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Case Series

Acute Abdomen: Diverse Presentations in Gynaecology – A Case Series

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ABSTRACT

Background: Acute abdomen in females often presents a diagnostic dilemma due to overlapping gastrointestinal, urinary, and gynaecological etiologies. Early recognition of gynaecological causes is critical for timely intervention and fertility preservation.
Methods: We present a case series of six patients with varied gynaecological causes of acute abdomen managed at a tertiary care teaching hospital. Clinical presentation, diagnostic workup, operative findings, and outcomes were analysed.
Results: The etiologies included fimbrial cyst with isolated tubal torsion, ovarian abscess following appendectomy, ruptured corpus luteum cyst, ruptured ectopic pregnancies (two cases), and ruptured dermoid cyst. Diagnostic challenges were common due to atypical presentations and overlapping features. Surgical intervention was required in all cases, with successful outcomes.
Conclusion: A high index of suspicion for gynaecological causes is essential in all females presenting with acute abdomen. Early imaging and timely surgical intervention can significantly improve outcomes and preserve reproductive potential.

Keywords*: Acute abdomen, adnexal torsion, ectopic pregnancy, ovarian cyst rupture, tubo-ovarian abscess.*

INTRODUCTION

Acute abdominal pain in females represents a diagnostic challenge due to the wide spectrum of possible etiologies involving gastrointestinal, urinary, and reproductive systems. Gynaecological causes are particularly important as delayed diagnosis may result in significant morbidity, including loss of fertility. This case series highlights diverse and uncommon presentations of acute abdomen in gynaecology, emphasizing diagnostic dilemmas and management strategies.

CASE SERIES

CASE 1

An 11-year-old premenarchal girl presented to the emergency department with acute onset periumbilical pain of 1-day duration. The pain was dull aching, continuous, and non-radiating, with gradual increase in intensity. There was no associated fever, vomiting, urinary symptoms, or bowel disturbances, although a history of chronic constipation was noted.On examination, she was hemodynamically stable with mild abdominal tenderness localized to the periumbilical and left lower quadrant regions. Laboratory investigations revealed leukocytosis. Ultrasound of the abdomen and pelvis demonstrated a multicystic enlarged left ovary with small hemorrhagic areas and minimal pelvic free fluid, with no definite evidence of torsion.

Despite conservative management, her symptoms worsened over 72 hours. Contrast-enhanced CT scan revealed an enlarged left ovary with heterogeneous enhancement and peri-ovarian hematoma, raising suspicion of torsion (**Figure A**). Diagnostic laparoscopy revealed a left fimbrial cyst (~6 cm) with isolated torsion of the fallopian tube (two complete turns) and hemorrhagic changes (**Figure 1**). The ovary was normal. Detorsion and cystectomy were performed,

preserving the adnexa. Histopathology confirmed hemorrhagic infarction of the fimbrial cyst. The postoperative period was uneventful.

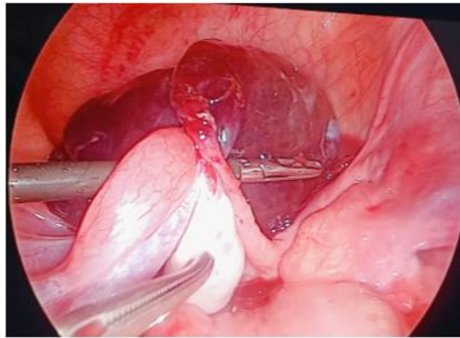

Fig 1: Left fimbrial cyst (~6 cm in diameter) with left tubal torsion and haemorrhagic discoloration

