LAPAROSCOPIC TECHNIQUE FOR EXTRACTING BENIGN DERMOID CYSTS

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SUMMARY

Many surgeons are reluctant to remove dermoid cysts laparoscopically due to risk of chemical peritonitis associated with intraoperative rupture of the cyst. We have removed 6 dermoid cysts laparoscopically. Intraoperative spillage occured in all cases and was managed by vigorous lavage. None of the patients had post-operative peritonitis, indicating that intra-operative spillage of dermoid cysts is not associated with morbidity due to peritonitis as long as vigorous lavage is performed.

INTRODUCTION

Adnexal masses traditionally have been managed by laparotomy. However, advances in technology of video-laparoscopy, together with improvement in diagnostic tools such as Ultrasonography and Tumor markers, have made it possible to treat most of them laparoscopically. In 1986 Mettler L & Semm K 1986 described treating more than 70 dermoid cysts by laparoscopy. Later many reports of laparoscopic cystectomies without complcations due to spillage were published (Bollen N, 1992, Nezhat C., 1989, Reich Her al. 1992).

Benign cystic teratomas (dermoid cysts) are the most common germ cell tumors, accounting for about 20% of all ovarian neoplasms. They tend to occur at a relatively early age. Most teratomas are benign but malignant changes do occur in 1-2% of cases. Teratomes can cause adnexal torsion or they may rupture and provoke acute peritonitis. Surgeons frequently are reluctant to remove dermoids laparoscopically due to high risk of

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intraperitoneal rupture and presumed risk of subsequent chemical peritonitis. This manuscript considers the feasibility of laparoscopic removal of benign dermoid cysts and demonstrating that intraoperative rupture of dermoid cysts is not associated with chemical peritonitis as long as vigorous lavage is performed.

MATERIAL AND METHODS

From March 1992 to February 1996 six dermoid cysts were removed laparoscopically at our Institute. The age of the patients varied from 24 to 36 years. The diagnosis in five patients was made during infertility investigations. The cysts in these patients were quiet and symptomless. Size varied from 8 cm to 12 cm. In one patient aged 24 yrs. having three children there was severe pain and vomiting. She was having torsion of dermoid cyst, about 12cm in size. Ovarian cystectomy was done in all five infertility cases and ovariotomy was done in the patient having torsion of cyst. No patient had sonographic patterns of advanced ovarian malignancy or malignant dermoid.

Bowel preparation had been given a day before surgery. Patients were admitted on the morning of surgery. The procedures were performed under general anesthesia. After induction of pneumoperitoneum with CO_2, a standard 10 mm cannula was inserted subumbilically. The 10 mm O-degree panoromic laparoscope was placed and connected to a video camera. Two 5 mm cannulas to hold the ancillary instruments were placed in the abdomen under direct vision, very lateral at the level of the exterior one third of, and some 3 Cm above the inguinal ligament to avoid inferior epigastric vessels. A fourth 10 mm cannula was inserted in the midline, 6 cm above the pubic bone within the hairline to introduce 10 mm grasping forceps for removing the tissues. Use of three or four portals of entry does not increase post operative pain or hospitalisation.

Firstly, the abdominal cavity and cyst were inspected. A small opening was made through the cyst wall with a monopolar coagulator and scissors. Then the contents of cyst were aspirated and the cyst flushed. Peritoneal spillage was kept to a minimum. This procedure was sometimes difficult as the contents were generally thick and often contained hair, teeth or other solid components. The abdominal cavity was abundantly flushed with Ringer's lactate solution heated to 37°C (in an incubator). The incision in the cyst wall was enlarged and cleavage plains between ovarian cortex and wall of cyst were looked for. The cyst wall was separated from ovarian cortex by means of traction by two Manhes grasping forceps. The position of forceps changed in different parts as often as required. Thorough haemostasis was achieved with bipolar coagulation. Once free, the cyst wall was removed through 10 mm midline cannula. If the cyst wall was voluminous, the midline 10 mm port was enlarged by 18 mm trocar canula or the cyst wall was cut into smaller pieces. Finally, the abdomen was again repeatedly irrigated until all greasy droplets and debris were removed. During the cleaning, the patient was moved from the Trendelenburg to the anti-Trendelenburg position to prevent

