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Laparoscopic management of ovarian dermoid cysts

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Abstract
Introduction: During the last twenty years, remarkable evolution has been witnessed in laparoscopic surgery. The reported advantages of this less invasive surgery over conventional laparotomy are minimal scars, decreased postoperative pain and need for analgesia, shorter hospitalization and recovery time.
Aims and Objectives: To evaluate the role of laparoscopy in management of ovarian dermoid cysts.
Material and Methods: A total of 90 consecutive women with unilateral or bilateral dermoid cysts ovary of 7cm or more in size during one year were included.
Results: Ninety women with benign adnexal masses who underwent laparoscopic management, of these dermoid cysts were present in 18 women. Mean age of the patient with dermoids was 26.33 years (range 18-32) and mean parity was 1.05 (range 0-3). Sixteen women had unilateral dermoids (88.88%), and 2 had bilateral cysts (11.12%).
Conclusion: Dermoid cysts can be efficiently treated via laparoscopic surgery. Laparoscopy should be the primary management route for surgical management of these cases. Laparoscopy offers advantages of reduced pain, less blood loss, shorter hospital stay and better cosmetic results.

Keywords: Laparoscopy, ovarian, dermoid cysts

Introduction

Benign ovarian pathology remains a significant disorder in women who are in reproductive age [1]. An adnexal mass is an enlarged structure in the uterine adnexa that is ovaries, fallopian tubes, or any of the surrounding connective tissue which can either be palpated on a bimanual pelvic examination or visualized using radiographic imaging.

Dermoid cysts are most common germ cell tumor. Benign cystic teratoma, addressed commonly as dermoid cyst accounts for 20-25% of all ovarian neoplasm and occur bilaterally in 10-15%, majority of them are asymptomatic but have potential for complications like torsion, spontaneous rupture and malignancy that makes surgical treatment necessary upon diagnosis [2].

Ultrasound has remained the mainstay of diagnosis and usually serves as the initial radiological investigation of choice, often allowing detailed characterization. When more information is required, magnetic resonance imaging (MRI) is preferred modality. The ultimate diagnostic tool is of course histological examination [3].

The American College of Obstetrics and Gynecology (ACOG) states that simple cysts upto 10 cm in diameter are almost universally benign and can be safely followed without intervention, even in postmenopausal women [4].

Laparoscopy improves the life quality after surgery with smaller incision, less blood loss, lower analgesic need, early ambulation, better cosmetic results and short hospital stay.

Use of laparoscopy in management of dermoid cysts has many advantages over conventional laparotomy like small incision site, less analgesia, less blood loss, shorter hospital stay. Given the wide variation in the reported results of laparoscopy, the present study was planned to evaluate the role of laparoscopy in management of ovarian dermoid cysts in North Indian population.

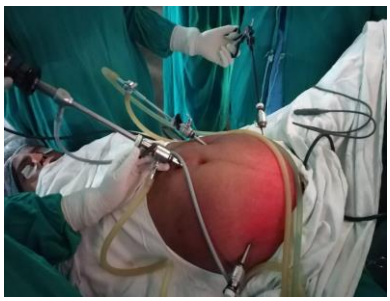
Material and methods

This prospective study was conducted in the Department of Obstetrics and Gynaecology at Pt. B.D. Sharma PGIMS Rohtak on women presented with ovarian dermoid cysts over a period of one year from May 2016 to May 2017. Consecutive women with unilateral or bilateral adnexal masses of 7cm or more in size during one year were included in the study. Morbidly obese women, those with family history of carcinoma of ovaries or breast,

past/present history of cardiovascular disease and those with two or more previous major abdominal surgeries were excluded from the study. An informed consent was taken from all the participants. A detailed history was taken regarding age, parity, presenting symptoms, treatment taken and previous surgery if any. A general physical, abdominal and gynaecological examination was carried out for any pelvic or abdomino-pelvic mass with special reference to its site, size, number, external surface, consistency and mobility. A digital rectal examination was substituted for the speculum and vaginal examination in unmarried girls.

Investigations like hemoglobin, urine complete examination, blood grouping, estimation of blood urea and sugar, ECG, X ray chest and serum Ca-125 estimation was carried out in all participants. Serum β-hcg and Thyroid profile was done if indicated. Ultrasonography of abdomen and pelvis was done to note the size, side, contents and surface projections of the mass. Color Doppler of the feeding vessels was carried out to evaluate the vascular pattern of the mass, if indicated. All participants were taken up for laparoscopy after ensuring anaesthetic fitness. Conventional closed laparoscopy was performed using Veress needle insufflation. An 11-mm bladed trocar was inserted at the base of umbilicus and supraumbilically or at Palmer's point in cases of previous surgical scarring at umbilical site, through which a 10-mm scope was inserted. Three 5-mm ports were placed under direct visualization in left and right lower quadrants and in left paraumbilical area. Inspection of pelvis and peritoneal surfaces was conducted and adnexal pathology was managed laparoscopically. Electrocoagulation was used as the energy source for the procedure. Biological tissue was retrieved using an indigenous endobag through one of the abdominal ports or posterior colpotomy. The colpotomy site, when used was repaired in single layer. The abdominal port sites was closed by single absorbable suture (Chromic Catgut 2-0). All retrieved specimens were sent for histopathological examination. The time from skin incision to the placement of last suture was considered as operative time. The estimated blood loss was calculated by substracting the amount of fluid used for irrigation from the total fluid output in the suction jar. The operative time, estimated blood loss and the need for conversion to laparotomy were the primary outcome measures. Intraoperative or postoperative complication(s), need for blood transfusion during/after surgery and length of hospital stay were the secondary outcome measures.