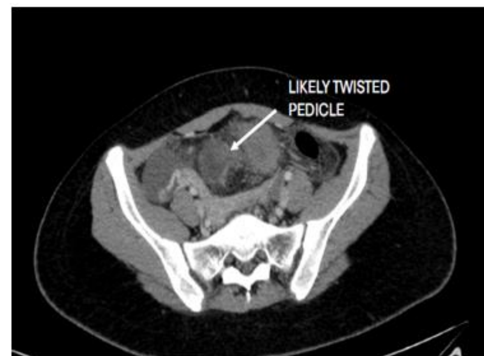

Fig A: Enlarged left ovary with periovarian haematoma

CASE 2

A 21-year-old unmarried woman presented with high-grade intermittent fever for 5 days, vomiting, and right lower abdominal pain for 3 days. Clinical examination revealed localized tenderness in the right iliac fossa with leukocytosis. Initial imaging suggested a complex left adnexal cyst, likely endometrioma, along with features suspicious of mild acute appendicitis.

She underwent laparoscopic appendectomy, and histopathology confirmed acute appendicitis. However, persistent fever in the postoperative period prompted further evaluation. Imaging studies, including CT and PET-CT, revealed a progressively enlarging left adnexal lesion with features suggestive of an infected cyst or abscess (**Figure B**)

The clinical course was complicated by positive serology for brucellosis, leading to initiation of targeted antibiotic therapy. Despite this, the patient had persistent fever and rising inflammatory markers. Ultrasound-guided aspiration yielded purulent material, but symptoms recurred, necessitating repeat aspiration and eventual laparoscopic drainage.

Intraoperatively, a multiloculated left ovarian abscess with dense adhesions was identified (**Figure 2**), along with a right ovarian cyst. Drainage of the abscess and bilateral ovarian cystectomy were performed. Culture grew Escherichia coli, and histopathology confirmed endometriosis with secondary infection. The patient recovered well following prolonged antibiotic therapy.

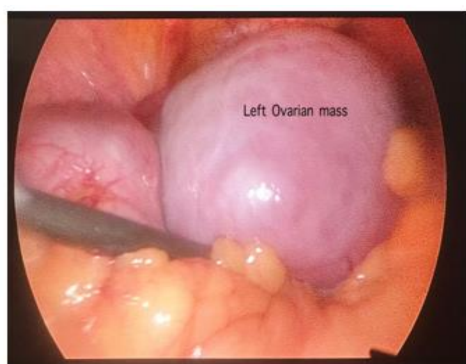

Fig 2: Left ovary enlarged (~7 × 6 cm) multiloculated abscess cavity: ~150 mL

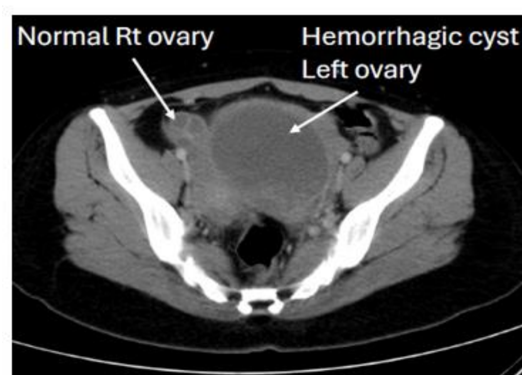

Fig B: Left ovarian cyst, possibly abscess

CASE 3

A 26-year-old unmarried woman presented with sudden onset lower abdominal pain of 4 hours duration. The pain was severe, continuous, and associated with mild abdominal distension. Clinical examination revealed tachycardia, localized tenderness, guarding, and signs suggestive of free fluid in the abdomen.

Pregnancy was ruled out. Ultrasound showed a bulky right ovary with a cyst and significant free fluid. CT scan demonstrated a complex adnexal lesion with active contrast extravasation (**Figure C**) and hemoperitoneum extending into the peritoneal cavity.

In view of ongoing pain and imaging findings, emergency laparoscopy was performed. Approximately 200–300 mL of hemoperitoneum was evacuated. A ruptured hemorrhagic corpus luteum cyst with active bleeding was identified in the right ovary (**Figure 3**). Hemostasis was achieved by fulguration of the cyst wall. The patient had an uneventful recovery and was discharged on postoperative day 3.