sub-diaphragmatic accumulation of fluid and debris. In patient, where ovariotomy was done, three Roder's Knots were passed at the pedicle of cyst, two proximally one distally. Tissues were cut with monopolar scissors between the two proximal and the distal knot. Skin closure was done with subcuticular 4-0 plain catgut. All 6 patients were discharged on the evening of operation.

RESULTS

The operative time ranged from 60 minutes to 120 minutes depending on the numbers of other procedures done concurrently : Chromopertubation, adhesiolysis. The histopathological examination of each specimen was consistent with benign cystic teratoma.

None of the women experienced signs or symptoms of peritonitis. They were seen one week, 6 weeks and 12 weeks post-operatively, and none had complaints related to surgery. Follow up Ultrasound was done in each case after 12 weeks and no recurrence was found in any case.

DISCUSSION

Operative Laparoscopy is on its way to changing radically the approach to and management of adnexal masses. Laparoscopy, however, is only the means of access, and not the technique. It has significantly reduced the higher morbidity and longer hospital stay associated with laparotomy.

Laparoscopic removal of dermoid cysts is a controversial issue due to risk of intraperitoneal spillage and possibility of chemical peritonitis. A review of the consequence of intraperitoneal rupture of benign cystic teratomas described a chemical peritonitis that may occur when the peritoneal membranes come in contact with the sebaceous contents of the cysts (Kistner R.W, 1952). The reported high mortality associated with this complication laid the foundation for the principle, long accepted by most gynecologists, that dermoid cysts must be removed intact (Waxman M et al 1976). It should be noted that the fatalities disclosed by that review were all the results of spontaneous rupture of the dermoid cysts before surgery. This likely represents a different entity than spillage during surgery, when the contents can be removed quickly and the peritoneal surfaces washed clean. The intense peritoneal reaction that occurs with spontaneous rupture is completely avoided when rupture/spillage occurs under the controlled conditions of the operating room.

Many laparoscopic surgeons have developed other techniques of removal of dermoid cysts without peritoneal spillage, such as Semm's technique of drainage through the posterior cul-de-sac (Semm K. 1986) or the use of endoscopic bagging devices. These procedures are not universally applicable. In case of a young, virginal woman the cul-de-sac cannot be easily opened and repaired. Even in parous women, very large dermoids will spill their contents despite colpotomy or the use of endoscopic bagging devices.

CONCLUSION

Intraoperative rupture of dermoid cysts

occured in all six patients, but no case developed chemical peritonitis. All patients recovered promptly and returned to normal activity within a week of surgery. Therefore, in patients with benign dermoid cysts, controlled intraoperative spillage of the contents does not contribute to morbidity provided that vigorous lavage is performed.

REFERENCES

1. *Bollen N, Camus M, Tournaye H et al : HUM. Reprod. 7:1429, 1992.*
2. *Kistner RW : Obstet Gynec. Surv. 7:603, 1952.*
3. *Mettler L, Semm K : Shift of Laparotomy to pelviscopy for major gynaecological operations. Presented at the 15th annual meeting of the American Association of Gynecologic Laparoscopists, Orlando, FL, November 19, 1986.*
4. *Nezhat C, Winer W, Nehzat F : Obstet Gynec. 73:278, 1989.*
5. *Reich H, Moglynn F, Sekel L, et al : J. Reprod. Med. 37:640-644, 1992.*
6. *Semm K : Endoscopic ovarian surgery including adnexectomy and cystectomy. Presented at the 15th annual meeting of the American Association of Gynecologic Laparoscopists, Orlando, FL, November 19, 1986.*
7. *Waxman M, Boyce J G : Obstet Gynecol 48: 9S, 1976.*