Thai Journal of Obstetrics and Gynaecology
March 1996, Vol. 8, pp. 15-19

GYNAECOLOGY

Laparoscopic Removal of Ovarian Cysts Using Home-made Endopouch

Hatern Tintara MD,
Roengsak Leetanaporn MD.

Department of Obstetrics and Gynaecology, Faculty of Medicine, Prince of Songkla University, Hat Yai, Songkla 90112, Thailand

ABSTRACT

Objective To assess the use of home-made endopouch, made from surgical glove, to remove ovarian cyst by laparoscopic approach.

Design A retrospective analysis study.

Setting A teaching hospital serving a regional population in Southern Thailand.

Subjects Twenty-one women who had undergone laparoscopic removal of ovarian cysts between March 1993 and March 1994.

Main outcome measures Operative time, intra-operative and post-operative complications.

Results The mean operative time was 102 ± 16 min, all patients were discharged within 72 hours with minimal pain and there were no intra-operative and post-operative complications.

Conclusion This technique is cost-effective and permits little or no risk of intraperitoneal spillage without the need to extend the wound. We believe that its use is appropriate in developing country.

Key words : endopouch, ovarian cyst, laparoscopic surgery

Laparoscopic removal of ovarian cysts is a controversial issue. The advantages of laparoscopic surgery over laparotomy are reduced pain, morbidity, duration of hospital stay and the convalescent period.[1] However, the major problem of such an approach is how to remove the tumour without spillage of its contents. Laparoscopic removal of an apparently benign ovarian cyst of which pathologic analysis shows to be malignant or borderline may be problematic if the cyst ruptures and peritoneal seeding occurs.[2,3] Using only transabdominal or transvaginal ultrasonography cannot absolutely rule out malignant cysts.[4] The serum CA 125 level may be used to rule out malignant cysts but the accuracy is high in only postmenopausal patients[5,6] and is not always

available in Thailand.

We describe the use of a home-made endopouch, made from a surgical glove, which avoids the problem of cyst content spillage in laparoscopic removal of ovarian cysts.

Materials and Methods

A total of 21 cases of benign ovarian cyst which were removed laparoscopically at Songklanagarind Hospital from 1 March 1993 to 1 March 1994 were retrospectively evaluated. Indications for surgery included pelvic pain, persistent ovarian cyst after hormonal suppression, and ovarian cyst in the postmenopausal period. All had no ultrasonographic finding suggestive of malignancy. Measurement of serum CA 125 level was not available during the study period.

The surgery was performed under general anaesthesia with endotracheal intubation and the patient in the lithotomy position. After Foley catheter was retained, a uterine manipulator was inserted into the uterine cavity. Pneumoperitoneum was established with Verres needle and electronic CO_2 insufflator. Laparoscopy was performed using a 10-mm O-degree telescope inserted subumbilically and visualized on a screen monitor. 10-mm and 5-mm disposal cannulae were inserted laterally in the left and right iliac fossae respectively, avoiding the inferior epigastric vessels after identifying them by transillumination of the abdominal wall.

The pelvis and abdominal cavity were evaluated thoroughly. The ovaries were inspected carefully for evidence of malignancy and to assess the possibility of cystectomy. Oophorectomy or salpingo-oophorectomy was performed by sequential bipolar electrodissection and division of the infundibulopelvic ligament, uterine tube and utero-ovarian ligament, taking care not to rupture the cyst. The salpingo-oophorectomy was performed unless preservation of fertility was required as this accelerated the surgical procedure.

