour measuring 22 cm x 20 cm in size. There was no definite solid area or ascites seen. The CA 125 level was elevated to 118.3 IU/mL. Laparoscopic-assisted staging surgery was arranged after discussion with the patient because of the possibility of malignancy. Open laparoscopy was performed. An intact right ovarian tumour with a smooth capsule was found, measuring approximately 25 cm x 25 cm, with a fluid content of 5 L. Peritoneal washings were saved for cytological examination. Laparoscopic right salpingo-oophorectomy

was performed. This was followed by left ovarian biopsy and infracolic omental biopsy. The specimens were delivered inside a bag. The operation lasted for 130 minutes, with an estimated blood loss of 80 mL. The patient recovered well and was discharged on postoperative day 3.

Pathological reports showed a stage IA, right, serous, papillary cystic tumour of borderline malignancy. She remained well. Serial CA 125 levels were monitored and were within the normal range 2 months after the operation and remained normal during the follow-up of over 27 months.

Discussion

Management of ovarian cysts either by laparotomy or laparoscopy is largely determined by clinical features. For all three cases, either laparotomy or laparoscopy were possible management options. The choice made related to patient factors, the nature of the operation, and disease factors. Relevant patient factors include history of previous abdominal surgery, premorbid conditions, and patient preference. Decreased blood loss, lesser pain, and analgesic requirements, as well as more rapid recovery and shorter hospital stays are advantages of the laparoscopic approach compared with laparotomy. The cosmetic effect of laparoscopy is also important for young patients. During preoperative counselling, all three patients fully understood the limitations of preoperative assessment modalities, including ultrasound examination and CA 125 levels, and accepted the risk of malignancy, further surgery and/or chemotherapy.

The use of the laparoscopic approach for ovarian cysts with suspicious features remains controversial due to potential spillage of ovarian cyst contents, delayed staging for unexpected malignant lesions, and the possibility of acceleration of the spread of malignant cells. In excising large ovarian cysts with a laparoscopic approach, it is not easy to avoid rupture or spillage of contents into the peritoneal cavity. Spillage of dermoid cyst material can lead to an extensive inflammatory reaction, resulting in peritoneal adhesion formation, while spillage from a mucinous cyst may result in pseudomyxoma peritonei.¹ Spillage of malignant cystic contents can result in intra-peritoneal dissemination of malignant cells and can advance the stage of the disease.² Given these concerns, it is recommended that all ovarian cysts should be removed via a laparoscopic bag or via a colpotomy using a transvaginal tube.³ However, minimal spillage cannot be completely eliminated even if these precautions are employed.

It is not uncommon to encounter an unexpected malignant ovarian mass. Whether one proceeds to immediate or delayed surgical staging depends on individual circumstances, the availability of a trained surgeon, and the patient's preoperative counselling and expectations. There is no established guideline on optimal timing for rescheduling

the staging operation. Canis et al⁴ have suggested it should be considered as an "oncologic emergency". However, their mean reported time interval for the delay ranged from 2.5 weeks to 12.5 weeks. A formal and accurate staging procedure may delay definitive treatment of ovarian cancer in terms of weeks.⁵ However, a complete management plan based on accurate staging is more beneficial to patients in terms of long-term survival than undertreatment due to poor or no staging.⁶

Animal studies have shown that laparoscopy may accelerate the dissemination of malignant cells.⁷ However, this is not proven in humans. Maiman et al⁸ have suggested that laparoscopy has become synonymous with ovarian cancer mismanagement largely because of the surgical mismanagement associated with laparoscopic procedures. Mismanagement identified included aspiration of malignant cysts without removal (38%), partial removal of malignant cysts (33%), and lack of utilisation of frozen section specimens (60%) and serum tumour markers (88%). Childers et al⁹ have also commented that laparoscopy itself is not the cause of the problem for these patients and that surgical mismanagement can occur with any surgical approach.

Conclusion

Management of benign ovarian masses using the laparoscopic approach has become increasingly popular due to its advantages over the traditional approach of laparotomy. These advantages are more than cosmetic. However, for large ovarian masses with malignant risk, the laparoscopic approach remains controversial. Regardless of which approach is used, strict intra-operative protocols should be followed. These include careful exploration of the intra-peritoneal cavity, saving peritoneal washings for cytology tests, and ensuring minimal spillage of contents in the event

of capsular rupture. We have managed three cases with large ovarian masses laparoscopically and outcomes have appeared favourable in each case.

Appropriate preoperative assessment, patient counselling, and good laparoscopic skills remain the cornerstones of successful laparoscopic management of large, potentially malignant ovarian masses. Even in the event of malignancy, further conservative laparoscopic staging procedures are feasible in selected cases. Given the numerous advantages of laparoscopy, laparoscopic management of large ovarian masses warrants further attention.

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