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Successful Laparoscopic Management of Huge Ovarian Cysts- A study of 25 cases.

Gynaecology

KEYWORDS: Huge ovarian cysts, Decompression, laparoscopic management.

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ABSTRACT

OBJECTIVE:
To assess the feasibility and surgical outcome of laparoscopic surgery among women with huge benign ovarian cysts.

METHODS:
25 cases of huge ovarian cysts with maximum diameter more than 15 cm which were managed laparoscopically, were retrospectively studied from November 2014 to October 2016. Ultrasound, CT scan and tumor markers were done to establish benign nature of the cyst. Ovarian cysts with preoperative suspicion of malignancy and huge dermoids were excluded from the study. Surgery performed included cystectomy, salpingo oophorectomy or lap hysterectomy depending on patient's age and desire for future pregnancy.

RESULTS:
Twenty five patients underwent laparoscopic surgery over 2 years. The mean (range) age was 43.7 years (16-80 years) Laparoscopic surgery was successful in 24 (96%) patients. The procedure was converted to laparotomy in 1 patient due to severe endometriosis and sigmoid adhesions. The mean (range) operative time, estimated blood loss and hospital stay for the laparoscopic procedures were 50 (45-120 min), 89 (20-100 mL) and 2(2-3 days), respectively. The surgical procedures performed were: unilateral or bilateral salpingo-oophorectomy , ovarian cystectomy and TLH with BSO. The cysts were extracted after decompression either through the vagina along with uterus or by umbilical incision. Pathologic findings included serous cystadenoma , mucinous cystadenoma , endometriosis , benign epithelial-lined cyst, cellular fibroma . There were no borderline or frankly malignant cysts in our study. The postoperative recovery was uneventful in all women.

CONCLUSION: With appropriate selection of cases and adequate surgical expertise, laparoscopy can be safely performed in huge benign ovarian cysts with reduced morbidity and hence, should replace laparotomy in such cases.

INTRODUCTION

Traditionally, huge ovarian cyst is defined as any cyst larger than 15 cm or extending above umbilicus.[1] Though for most of the benign ovarian masses laproscopy has become the gold standard, for huge ovarian cysts, the role of laparoscopy is still controversial. This is so because the risk of malignancy especially tumors of borderline malignant potential can not be completely ruled out in such large cysts preoperatively.[2] Other issues are related to the technical difficulties in handling such large cysts without spillage, limited working space and specimen retrieval. We report 25 cases of huge benign ovarian cysts which were managed successfully with laparoscopic approach at our institution without any complication over a period of 2 years.

MATERIAL & METHOD

25 cases of huge ovarian cysts with maximum diameter more than 15 cm which were managed laparoscopically, were retrospectively studied from November 2014 to October 2016**.** Ultrasound, CT scan and tumor markers were done to establish benign nature of the cyst. Ovarian cysts with preoperative suspicion of malignancy and huge dermoid cysts were excluded from the study. Surgery performed included cystectomy, salpingo oophorectomy or lap hysterectomy depending on patient's age and desire for future pregnancy

TECHNIQUE:

Informed consent was taken from the patient, risk of conversion to laparotomy if any suspicion of malignancy intraoperatively, was explained. Also explained was the remote chances of frankly malignant lesions and need of revision surgery within 7 days of primary surgery. Patient was given exelyte enema previous night of surgery for bowel preparation. Thromboprophylaxis was given in every case with injection clexane 0.6 ml sc on previous day of surgery and this was also continued for 2 days postoperatively. Verees was put in epigastric region to create pneumoperitoneum. A 5 mm camera port was made and the abdomen including the cyst wall was inspected. In cases, where the cyst was obstructing the view of abdominal inspection, direct trocar puncture, with 5 mm trocar in right hypochondrium , was made in the cyst wall and the cyst was decompressed. In cases where we could place ancillary ports without any difficulty 2 or 3 ancillary ports were placed and myoma needle(with provision for suction) was introduced through one of these ports to decompress the cyst. 10 mm port was then placed according to the planned procedure.However, in 2 cases, the cyst was extending to xiphoid process, and there was no place for verees insertion.(fig.1, table 5). Hence, before proceeding laparoscopically, a 1 cm umbilical incision was made and the huge cyst was decompressed with direct trocar(5 mm) puncture with due care to avoid spillage. Once the cyst size reduced adequately, verees was placed 10 cm above the level of umbilicus and pneumoperitoneum was created with trocar in situ at umbilicus.(fig.2) 10 mm camera port was placed supraumbilically and the whole abdomen including the cyst wall,liver, omentum, undersurface of diaphragm, pelvic and paracolic gutter, pelvic organs was inspected to confirm the benign nature of the cyst. 3 more ancillary ports were placed. Peritoneal wash was taken for cytology. Suture was placed around the puncture site to prevent spillage. Further management of the adnexal mass included cystectomy ,salpingo oophorectomy, TLH with BSO depending on the patient's age, obstetric history, and desire of future fertility. The specimen was retrieved in endobag through the umbilical incision following a small extension or through 10 mm right lateral port or vaginally if hysterectomy was done. Copious lavage was given at the end of the procedure. All patients except for 1 who had conversion to laparotomy(in view of dense sigmoid adhesions) were discharged on the second day after surgery.

