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A peculiar case of complex ovarian cyst with multiple previous surgeries managed by laparoscopy

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Abstract

Most functional and benign cysts maintain a silent existence. Few can manifest a myriad of clinical symptoms ranging from pain to syncope. In cases presenting with ambiguity, surgical intervention should not be delayed. The present case was managed successfully employing minimally invasive laparoscopic surgery. Regardless of the absence of a uterus, the patient experienced complications due to a complex hemorrhagic cyst. Despite the various challenges involved in laparoscopic surgeries; it can be safely deployed to mitigate diseases with a superior advantage.

Keywords: Functional ovarian cyst, haemorrhagic ovarian cyst, laparoscopic cystectomy, abdominal pain, post-menopausal women

INTRODUCTION –

Ovarian cysts, which are typically fluid-filled entities located on or inside the ovary, are a common occurrence among women, affecting approximately 20% of them during their lifetime.¹ While postmenopausal women have a lower likelihood of developing ovarian cysts, they are more prevalent among premenopausal women. These cysts often remain undiagnosed as they are frequently asymptomatic.

Functional cysts appear to be the most common variety among the various types of cysts known. These cysts are not linked to any disease and typically arise due to the normal ovulation process. They tend to resolve on their own over time without the need for medical intervention. However, in some cases, these can rupture over time without causing noticeable symptoms. While these cysts can dissipate and heal spontaneously, approximately 4% of women over the age of 65 years will require hospitalization for ovarian cyst-related issues.¹

The rupture of an ovarian cyst can be accompanied by sudden and severe abdominal pain, nausea, and vomiting, as well as feelings of light-headedness or weakness. These symptoms can indicate the need for medical evaluation and intervention.²

2D ultrasound remains the mainstay investigation for the assessment of these cysts. However, in cases with clinical uncertainty, 3D ultrasound, MRI or CT scan can be effectively utilized to understand the nature of the lesions.

Hemorrhagic ovarian cysts can indeed lead to serious complications, especially if they rupture. This can result in hemoperitoneum, where blood collects in the abdominal cavity, potentially compromising organ function and leading to sepsis if not promptly addressed. In severe cases, surgical intervention may be necessary to control bleeding or remove the cyst, along with blood transfusions to replenish lost blood volume.²

We present a rare case involving an unruptured hemorrhagic follicular cyst located on the right ovary, leading to pain in the abdomen in a patient who had previously undergone a hysterectomy. To address this, a laparoscopic procedure was performed to remove the cyst which was densely adherent to the adjacent bowel. This minimally invasive approach offers precise surgical intervention while minimizing postoperative recovery time and complications. The study was conducted after obtaining written consent from the patient and Institutional Ethics Committee approval. Privacy and confidentiality of the patient was maintained. The study received no funding.

CASE REPORT-

A 40-year-old female P3L3 with previous three caesareans and a laparotomy for a ruptured uterus presented to the OPD. She complained of on-and-off pain in the

suprapubic region and lower right quadrant of the abdomen along with generalized weakness for three months. A pelvic ultrasound confirmed the presence of a cystic lesion of around 5 cm in the Pouch of Douglas, mostly of ovarian origin. Initially, the patient was offered medical management, however, symptoms were not relieved and a month later another sonography was carried out which concluded a cystic lesion of (5.5x2.3) cm; right side complex ovarian cyst with no evidence of torsion. On examination she had tachycardia, and the abdomen was soft and non-tender; on vaginal examination, fornical tenderness was present. All routine laboratory reports and tumor markers like CA 125 were within normal limits. The International ovarian tumor analysis (IOTA) score was 0.2% and the Risk of malignancy index (RMI) was 10. An elective laparoscopic procedure was arranged after obtaining surgical fitness. The procedure commenced with conventional instruments and one 10 mm and three 5 mm portentries were acquired. Primary trocar entry was taken at Palmer's point in anticipation of dense adhesions. On gaining access into the peritoneal cavity, the bowel and omentum were found to be adherent to the site of the previous surgical scar, and left anterolateral abdominal wall (Fig.1). Ovarian cyst was visualized in the pelvis, surrounded by bowel adhesions, Omental adhesions were released to reach the cyst (Fig 2). The cyst was filled with hemorrhagic material and was inadvertently ruptured during attempts to release it from the surrounding bowel. The fluid was suctioned out and the cyst along with the fallopian tube excised and sent for histopathology. Left Side ovary and tubes were inspected and confirmed to be normal.