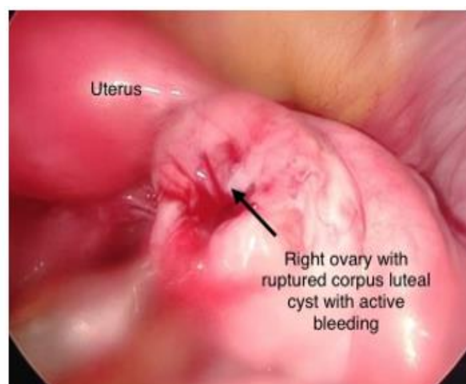

Fig 3: Ruptured hemorrhagic corpus luteal with active oozing

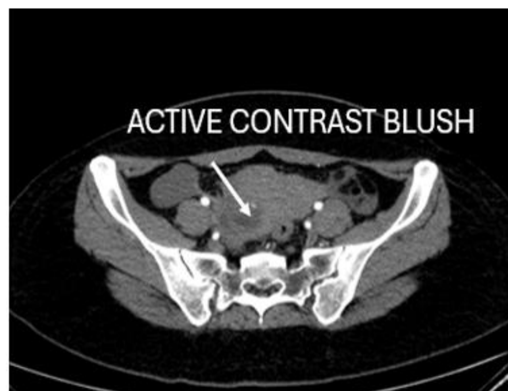

Fig C: Enlarged Right ovary with active leaking of contrast

CASE 4

A 27-year-old nulliparous woman presented with prolonged vaginal bleeding for 12 days, lower abdominal pain, and giddiness. Clinical examination was largely unremarkable except for right adnexal tenderness. Urine pregnancy test was positive.

Transvaginal sonography revealed a right adnexal mass without evidence of intrauterine gestation, and she was managed as a case of pregnancy of unknown location. Serial beta-hCG measurements showed a suboptimal rise. Subsequently, the patient developed worsening pain and a drop in hemoglobin levels.

Repeat imaging demonstrated an increase in adnexal mass size with echogenic free fluid suggestive of hemoperitoneum. Emergency laparoscopy revealed a ruptured right ampullary ectopic pregnancy with approximately 800 mL hemoperitoneum (**Figure 4**). Right salpingectomy was performed. The postoperative course was uneventful.

Fig 4: Ruptured right ampullary tubal cyst ectopic pregnancy

CASE 5

A 36-year-old primigravida undergoing treatment for infertility presented with early pregnancy and suspected ectopic gestation. Initial transvaginal sonography showed a small intrauterine sac and a separate left adnexal lesion, raising suspicion of heterotopic or ectopic pregnancy. Serial beta-hCG levels showed an increasing trend.

The patient opted for medical management with methotrexate. However, on day 4, she developed acute abdominal pain, hypotension, and tachycardia. Repeat imaging revealed hemoperitoneum and features suggestive of rupture.

Emergency laparoscopy revealed approximately 1.5 litres of hemoperitoneum and a ruptured left tubal isthmic ectopic pregnancy (**Figure 5**). Left salpingectomy was performed, and blood transfusion was administered. The patient recovered well postoperatively.

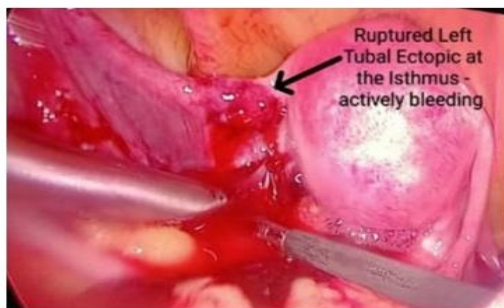

Fig 5: Ruptured left tubal isthmic ectopic Pregnancy with active bleeding

CASE 6

A 46-year-old multiparous woman with a history of heavy menstrual bleeding and known adnexal masses was admitted for elective hysterectomy. One day prior to surgery, she developed sudden severe abdominal pain with distension and guarding.

