



Ovarian Cysts Management Following Laparoscopic Surgery

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Authors' contributions

This work was carried out in collaboration among all authors. All authors read and approved the final manuscript.

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ABSTRACT

Objective: To analyze diagnostic and surgical outcomes in patients with extremely large ovarian cysts treated by laparoscopic surgery.

Methods: A total of 120 cases of large adnexal masses and suspected for malignancy were treated laparoscopically at the at general surgery department of Liaquat University of Medical & Health Sciences. Under endotracheal anesthesia, all surgeries were performed using nasogastric tubes in the stomach. An incision of approximately 1.5 centimeter was made at the supraumbilical or umbilical region and peritoneal cavity was approached. The intra-abdominal approach in all cases was cautiously standardized. The resection of the adnexal mass was performed as per routine method.

Results: 12 females were premenopausal and 8 were postmenopausal. 12 women presented with the signs of urinary retention, urinary urgency and abdominal pain. Incidental sonography detected cysts in 8 patients which were asymptomatic. The average volume of the resected cystic fluid was 3000ml (range 900 to 9000 ml). The specimens of frozen section were obtained within the surgical

procedure in all patients except 2 patients having para-ovarian cysts. The histopathology presented mucinous benign cystadenoma. There was no blood loss and related other complications reported in all operations.

Conclusion: Laparoscopic management of large ovarian cyst observed to a effective, feasible and less complicated surgical option. However accurate selection and diagnosis of the patients, the any ovarian cyst size can be treated easily via laparoscopic surgery.

Keywords: Ovarian cyst; laparoscopy; outcome.

1. INTRODUCTION

Ovarian cysts are fluid-filled sacs which develop in the intracellular tissue of ovaries. The cysts are generally around the size of a cherry and are bounded by a capsule. Majority of the ovarian cysts can spread throughout the body and often develop because of normal changes of hormones during puberty or menopause [1]. It is assessed that approximately 10 out of 100 females are infected with ovarian cysts. They are typically non-cancerous also called benign and infrequently cause issues, therefore they usually do not require treatment or surgery [2]. Most females with ovarian cysts even are unaware about their existence. Few cysts cause gloomy pain in the pelvic or lower abdominal region. Ovarian cysts often cause complications with the menstrual cycles, abnormal bleeding from vagina during menstruation, irregular or heavy menstruation and spotting [3]. The problems in menstrual cycles appear if the cyst yields sexual hormones which cause the uterine lining to lead to further growth. The cysts of big sizes might press on the opposite side to the bladder or bowel. It can cause vomiting, swelling in abdomen, high pulse rate, a sensation of pressure and fullness and pains during constipation or urinating and nausea [4]. On rupturing the cysts, can cause an unexpected pain as sometimes the weight of the cyst might pull on the ovary and cause torsion. Most ovarian cysts are range merely from 1 to 3 centimeters and can grow independently during a few months and reach huge enough to initiate critical symptoms. In very occasional cases, ovarian cysts grow as much as about 15-30 centimeters with rare complications. Sometimes, upon rupturing the cysts leak out into the spaces around them. Although rupturing can produce a throbbing sensation, they are typically harmless and rarely cause bleeding which is obligatory to be controlled with the help of surgical procedure [5]. The enormously bulky ovarian cysts can cause foremost challenges for the gynecological specialists of endoscopic surgery. The escalated probabilities of malignancies, technical issues

regarding to the elimination of these cysts, and perioperative difficulties related to functionality of cardiorespiratory systems possibly complicate the surgical treatment for these cysts. Conventionally the large sized ovarian cysts are managed by laparotomy. The latest advancements in endoscopic invasive techniques have presented new potentials for laparoscopic management of such very huge sized ovarian cysts [6]. This study has been conducted to assess the unanimously diagnosis and the surgical outcomes among cases having extremely large ovarian cysts have been reported which were accomplished laparoscopically.

