LAPAROSCOPIC MANAGEMENT OF OVARIAN DERMOID CYSTS
MUHAMMAD FAISAL MURAD, Saira Khalid, Qasim Ali, Zubair Aziz, Rizwana Chaudhary, Idrees Anwar, Asif Zafar

ABSTRACT

OBJECTIVE: To evaluate the efficacy of laparoscopy management of ovarian dermoid cysts.

STUDY DESIGN: A retrospective interventional study.

PLACE AND DURATION: From 1st March 2012 to 30th May 2014. At Surgical Unit-II Holy Family Hospital, Rawalpindi.

METHODOLOGY: Review of proformas of cases who underwent laparoscopic surgery for dermoid cysts in our department between March 2012 and May 2014 was done.

RESULTS: Total number of cysts handled laparoscopically were thirty one in twenty six patients. The mean age of patients was 35.4 years (range 16-60). 23 patients had unilateral cysts, two patients had bilateral cysts, and one patient had 2 cysts in the right and 2 in the left ovary. Clinical presentations were lower abdominal pain in 21 patients, abnormal vaginal bleeding and pain in 3 patients, acute lower abdominal pain in 1 patient and peritonitis caused by rupture in one patient. Operative techniques used were cystectomy for 29 cysts and salpingo-oophorectomy for 2. The spillage rate was 15.3%. Mean hospital stay was 2 days.

CONCLUSION: Laparoscopy should be considered as the procedure of choice for handling dermoid cysts of the ovary as it is a safe procedure. Controlled spillage of cyst contents by employing the use of endobag for retrieval of cysts is not associated with postoperative morbidity.

KEY WORDS: Laparoscopy, Dermoid Cyst, Teratoma, Germ Cell Tumor

INTRODUCTION
Laparoscopic surgery is considered the gold standard for management of ovarian cysts owing to the advantages of adequate exposure of abdominal and pelvic contents to the surgeon and faster recovery of patients. The emphasis in ovarian surgery is on conserving the healthy ovarian tissue and to reduce postoperative adhesions in women of child bearing age. Almost all of the germ cell tumors of the ovary are dermoid cysts. Most of them develop during the reproductive age group and they constitute 5% to 25% of neoplasms of the ovary. The management of ovarian dermoid cysts has evolved greatly because of the advent of Transvaginal ultrasonography for the diagnosis and laparoscopic approach for operating upon them. Dermoid cysts, also called ovarian Teratomas are mostly asymptomatic and are found incidentally on pelvic examination. Their management is determined by the patients' symptoms, clinical presentation and ultrasound features as opposed to the diminutive hazard of malignancy. Some findings on ultrasonography like the presence of sebum, hair and fluid filled cysts having irregular solid constituents help in distinguishing malignant cysts from teratomas. Septated cysts, or cysts having irregular solid constituents need further evaluation with Transvaginal ultrasonography and tumour markers before the decision for laparoscopic approach is made. The possible complications of ovarian dermoid cysts include torsion, infection, rupture with chemical peritonitis and the small risk of malignancy. Dermoid cysts evolve from all the three germinal layers, but are mostly frequently from ectoderm in origin. Previously oophorectomy or cystectomy of ovarian dermoid cysts was done by laparotomy. Nezhat et al first delineated the laparoscopic management of ovarian dermoid cysts in 1989. Minimally invasive approach for their management has become popular since 1989 because of the better exposure of the viscera, preservation of normal ovarian architecture, better postoperative outcomes like less postoperative pain, earlier recovery and decrease in duration of hospital stay and less postop adhesions. All these advantages offered by minimally invasive approach are ideal for dermoid cysts because most of the patients are of reproductive age and thus by laparoscopic management there is decreased chance of infertility.

The safety of handling ovarian dermoid cysts laparoscopically has been debated but many studies have favoured their laparoscopic treatment as opposed to open approach. Huss, Coccia and Langebrekke et al explained dermoid cyst contents spillage while approaching them laparoscopically. After dissection, dermoid cysts can be removed within an impermeable bag to reduce spillage of cyst contents into the abdominal cavity. This method decreases the hazard of chemical peritonitis and adhesion formation. If spillage does occur while dissection or the cyst had already been infected and ruptured a thorough lavage with normal saline is ideal.

This study represents our experience of management of dermoid cysts laparoscopically.
METHODOLOGY

This is a prospective study conducted at Minimal Invasive Surgery Department, Surgical Unit II, Holy Family Hospital, Rawalpindi in collaboration with Gynae Department. Proformas of all patients who underwent laparoscopic removal of dermoid cysts from March 2012 till May 2014 were reviewed for demographic data, chief complaint, preoperative investigation, operative methods, spillage, operative time, duration of hospital stay, and postoperative follow-up. Operative time was calculated from the start of procedure till closing of port sites. Spillage was defined as any breach in the cyst wall. Data was analysed using Statistical Packages for Social Science (SPSS 20).