RESULTS

20 of our patients presented with vague non specific symptoms like bloating, vague pain in abdomen, abdominal distension. 2 patients presented with menstrual disturbances. 3 patients presented in emergency with severe abdominal pain and torsion of ovarian cyst. (table 3).The mean age was 43.7 years (range 16-80 years). (table 1)Out of all patients, 20 were premenopausal while 5 patients were postmenopausal. 2 patients were 50 year old and had history of previous hysterectomy , these two were grouped in postmenopausal

category.(table 2). None of the patients had any family history of gynecological or breast malignancy. All patients were thoroughly evaluated with preoperative blood investigations, all tumor markers(CA 125, CA 19.9, CEA, beta hCG, AFP). One young patient with endometriotic cyst had CA 125 level 258.6 , hence HE4 was ordered for her which was found to be normal. Ultrasound was done in all cases. CT was done only in 22 cases as remaining 3 patients presented acutely with torsion and were shifted to operation theatre in emergency. Bilaterality was observed in 3 cases. In 2 cases , the size of the cyst was extremely large, more than 25 cm. In 20 of the cases , there was no evidence of any septation or solid areas on either CT or USG.(table 4). 5 patients had evidence of thin/thick septation. During operation, decompression of the cyst was done first to reduce the cyst size and then the definitive surgery was done according to the patient age and parity status. In 6 patients , ovarian cystectomy was done, 5 patients required unilateral salpingo oophorectomy, in 6 patients BSO was done while 6 patients underwent total laparoscopic hysterectomy with bilateral salpingo oophorectomy with omental and peritoneal biopsy .(table6). On an average about 6 to 7 litres of fluid was aspirated to decompress the large ovarian cyst. The maximum fluid volume aspirated was 35 litres. In one case of severe endometriosis with severe sigmoid adhesions, because of operative difficulty, the case was converted to laparotomy. The postoperative recovery was smooth and uneventful for all the cases. Histopathology revealed 13 mucinous cystadenomas, 7 serous cystadenomas, 3 endometriotic cysts, 1 cellular fibroma, 1 benign epithelial lined cyst. None of the cases in our study showed borderline or malignant pathology.(table 7) Postoperative period was uneventful in all cases. Minimum follow up was of 1 year during which no recurrence was observed.

Table 1. PATIENT CHARACTERISTICS: MEAN(RANGE)

AGE	43.7(16-80)YRS.
PARITY	1.5(0-3)

Table 2. MENSTRUAL STATUS

MENSTRUATING	20
POSTMENOPAUSE	03
SURGICAL MENOPAUSE	02

Table 3. PRESENTING SYMPTOMS

NON SPECIFIC SYMPTOMS	20
MENSTRUAL DISTURBANCES	02
ACUTE PAIN	03

Table 4. ULTRASOUND CHARACTERISTICS

UNILOCULAR	20
THIN/THICK SEPTATIONS	05

Table 5. DECOMPRESSION TECHNIQUE

BEFORE PNEUMOPERITONEUM	2
UNDER LAP GUIDANCE	23

Table 6. SURGICAL PROCEDURES.