Imaging revealed a large adnexal cyst with fat density components and features suggestive of rupture (**Figure D**). Emergency surgery was undertaken. Intraoperatively, rupture of an ovarian dermoid cyst with spillage of sebaceous material and hair into the peritoneal cavity noted (**Figure 6**).

Total abdominal hysterectomy with right salpingo-oophorectomy and peritoneal lavage was performed. Histopathology confirmed mature cystic teratoma with mucinous borderline tumour component. The postoperative course was complicated by mild pleural effusion, which resolved with conservative management

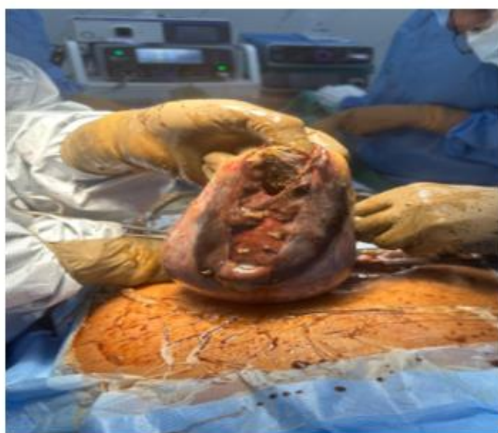

Fig 6: Ruptured ovarian dermoid cyst with spillage of sebaceous materials

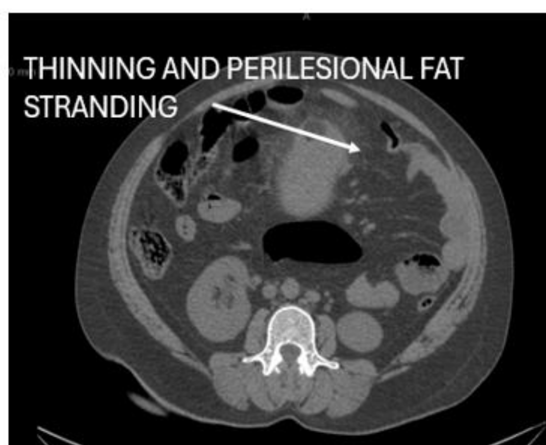

Fig D: Large adnexal cyst with fat stranding and perilesional thinning

Case Summary Table

Case	Age	Presentation	Diagnosis	Procedure	Outcome
1	11	Acute pain	Fimbrial cyst with tubal torsion	Cystectomy	Recovered
2	21	Fever + pain	Ovarian abscess	Drainage + cystectomy	Recovered
3	26	Acute pain	Ruptured corpus luteum cyst	Fulguration	Recovered
4	27	Bleeding + pain	Ruptured ectopic pregnancy	Salpingectomy	Recovered
5	36	Amenorrhea	Ruptured ectopic pregnancy	Salpingectomy	Recovered
6	46	Acute abdomen	Ruptured dermoid cyst	TAH + RSO	Recovered

DISCUSSION

The present case series demonstrates the broad spectrum of gynaecological conditions presenting as acute abdomen across different age groups, ranging from premenarchal to perimenopausal women. The variability in clinical presentation, frequent overlap with gastrointestinal and urinary pathologies, and evolving course in several patients contribute to diagnostic uncertainty. Evidence suggests that early consideration of gynaecological causes significantly improves diagnostic accuracy and clinical outcomes, particularly with regard to fertility preservation (1,2,11,12).

A consistent challenge observed across cases was the lack of specific clinical features at presentation. Symptoms such as diffuse abdominal pain, low-grade fever, or gastrointestinal discomfort often failed to localize the pathology. In the first case, inconclusive initial imaging and non-specific symptoms delayed definitive diagnosis. This aligns with existing literature indicating that adnexal torsion may not demonstrate classical imaging findings in early stages due to intermittent vascular compromise (1,2,13,20). Therefore, persistent or worsening symptoms despite conservative management should prompt early surgical evaluation.