2. MATERIALS AND METHODS

A total of 120 cases of large adnexal masses and suspected for malignancy were treated laparoscopically at the at general surgery department of Liaquat University of Medical & Health Sciences. The criteria to include the patients in current study were absence of suspect sonographic and ascites [7]. Meanwhile, the adnexal mass features obtained by computed tomography (CT) were absence of papillations, no enlarged pelvic lymph nodes, enlarged resistance index, zero suspected areas and evidences of intraperitoneal spread, and merely higher levels of serum tumor markers especially less than 130 mIU/ml serum CA 125.

Every patient had reported an umbilical or higher adnexal mass. The informed consent was taken from each case including a declaration that laparotomy maybe required if the mass could not be accomplished appropriately using only laparoscopy or if cancer is spotted by frozen section. Under the universal endotracheal anesthesia, all surgeries were performed using nasogastric tubes in the stomach. In all of the patients, the open laparoscopy was preferred for treatment. An incision of approximately 1.5 centimeter was made at the supraumbilical or umbilical region and approached the peritoneal cavity under direct vision [8]. The intra-abdominal

approach of all cases was cautiously standardized such as inspection of the ovaries, pelvis, omentum, upper abdomen, liver, and surfaces of diaphragm for any progressions or other symptoms of tumor.

In order to complete cytology, the peritoneal washing was attained [9]. The eliminated specimen was directed for frozen section as well as the biopsy specimens were obtained for the frozen section. On the proposed tumor via frozen section, the laparoscopies were transformed to the laparotomy achieved via onco-gynecologic specialists. Adnexal mass administration such as cystectomy, aspiration of the fluid content and oophorectomy dependent upon age, history of the obstetrics and the fertility desire in future by study participants. The specimens were eliminated via distinct exclusion bag via the incision by suprapubic trocar of 10mm size following little extensions or with the help of posterior colpotomy. After removing the tissues, the pelvic and the cavities of the abdomen were systematically irrigated with the normal saline [10]. Before the procedure of the termination, any further abnormality in pelvic cavity including adhesions was managed and homeostasis was sustained. All the patients were discharged on the first day after surgery except for 3 who reported adaptation to laparotomy.

3. RESULTS

The average ages of the patients were 45 years within the ranges of 18 to 90 years. 12 females were premenopausal and 8 were postmenopausal. 12 women presented with the signs of urinary retention, urinary urgency and abdominal pains. The cysts were diagnosed in 8 patients were asymptomatic with the help of an incidental sonography. 13 patients had normal levels of serum CA125 within the ranges of 6.4 to 22 mIU per mL and 7 had slightly higher levels of CA125 within the ranges of 35–130 mIU per mL. The average volume of the removed cystic fluid was 3000ml within the ranges of 900 ml to 9000 ml. The patients underwent adnexectomy or cystectomy performed on the basis of obstetric history and age of the patients. The average time of each operation was approximately 85 minutes.

The specimens of frozen section were gotten within the surgical procedure in all patients except 2 patients having para-ovarian cysts. In 3 patients, the laparoscopies were transformed into laparotomy, 2 cases due to technical

complications regarding the severe adhesions in the abdominal cavities and ominous obesity and 1 case due to ovarian cancer. The diagnostics of ovarian tumor was recognized through frozen section in the surgical period in the 80 years aged patient who was primarily suspected with abdominal pains. The diagnostics of the large left ovarian cyst was verified by a CT scan, pelvic and physical bimanual examinations as well as transvaginal ultrasound tests.

The adnexal mass was showed on the CT scan as a big semisolid ovarian mass in the left side extended outside the umbilicus part nevertheless was not linked with any enlarged or ascites para-aortic or pelvic lymph nodes. The level of serum CA 125 was 12 mIU/mL. in laparoscopy, the examination of the pelvic and abdominal cavities exposed zero evidences of any spreading of metastasis. The washing of peritoneal cavity was performed for cytology and 4 litter fluid was articulated from the cystic masses. The extraordinary care was reserved to minimize the spillage. The left adnexa were entirely removed and excised via a posterior colpotomy. The specimen related frozen section uncovered the ovarian cancer. The laparoscopic operation was transformed into laparotomy.