Histopathology showed hemorrhagic infarction, follicular cysts, and cystic follicles in the ovary. Post-operative recovery was uneventful.

DISCUSSION –

Functional cysts, one of the frequently encountered benign ovarian cysts, typically arise during the normal ovulation process and resolve on their own within a few menstrual cycles. However, complex cysts can arise from other conditions, including, endometriosis and PID (pelvic inflammatory disease).³

Functional cysts can be categorized into two primary types: follicular cysts and corpus luteum cysts. Follicular cysts develop due to the failure of the follicle to rupture and the inability of the egg to escape during ovulation.⁴ In contrast, corpus luteum cysts form when the empty follicle left behind after the egg is released, becomes blocked, leading to the accumulation of fluid within it.³

Complex cysts contain blood or solid components and are more likely to beckon treatment; dermoid cysts, cystadenomas, and endometriomas are a few to mention. Dermoid cysts originate from germ cells and can contain various types of tissue with negligible malignant potential. Cystadenomas are mostly benign epithelial neoplasms and may contain serous or mucinous material. Endometriomas are chocolate cysts that develop secondary to endometriosis.^{3,5}

Understanding the different types of ovarian cysts and their underlying causes is important for accurate diagnosis and appropriate management. While functional cysts often resolve spontaneously, complex cysts may require closer monitoring or intervention depending on their size, symptoms, and risk of complications.

According to ACOG most ovarian cysts are considered benign, tend to resolve on their own, and can be safely monitored through interval pelvic scans and follow-up appointments. However, surgical intervention may be necessary for cysts larger than 5 cm, cause pain, or appear suspicious for malignancy ⁶

A recent study by Casiano et al, found the incidence of oophorectomy following hysterectomy to be 9.2%.⁷ The researchers suggested that disruption of ovarian blood flow after hysterectomy might affect ovarian function, potentially leading to adnexal pathologies.

In the study by Naimisha et al., 82% of the 35 cases requiring re-operation for post-hysterectomy ovarian cysts occurred in patients who had hysterectomy with bilateral ovarian conservation, while 18% involved those with unilateral ovarian retention.⁸

The number of bilateral salpingo-oophorectomies performed alongside hysterectomy has declined over the last decade, especially among women aged under 55. In 2016, the American Congress of Obstetricians and Gynaecologists, in the practice bulletin reaffirmed the recommendation that preserving normal ovaries should be strongly considered.

Recent guidelines advocate the preservation of ovaries till the age of 55-60 years; however, retention of the organs can lead to the future development of benign and malignancy lesions and repeat surgical interventions.⁸

The hormonal management of benign or simple cysts is debatable. Treatment with combined oral contraceptives or progesterone is not scientifically proven. However, high doses of oral contraceptives have been safely used in certain postmenopausal women fulfilling a set criterion by Menon et al.⁹ This includes a thin-walled, unilocular cyst with a diameter of less than 5 cm. There should be no enlargement of the cyst during surveillance, and the serum CA125 levels remain normal. These findings are generally reassuring as they are characteristic of benign ovarian cysts. Regular follow-up and monitoring may be recommended to ensure there are no changes over time.⁹

Many of the cysts eventually require surgical excision for permanent resolution of symptoms. The choice of surgical approach [laparotomy or laparoscopy] depends on the surgeon's propensity and availability of expertise and facilities. Laparoscopy offers a minimally invasive method for the safe removal of simple or benign cysts and lesser morbidity for the patient. Reduced bleeding, shorter hospital stays, and quicker return to routine life are some of the benefits. Consequently, it can be concluded that laparoscopy for adnexal masses is superior to laparotomy, and this approach is recommended when conditions permit.¹⁰

However, laparoscopy involves a longer learning curve and skills which are essential for navigating the intricacies of the procedure and minimizing risks. Fear of intraperitoneal spillage and unsuspecting malignancy is a deterrent for many. Injury to adjacent bowel, bladder, and ureter during excision of the cyst in post-hysterectomised women is a major concern. The present case had 4 laparotomies including 3 caesareans and an obstetric hysterectomy for a ruptured uterus. Dense adhesions were encountered during the procedure which were meticulously dealt with and cyst removal was achieved without any complication (Fig.3).