All patients had preoperative pelvic examination, CA-125 levels, ultrasound abdomen and pelvis. The obtained values of Tumor marker CA 125 were within the normal range in all patients. All operations were performed under general anaesthesia. Once the pneumoperitoneum was achieved, two operating ports were inserted in lumbar region and iliac fossa on contralateral side to ovarian dermoid cyst. First of all diagnostic laparoscopy was conducted. For cystectomy gentle cautery and incision with scissors was made to create a cleavage plane. After creating a plane between the cyst and normal ovarian tissue traction and counter traction was applied with grasper [Figure 1, 2], and the cyst was enucleated. The cyst was placed in a handmade impermeable bag devised from 7 size glove [Figure 3] and removed through a 10 mm trocar in the iliac fossa [Figure 4, 5]. In cases where big cysts were encountered, the incision was slightly extended at the time of retrieval. After retrieval the specimen was cut and examined [Figure 6]. Operative techniques used were cystectomy and salpingo oophorectomy. In cases where spillage occurred during dissection or the cyst was infected and ruptured, thorough lavage of the abdominal cavity with normal saline was done.
TABLE - I: DIFFERENT OPERATIVE PARAMETERS OF SURGERY. (n=31)

<table>
<thead>
<tr>
<th>Parameters</th>
<th>Values</th>
</tr>
</thead>
<tbody>
<tr>
<td>Spillage Rate</td>
<td>15.3 %</td>
</tr>
<tr>
<td>Cyst Diameter</td>
<td>6.5 (range 3-22) cm</td>
</tr>
<tr>
<td>Operative Time</td>
<td>90 ± 24 minutes</td>
</tr>
<tr>
<td>Hospital Stay</td>
<td>2 (range 1-5) days</td>
</tr>
</tbody>
</table>

RESULTS

Thirty one cysts were removed in twenty six patients. The mean patient age was 35.4 years (range 16-60). 23 patients had unilateral cysts (88.4%), and 2 patients had bilateral cysts (7.6%), and 1 patient had 2 cysts in the right and 2 in the left ovary (3.8%).

Clinical presentations was chronic lower abdominal pain in 21 patients, abnormal vaginal bleeding and pain in 3 patients, acute lower abdominal pain in 1 patient and peritonitis caused by rupture in one patient.

All but two patients were preoperatively diagnosed by pelvic exam and ultrasound. Out of these two patients, one was a 45 years old female who presented in ER with peritonitis, and the other was a 35 years old patient explored for pain in right inguinal region and right iliac fossa with previous history of abnormal vaginal bleeding.

Operative techniques used were cystectomy for 29 cysts (93.5%) and salpingo-ophorectomy for 2 (6.4%). The indication for unilateral salpingo-ophorectomy were torsion in both cases. Cysts treated via either cystectomy or salpingo-ophorectomy, were removed through thetrocar sleeve within an impermeable endobag. Operative parameters are discussed in Table - I:

The spillage rate per patient was 15.3% (4/26 spillages), but the total spillage rate was 12.9% (4/31 spillages) for the cysts removed. Spillage was not correlated with cyst size: mean ± SD cyst diameter was 6.4 ± 2.1 cm and 6.1 ± 2.3 cm for spilled and unspilled cysts, respectively (p > .05).

The patient who had prolonged stay was one who had presented with peritonitis. In none of the cases conversion to laparotomy was required.

DISCUSSION

Ovarian dermoid cysts are also known as Mature Cystic Teratomas of the ovary. They most commonly occur in reproductive age grouping women and constitute 5% to 25% of all ovarian neoplasms. Dermoid cysts originate from all three germinative layers.

The use of Transvaginal ultrasound scan for the diagnosis and minimal invasive approach for treatment of ovarian dermoid cysts has tremendously improved the outcome. The main concern in laparoscopic management of ovarian dermoid cysts is spillage occurring during dissection. Spontaneous rupture and infection may occur in some patients but in most cases rupture and spillage occur during dissection of the cyst from ovarian stroma. Rupture and resultant spillage of cyst contents into the abdominal cavity is injurious as it can cause chemical peritonitis and granuloma formation with intestinal obstruction. Spillage of cyst contents remains the most important point in laparoscopically managing ovarian dermoid cysts. In laparoscopy the spillage rate is about 15 to 100% whereas in laparotomy the spillage rate is 4 to 13%.

After reviewing the literature for laparoscopically managed ovarian dermoid cysts it was deduced that the incidence of
spillage causing chemical peritonitis was 0.2%. Only one case of major postoperative complication has been reported so far. There has been one reported case of chronic granulomatous peritonitis occurring after nine months of the laparoscopic procedure. There are no reported cases of chemical peritonitis occurring after laparotomy. In our study the spillage rate is 13.4% which is acceptable as compared to laparotomy. Spillage can be avoided by careful dissection of the cyst by first creating a plane between the cyst wall and ovarian tissue, and then by peeling the cyst wall by gentle traction and counter traction applied with graspers. After cystectomy for specimen retrieval a handmade endobag devised from 7 size glove can be efficiently used. This method of retrieval inside an endobag reduces the potential implantation of cyst contents in the abdominal wall. So far there has been only one reported case of implantation of cyst constituents into the abdominal wall causing fistulisation of rectum and bladder. We followed our patients in the outpatient department and did not find any case of malignancy upon receiving the histopathology reports of the cysts. Spillage of the cyst components of malignant ovarian cysts poses a possible problem with laparoscopic management. Spillage should be avoided and cysts removed intact by employing the technique described above.

In our study, mean operative time was 90 minutes, which is acceptable as compared to laparotomy times which have been described by Christoforonas 92 ± 11 minutes.

CONCLUSION

Laparoscopic management of ovarian dermoid cysts is safe and advantageous.

REFERENCES