The coexistence of multiple pathologies further complicates diagnosis. In the second case, initial confirmation of acute appendicitis appeared to explain the clinical presentation; however, persistent postoperative fever led to the identification of an ovarian abscess. Similar scenarios have been described where anchoring to an initial diagnosis delays recognition of concurrent disease processes. Tubo-ovarian infections, including infected endometriomas, are known to arise through ascending infection, direct spread, or hematogenous routes (3,7,17,18). These conditions often require a combination of antimicrobial therapy and surgical intervention when abscess formation occurs (7,17).

Adnexal torsion in pediatric and adolescent populations, although less commonly suspected, is increasingly recognized in clinical practice. The occurrence of isolated tubal torsion associated with a fimbrial cyst, as observed in this series, remains rare. Delayed diagnosis in younger patients is often attributed to atypical presentations and lower index of suspicion. Current evidence supports conservative surgical approaches such as detorsion and cystectomy, even in cases where the adnexa appear compromised, due to the potential for functional recovery (2,11,13).

Infective adnexal pathology presents additional management challenges. Endometriotic cysts are particularly susceptible to secondary infection due to their altered microenvironment (3). The progression to abscess formation, as seen in this series, is characterized by persistent fever, rising inflammatory markers, and increasing cyst complexity on imaging. While image-guided aspiration may provide temporary relief, definitive management often requires surgical drainage and cystectomy, especially in multiloculated or recurrent collections (7,17,18).

Ruptured corpus luteum cyst is a well-recognized cause of acute abdomen in reproductive-age women and may present with significant hemoperitoneum (4). In the present series, active bleeding necessitated surgical intervention. Although conservative management may be appropriate in stable patients, ongoing hemorrhage or diagnostic uncertainty warrants prompt laparoscopy (4,14).

Ectopic pregnancy remains a critical differential diagnosis in women presenting with acute abdominal pain. The two cases in this series illustrate its unpredictable clinical course. One patient initially presented as a pregnancy of unknown location and later developed rupture, while another experienced rupture despite medical management. Literature indicates that rising beta-hCG levels do not exclude ectopic pregnancy and that rupture may occur even during treatment (5,6,15,16,19). These findings underscore the importance of close monitoring and timely intervention.

Rupture of a dermoid cyst, though uncommon, can result in significant intra-abdominal inflammation due to spillage of sebaceous material. Such cases may lead to chemical peritonitis, necessitating prompt

surgical management (8,9). Additionally, the presence of a borderline tumour component in this case highlights the importance of histopathological evaluation, as malignant transformation, although rare, has been documented (8).

Imaging remains central to the evaluation of acute gynaecological abdomen. Ultrasonography is the first-line modality, with computed tomography and advanced imaging techniques providing additional diagnostic clarity in complex cases (10,13,20). However, as demonstrated in this series, imaging findings must always be interpreted in conjunction with clinical assessment. In several instances, definitive diagnosis was established only after laparoscopic evaluation.

From a management perspective, minimally invasive surgery proved effective across all cases requiring intervention. Fertility-presing procedures were prioritized whenever feasible, particularly in younger patients. However, more extensive surgery may be required in cases involving severe infection, extensive tissue damage, or suspicion of malignancy.

This study is limited by its small sample size and absence of long-term follow-up data. Nevertheless, it highlights important diagnostic challenges and reinforces the need for a systematic and flexible approach in managing acute abdomen in females.

In summary, acute abdomen in women requires careful clinical evaluation supported by appropriate imaging and timely surgical intervention. Maintaining a high index of suspicion for gynaecological causes is essential for improving outcomes and preserving reproductive potential (1,2,11,12).

Future research should focus on standardized diagnostic algorithms and prospective studies comparing management strategies. Integration of point-of-care ultrasound may improve early detection.

CONCLUSION

Acute abdomen in females requires a multidisciplinary approach. Awareness of uncommon gynaecological causes and early surgical intervention are key to improving patient outcomes and preserving fertility.

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