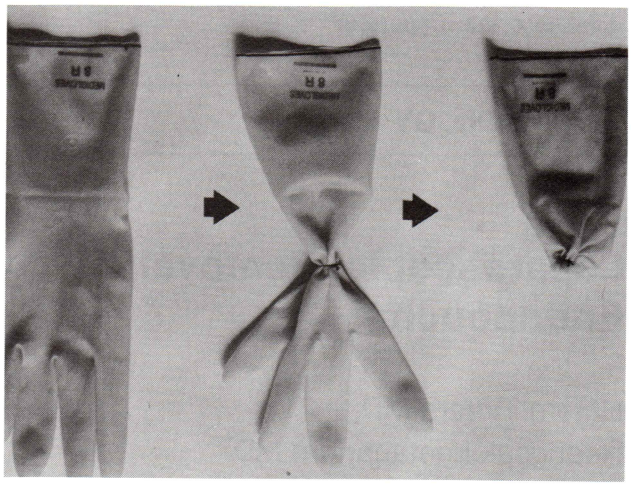


Fig. 1. Step for making home-made endopouch.

Endopouch preparation

The home-made endopouch was made from a #8 sterile surgical glove. The surgical glove were tied tightly with #1-0 black silk at the level just above all the finger projections and then the finger portion of the glove was excised to make a bag-like device. Leakage at the stump of the pouch was tested by closing the pouch-opening with air inside the pouch, then submerging the stump in sterile irrigation solution to see whether there is any leakage of air bubbles or not. The preparation procedure is illustrated in Fig.1.

Technique of insertion and using the home-made endopouch

The home-made endopouch was inserted through the 10-mm port into the abdomen. The pouch was placed in the anterior part of the cul-de-sac and the pouch-opening was opened by grasping forceps. In case where the excised ovarian cyst was smaller than the pouch-opening, it was grasped by one of the grasping forceps and

gradually slipped into the pouch. But if the cyst was large, it was first placed at the anterior part of the cul-de-sac. The pouch-opening was then opened with two grasping forceps, positioned it to the cyst and pushed the cyst into the pouch against the anterior part of the cul-de-sac. After that, each rim of the pouch-opening was grasped together with grasping forceps to close the pouch. Then, the 10-mm port in the left iliac fossa was removed and the wound was sealed with the surgeon's finger, waiting for appropriate pneumo-peritoneum, then inserting the sponge holding forceps in via the 10-mm wound to grasp the pouch opening near the grasping forceps, releasing the grasping forceps and pulling the pouch-opening through the 10-mm wound above the skin. The