The intracolic omentectomy, along with hysterectomy, contralateral adnexectomy and sampling of lymph nodes were performed for staging purposes. The postoperative duration was ordinary. All of the other patients reported benign cancer and the most usual histopathologic patterns as expected were that of mucinous cystadenoma. Though, all the cases were electively surgically operated and 5 of those were unpredicted adnexal torsions. The 4 of them had several abdominal pain complaints. The 2 females were asymptomatic as 1 was offered with recurrent large ovarian cysts on the similar side and the other laparoscopic cystectomies were made approximately 5 months after the initial twice. In both operations, the histopathology presented mucinous benign cystadenoma. There was no blood loss related other complications reported in all minimal operations.

4. DISCUSSION

In the United States, the 4th most common basis of gynecologic admission is the ovarian cysts [11]. The safety of laparoscopy has been sufficiently demonstrated for the administration of benign adnexal tumors. The operation is linked

with less operational blood loss, reduced complications postoperatively, short stayed hospitalization, and earlier recovery than that of laparotomy. Laparoscopic operation is considered nowadays as the gold standardized way to treat the patients with ovarian cysts surgically [12]. But the major limiting factor for extensive applications of laparoscopic administration is still considered the size of ovarian cysts. In few previous studies, few researchers restricted the laparoscopic surgery to females with an adnexal tumor of less than 10 cm sizes. On provoked with tremendously large, deceptively benign ovarian cysts, only a few surgical experts support the laparoscopic administration.

The ultrasound guided aspiration of the cyst has been recommended in some researches before operation following the eliminating via an incision laparoscopically. It has also reported that the patients with large sized ovarian benign cysts reaching the umbilicus level can also be administrated using laparoscopic surgery [13]. In current study, the use of open laparoscopy preferred as during its entry into the abdomen, it seemed to be harmless and would avoid inadvertent punctures of such big sized ovarian cysts. The current practice establishes that, using proper selection of patients, the laparoscopy can be implemented in the administration of particular patients with enormously larger ovarian cysts. The major apprehension with laparoscopic administration of larger adnexal cancer is the prospects of encounter and cuttings within the malignant neoplasms.

It might cause trocar site implantation and intraperitoneal spillages of malignant cells. The probable adversative effects of operative spillage are yet debatable. It has been reported that invasive rupture might hostilely effect prognosis [14]. But it has not been verified that by means of multivariate analysis. However, a critical effort should be performed to evade the spillage as much as probable. After laparoscopic exclusion of cancerous adnexal tissues, the port-site metastasis being reported as extra reported complications with incidences of 1 to16 %. In our patients, there were not occurred any port-site metastasis with malignancies [15]. The contrary influences of late decisive surgery on the disease stage has been demonstrated clearly in various studies [16]. The practical development from deceptively primary to advanced levels of malignant

tumor was presumed to be directly associated with the period of the delayed absolute surgery.

5. CONCLUSION

Laparoscopic management of large ovarian cyst observed to an effective, feasible and less complicated surgical option. It is now believed that when malignancy is diagnosed using frozen section inspection during laparoscopy, an instant conclusive surgical management is specified either by conversion to laparotomy or by laparoscopy. With appropriate patient selections, the sizes of ovarian cysts do not essentially establish a contraindication for surgical management laparoscopically. The occurrence of both a gynecologic oncologist and a proficient laparoscopist on call is obligatory. To make final conclusion, further data are needed and a multicenter investigation should be performed for comparing laparotomy and laparoscopic methods.

CONSENT

As per international standard or university standard, patient's written consent has been collected and preserved by the author(s).

ETHICAL APPROVAL

Study was conducted after taking permission of the institution.

COMPETING INTERESTS

Authors have declared that no competing interests exist.

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