Palmer's point primary post usage at suctioning of a huge parovarian cyst prior to cystectomy



Pneumoperitoneum followed by insertion of primary and accessory ports.

Statistical analysis

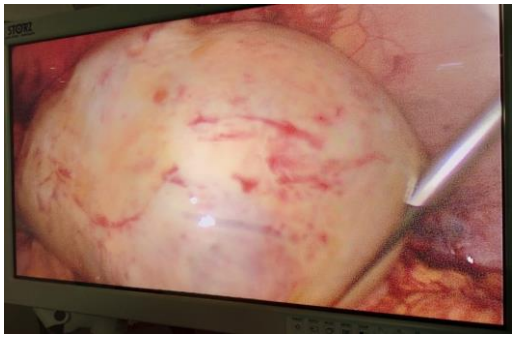
The data was compiled and statistically analyzed by using Student t-test using SPSS version 20.

Observations

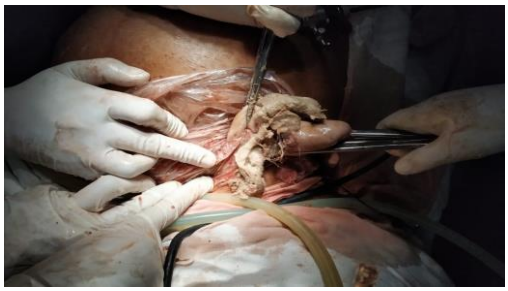
A total of 90 women with benign adnexal masses who underwent laparoscopic management, of these dermoid cysts were present in 18 women. Mean age of the patient with dermoids was 26.33 years (range 18-32) and mean parity was 1.05 (range 0-3). Sixteen women had unilateral dermoids (88.88%), and 2 had bilateral cysts (11.12%).

Laparoscopic cystectomy was done in 16(88.88%) cases and in 2(11.12%) women laparoscopic procedure was converted to laparotomy. The reason for conversion to laparotomy dense adhesions in one case huge bilateral masses with high chances of spillage. Of the 16 cysts treated via laparoscopic cystectomy:- 13(81.25%) were retrieved through abdominal port using endobag 3 (18.75%) were removed via posterior colpotomy as the specimens were big with a solid component.

Mean cyst diameter, blood loss and operative time were 8.6cm (range 7-15cm), 24.72±17.36 ml and 119.72±46.35 minutes respectively. Sufficient time during surgery was dedicated for irrigation step to ensure complete pelvic clean out. There were no intraoperative complications. Overall mean hospital stay was 3.55±1.85 (range 2-9) days. Excluding the 2 patient in whom laparoscopy was converted to laparotomy, who stayed for 6 and 9 days, mean stay was 3.23±1.30 (range 2-6) days. There was no postoperative complication.



Laparoscopic View of Large Dermoid



Retrieval of Dermoid Cyst from Abdominal Port Via Endobag

Discussion

Dermoid cysts are more prevalent in reproductive years, in our study too the women who presented with dermoid cyst belonged to reproductive age group. Laparoscopy is method of choice due to its advantages i.e. minimizing postoperative adhesion formation, shorter analagesia requirement and shorter hospital stay.

Overall incidence of dermoid cyst is 20-25%. in our study dermoid cysts were reported in 18 cases (20.00%) which is comparable.

In our study most of the women with dermoid cyst were multiparous and this data is comparable with the studies done by Nehzat *et al.* [2] and Shawki *et al.* [5] in which they reported dermoid cyst were more prevalent in multiparous women.

Women with dermoid cyst most often present with chief complaint of pain lower abdomen, and the incidence in our study

is comparable with the studies done by Shawki *et al.* [5] and Nezhat *et al*[2] in which pain lower abdomen was chief complain in 62%, 46.40% and 50% women respectively.

The pain may be caused by the mass by exerting pressure on the bladder or rectum or by causing abdominal distention. Acute pain may be a result of torsion, hemorrhage into the mass, or rupture of the mass into peritoneal cavity.

In studies done by Sendag *et al*. [6] Koçak *et al.* [7] and Shawki *et al*. [5], 97.87 %, 94% and 85.20% women were found to have unilateral dermoid cyst and same is concluded from our study.

Mean duration of surgery in our study is 119 minutes which is comparable to operative time reported by Nezhat *et al.* [2] Koçak *et al.* [7] and Sendag *et al*. [6] which are 103.0, 80.0 and 64.60 minutes respectively.

Operative time is more in women in whom the procedure was converted to laparotomy. One of the main advantages of minimal access surgery is less operative blood loss. This was corroborated by our study which has 24.72ml as the mean blood loss for laparoscopic procedures and this result is comparable to studies done by Koçak *et al*. [7] and Nezhat *et al*. [2] which reported blood loss of 50 ml and 84 ml respectively.

The mean hospital stay in present study was 3.5 days which is comparable to studies by Koçak *et al*. [7] Sendag *et al*. [6] and Shawki *et al*. [5] where mean hospital stay was 2,1.6 and 0.9 days respectively.

In our study, the institutional protocol that is followed involves one day indoor stay for preoperative stabilization and one day for surgery and one postoperative day before discharge from hospital. In other studies done in literature and in the present study too, the reason for longer hospital stay was conversion to laparotomy.

Conclusion

It is evident from the present study that dermoid cysts can be efficiently treated via laparoscopic surgery. Laparoscopy should be the primary management route for surgical management of these cases. Spillage should be avoided. Laparoscopy offers advantages of reduced pain, less blood loss, shorter hospital stay and better cosmetic results.

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