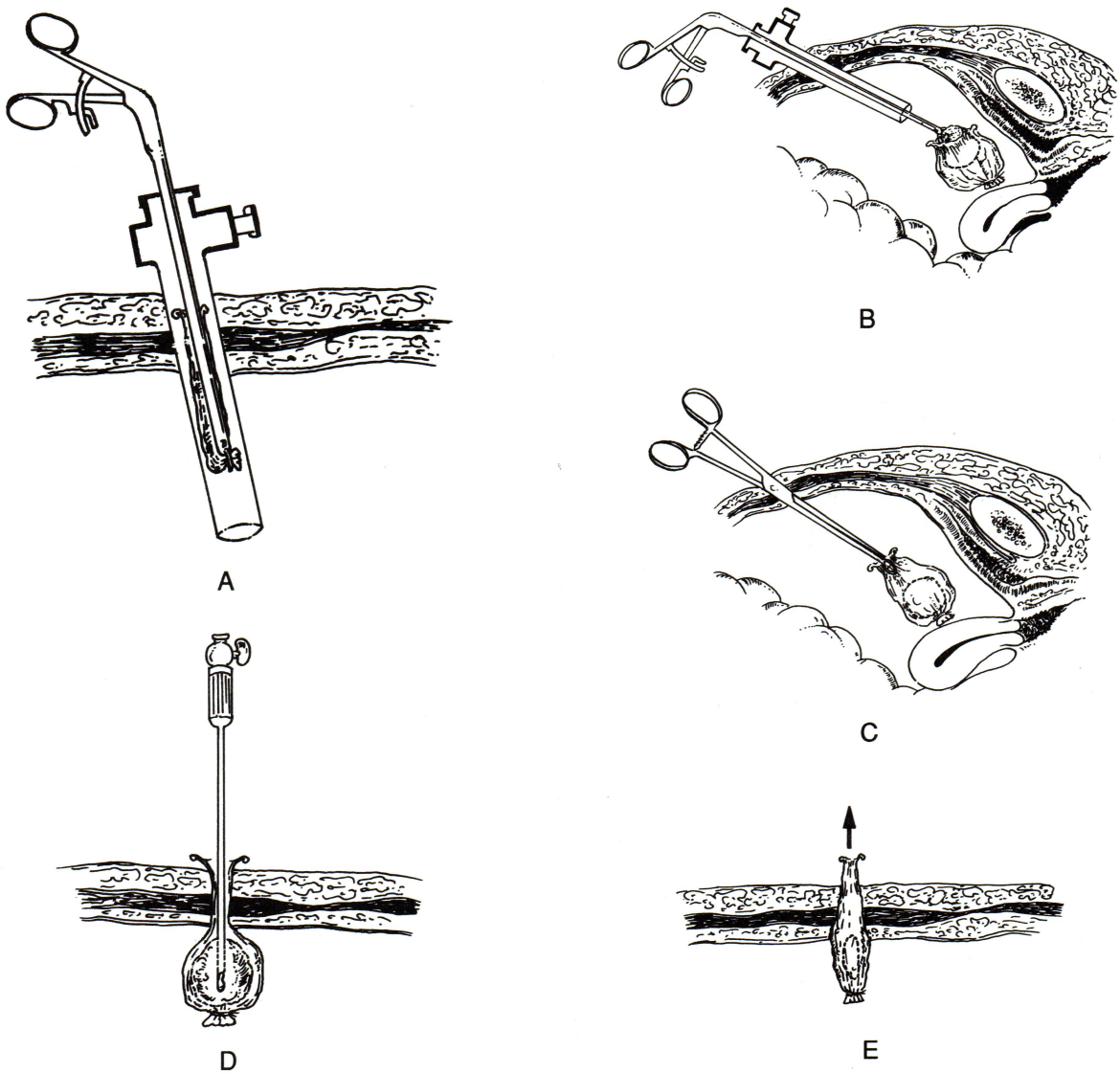


Fig. 2. Technique of insertion and using the home-made endopouch. A) The endopouch can be inserted through a 10-mm port. B) The excised cyst was slipped into the pouch. C) The pouch-opening was grasped with grasping forceps. D) The cyst contents were aspirated with Verres needle. E) The pouch and cyst wall were delivered through the abdominal wall.

pouch-opening was opened outside the abdominal cavity and the cyst contents were aspirated with Verres needle via the neck of the pouch. Visualization of the home-made endopouch during aspiration by laparoscope was very important to prevent pouch perforation by Verres needle. Finally, the pouch and its remaining contents were delivered through the abdominal wall once the cyst had been sufficiently reduced in size to pass through the incision. The technique of insertion and using the home-made endopouch is illustrated in Fig.2.

Results

The average age ± SD of the 21 patients was 34.8 ± 10.0 years (range 21-63 years). The mean diameter of the ovarian cysts was 6.4 ± 0.9 cm (range 5-8 cm). In all fifteen multipara patients, the tumour involved the whole ovary and normal ovarian tissue could not be separated from the cysts, therefore, salpingo-oophorectomy was performed. Oophorectomy was performed in only 6 patients. The pathological diagnosis of ovarian cysts were 8 dermoid cysts, 8 endometriomas, 3 serous cystadenomas, 1 mucinous cystadenomas, and 1 follicular cyst.

The mean operative time was 102 ± 16 min (range 80 - 120 min) with minimal blood loss in all cases. All operations were performed without complications. It was not necessary to extend the skin incision to deliver the tumour in any of the cases. All 21 patients required only oral analgesic after operation. Twenty patients were discharged within 48 hours, only 1 patient at 72 hours. The mean postoperative hospital stay was 30 ± 15 hours (range 6 - 72 hours). There was no postoperative peritonitis in all cases. The mean convalescent period was 5.6 ± 2.2 days (range 3 - 10 days). All of the patients were followed with pelvic examinations and ultrasonography at 12 months, and all were negative for pelvic mass.