Olivia et al. have described a similar case of rupture of a hemorrhagic corpus luteal cyst, wherein they performed a laparoscopic procedure for the removal of the cyst and hemoperitoneum.² Naima Shah et al. reported a case study of 700 post-hysterectomised patients and found three cases of adjacent organ injury. In this case series, 72% had undergone laparotomy and 21% had undergone laparoscopy⁸. In another case report, a successful laparoscopic removal of a large ovarian cyst in a morbidly obese lady with multiple co-morbidities has been described by Wei-An Goh et al.¹¹ A recent study from Sri Lanka observed a high prevalence of cysts in women beyond the age of 50 and recommends annual pelvic ultrasound scans as a screening tool for early diagnosis and preventive health care measures.¹²

CLINICAL SIGNIFICANCE: With increasing lifespan in today's era, managing complex cysts in perimenopausal women can often be challenging. Although the open incisional technique provides more oncological safety; minimally invasive surgery has a superior advantage in an otherwise benign lesion. It allows earlier resumption of a regular diet and permits a prompt return to a routine lifestyle.

CONCLUSION:

Laparoscopy offers superior comfort to the patient regarding morbidity and postoperative convalescence. Efforts should be directed towards acquiring the necessary skills to master this art, as it involves a range of complex tasks, including 3D targeting, ambidexterity, and spatial judgment in a two-dimensional environment.

This case underscores the potential risks associated with hemorrhagic ovarian cysts, even in patients who have undergone hysterectomy. Timely diagnosis and appropriate surgical intervention, such as laparoscopic cyst removal, are crucial in managing such cases effectively and preventing further complications.

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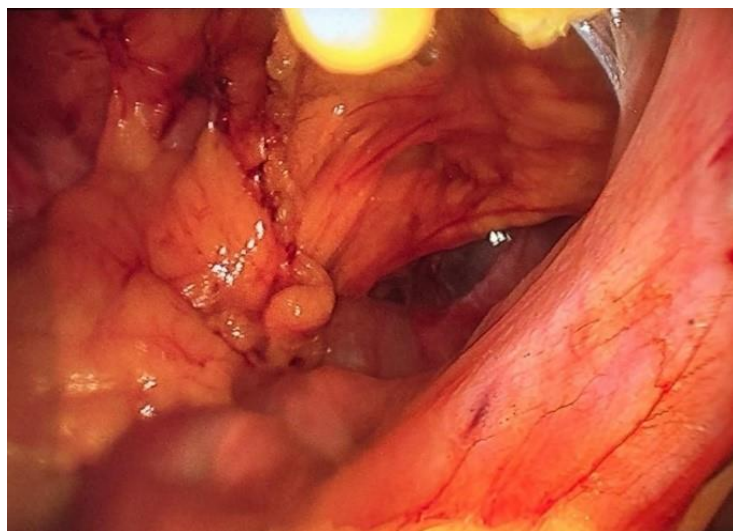


Fig1: Bowel and omental adhesion

Fig 2: Ovarian cyst



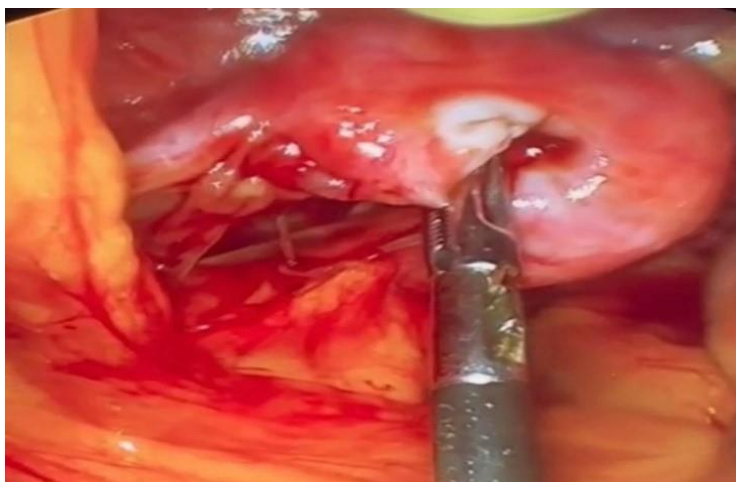


Fig 3: Removal of cyst