OVARIAN CYSTECTOMY	07
UNILATERAL SO	05
BILATERAL SO	06
TLH WITH BSO	06
LAPAROTOMY	01

SO: salpingo oophorectomy)

Table 7. HISTOPATHOLOGY

MUCINOUS CYSTADENOMAS	13
SEROUS CYSTADENOMAS	07
ENDOMETRIOMAS	03
BENIGN EPITHELIAL CYST	01
CELLULAR FIBROMA	01

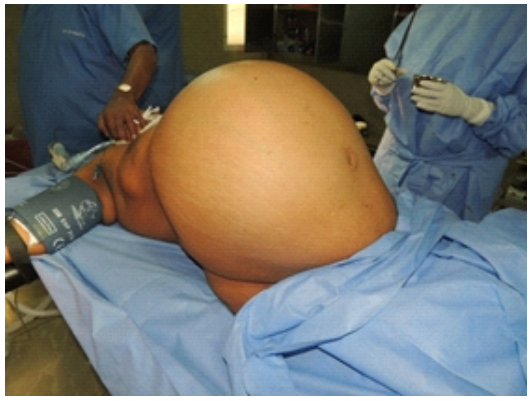

Fig.1. Preoperative appearance of an extremely large ovarian cyst extending to subxiphoid

Fig.2. Decompression of the same cyst followed by verees and scope insertion

DISCUSSION

For the management of small to moderate sized benign adnexal masses, laparoscopic approach is the gold standard.[3,4] In the setting of large ovarian cysts exceeding 10 cm, still controversy exists and and many resort to laparotomy owing to the fear of rupture of the cyst and risk of dissemination of malignant cell. Only few studies have been published so far which advocate laparoscopic approach for large ovarian cysts.[5,6,7] Large benign ovarian cysts are usually of serous or mucinous variety and almost always require resection due to their big size and associated symptoms.[8] In our study, out of 25 cases, 13 were of mucinous variety and 7 were of serous variety. The incidence of unsuspected ovarian cancer at laparoscopy has been shown to be only 0.04%.[9] Hence, if preoperative workup and intraoperative inspection suggest benign pathology, laparoscopy should be the preferred mode of management.[10] There are many technical challenges involved in dealing with very large ovarian cysts. Working space is restricted, placement of trocar without cyst spillage requires expertise, specimen retrieval without dissemination needs due care . According to Valhos et al Direct trocar insertion within the ovarian cyst followed by aspiration of the fluid contents is a safe and feasible method for the laparoscopic management of large ovarian cysts.[11] In our study , cyst decompression was done either with direct trocar puncture or with myoma needle. The trocar snugly fitted the puncture site and there was no spillage. After decompression we sutured the puncture site. The decision for further procedure was based primarily on the patient's age and fertility desire. In postmenopusal women an adnexectomy with or without hysterectomy is the procedure of choice for the prevention of rupture in those with an ovarian tumor. In young patients with incomplete family, cystectomy was done to preserve the ovaries. Salem reported laparoscopic management of 15 cases of large ovarian cysts reaching above the level of the umbilicus. All cysts were benign, and aspiration of the cyst fluid was done after puncture of its wall, then the cyst was removed as usual. No conversions and no other complications were recorded.[1] Gamal H Eltabbakh et al reported 33 cases of large ovarian

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cysts managed laparoscopically using drainage with bonnano suprapubic catheter. [12]Specimen retrieval without spill also is challenging. Extraction of specimen in endobag is widely advocated.[13,14]In our study, all specimen were removed in endobag. Out of 24 laparoscopic cases, in 17 patients, specimen was retrieved through extension of umbilical incision, in 1 case it was retrieved through right lateral port, in 6 cases it was removed with uterus through vagina. There was no spillage in all the cases. However, studies show that even with utmost care some spillage of cystic content can occur.[15,16] Quinlan reported 132 cases of large ovarian cysts managed laparoscopically. There were 5 borderline tumors, no frank malignancy. Specimen was retrieved either by direct extraction or after cutting in strips or using electric morcellator or through posterior fornix.[17] In his study, endobag was not used. Nevertheless, the importance of removing the cyst without spillage can not be undermined and the use of endobag ensures the same. There were no postoperative complication in our study and follow up period was uneventful.

CONCLUSION:

With appropriate selection of cases and adequate surgical expertise, laparoscopy can be safely performed in huge benign ovarian cysts with reduced morbidity and patient disability and hence, should replace laparotomy in such cases.

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