Discussion

A variety of techniques can be employed successfully to manage benign ovarian cysts, depending on the patient's desire for future fertility, normal ovarian tissue left, and the surgeon's skill and confidence. The laparoscopic aspiration of unilocular, smooth-walled, translucent ovarian cysts, or dermoid cysts remains controversial.[1,7] The main concern is spillage of malignancy or sebaceous material. Careful preoperative evaluation of the patient, combining transabdominal or transvaginal ultrasonography of ovarian tumours with measurement of serum CA 125 level, may improve greatly the accuracy of diagnosis of ovarian malignancy. However, malignancy is not absolutely excluded. Removing ovarian cysts with a commercial endopouch has been reported.[1,2,8] The use of an endopouch completely avoids spillage of cyst or tumour contents into the abdominal cavity or through the tract of the incision. The technique described in this paper is cost-effective and appropriate for developing countries where serum CA 125 level is not available and cost of laparoscopic surgery is high.

The use of a home-made endopouch is limited in the size of the pouch for passing through the 10-mm port, the circumference of the opening of #8 surgical glove is around 22 cm. Therefore, this technique cannot be used when the smallest diameter of the tumour is significantly larger than 7 cm. Such a large tumour can be removed intact or with minimal intraperitoneal spillage by posterior colpotomy.[1]

Considering that malignancy is very uncommon in women under the age of 40,[9] we believe that expert laparoscopic management in selected cases, with careful technique to minimize the chance of cyst content spillage, is a safe and

beneficial alternative to laparotomy. With use of the home-made endopouch demonstrated in this study, the risk of cyst content spillage can be minimized without increasing the cost. In all our patients, the duration of operation was slightly longer than that reported for laparoscopic removal of ovarian cysts using a commercial endopouch.[8] This is the most important element of laparoscopic management of ovarian cyst in developing countries, although considerable expertise with laparoscopic manipulation is required.

References

1. Reich H, McGlynn F, Sekel L, Taylor P. Laparoscopic management of ovarian dermoid cysts. J Reprod Med 1992; 37: 640-4.
2. Kahn JJ, Bornstein SJ. Laparoscopic removal of ovarian lesions : a report of two cases. J Reprod Med 1993; 38: 903-4.
3. Sainz de la Cuesta R, Goff BA, Fuller AF Jr, Nikrui N, Eichhorn JH, Rice LW. Prognostic importance of intraoperative rupture of malignant ovarian epithelial neoplasms. Obstet Gynecol 1994; 84: 1-7.
4. Herrman UJ, Locher GW, Goldhirsch A. Sonographic pattern of ovarian tumors : prediction of malignancy. Am J Obstet Gynecol 1987; 69: 777-81.
5. O'Connell GJ, Ryan E, Murphy KJ, Prefontaine M. Predictive value of CA 125 for ovarian carcinoma in patients presenting with pelvic mass. Obstet Gynecol 1987; 70: 930-2.
6. Chen DX, Schwartz PE, Xinguo L, Zhan Y. Evaluation of CA 125 levels in differentiating malignant from benign tumors in patients with pelvic masses. Obstet Gynecol 1988; 72: 23-7.
7. Nezhat C, Winer WK, Nezhat F. Laparoscopic removal of dermoid cysts. Obstet Gynecol 1989; 73: 278-80.
8. Yuen PM, Rogers MS. Laparoscopic removal of dermoid cysts using endopouch. Aust NZ J Obstet Gynaecol 1993; 33: 397-9.
9. Tintara H, Mitarnun W. A clinico-pathologic study of ovarian tumors. J Med Assoc Thai 1993; 76: 405-9.