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Case Report

A peri appendicular abscess presenting as tubo ovarian mass

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ABSTRACT

An appendicular abscess represents the most prevalent complication associated with acute appendicitis, particularly occurring between the fifth and tenth day after an appendix has perforated. This abscess may manifest in either the retroperitoneal space or the peritoneal cavity. Approximately 8% of patients report epigastric pain, 15% experience generalized abdominal discomfort, while 70% present with localized pain in the periumbilical area. Furthermore, around 95% of individuals exhibit alterations in bowel habits, reduced appetite, nausea, and vomiting. A tubo-ovarian abscess (TOA) refers to an abscess that develops within the uterus, fallopian tubes, and ovaries, and it is a significant concern arising from pelvic inflammatory disease (PID). Not all instances of TOA are associated with PID; infections may also stem from gastrointestinal sources or an ascending vaginal infection. Between 15% and 35% of women treated for confirmed PID are subsequently diagnosed with a TOA. The majority of individuals affected by TOA are within the childbearing age group. Among sexually active women of reproductive age, the estimated lifetime prevalence of self-reported PID is approximately 4.4%. TOAs are generally polymicrobial, with common pathogens including *Peptostreptococcus*, *Bacteroides fragilis*, and *Escherichia coli*.

Keywords: Appendicular mass, Tubo-ovarian mass, Pelvic inflammatory disease, Appendicular perforation, Fecolith

INTRODUCTION

A tubo-ovarian abscess (TOA) is a serious inflammatory condition affecting the adnexal structures, typically resulting from an advanced PID. Traditionally, a TOA presents with rise in body temperature (fever), rise in the counts of WBCs (leukocytes), generalized pain over the lower abdomen or limiting to pelvic region, presence of mass over adnexa and /or discharge from vagina. However, the clinical presentation of this condition can vary widely.

In the event of abscess rupture, there is a risk of life-threatening sepsis, making it essential that any clinical suspicion of this diagnosis requires prompt evaluation and intervention. This case report discusses the circumstances under which TOA should be added to the differential diagnosis and outlines the appropriate methods for its assessment. It emphasizes the importance of an interprofessional team in the effective management of TOA.

Sexually active, reproductive age group women are the majority of patients typically, TAO is a late onset consequence of PID. Infectious micro-organisms originating from cervix or vagina first move upward to the endometrium, subsequently passing through the fallopian tubes into the peritoneal cavity, where they give rise to a localized mass. Mostly peritonitis accompanies these cases. Additionally, TOAs may occur because of infection spreading from nearby organs, most often the appendix. They can also be caused by hematogenous dissemination of infection originating from a distant site or be associated with malignancies of the pelvic region.[1]

We present an unusual case of a peri-appendicular abscess presenting as a tubo ovarian mass.

CASE REPORT

A 22-year-old lady, P_1L_1, previous NVD, regular cycles with no comorbidities, presented to the outpatient department (OPD) with chief complaints of pain abdomen for one week. The pain was gradual in onset, severe, localized to the right iliac fossa (RIF), progressive, and non-radiating. It was associated with painful micturition and loose stools. A history of fever associated with vomiting was present. Patient noticed no other symptoms.

On physical examination, a mass was palpable in the RIF, not crossing midline, which moved down with inspiration. All baseline investigations showed elevated inflammatory markers. Urine, blood, and stool cultures showed no growth. The abdominal sonogram showed a heterogeneous irregular lesion seen with epicentre at the POD. Both ovaries were seen abutting the periphery of the lesion. Internal septations/ strands and internal echoes were seen within. No Doppler detectable vascularity- likely tubo-ovarian mass/ abscess abdominopelvic non-contrast-enhanced computed tomography (NCCT) scan was performed which showed large, ill-defined fluid collection with surrounding diffuse fat stranding noted extending from RIF region to pouch of Douglas measuring 12×8.9 cm in size. Appendix partly visualized with appendicolith. Diffuse inflammatory wall thickening of the ileocecal region and terminal ileum was noted. p/o acute appendicular perforation with abscess formation/ TOA.

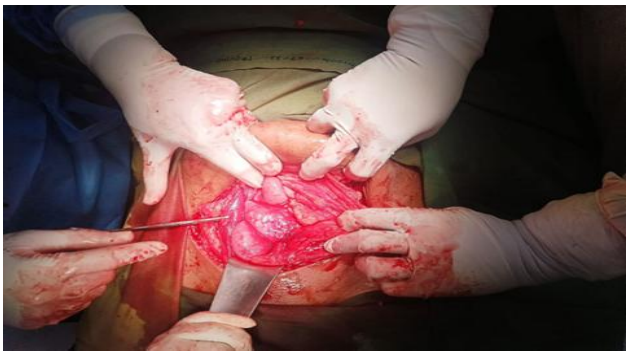

Figure 1: A large mass in RIF matted completely with bowel and omental adhesions

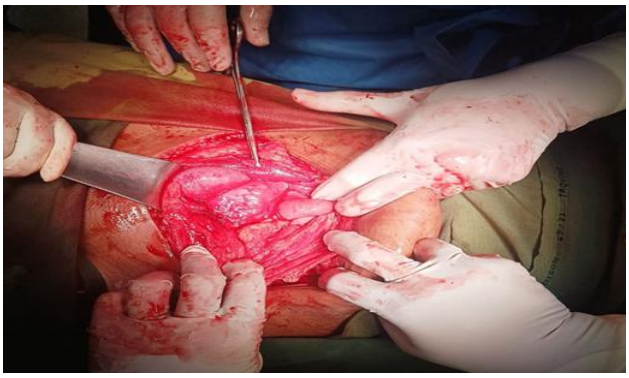

Figure 2: Appendicular mass of bowel and omental adhesions.

An exploratory laparotomy was performed, which showed a large mass in the RIF matted completely with omental and bowel adhesions seen, uterus not visualized, left ovary not visualized, right ovary normal, and POD completely obliterated. Attempts were made to separate omental and bowel adhesions from the mass. While blunt separation of bowel; suddenly foul-smelling pus of 300-400 ml n noted, omental adhesions to RIF noted, Inter-bowel and intra-bowel adhesions noted, Rectum and sigmoid colon normal, Bilateral adrenals inflamed; in the peritoneal cavity- appendix found to be gangrenous and sloughed off, Appendicular mass noted, possibly fecolith, ileocaecal resection done. Specimen sent for histopathological examination

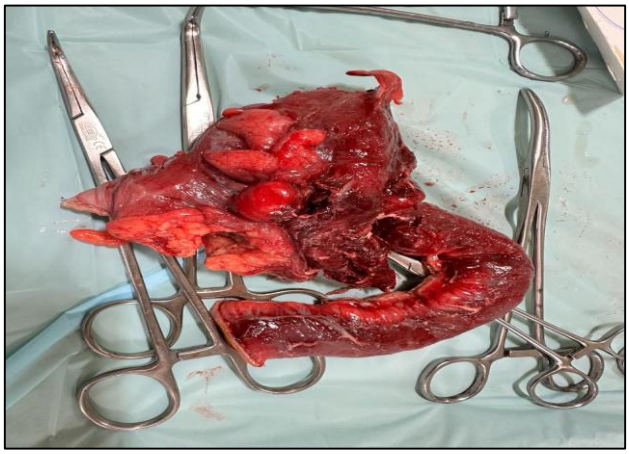

Figure 3: Appendix specimen.

Histopathological report showed Nature of specimen: limited ileocecal resection

Impression-acute suppurative appendicitis with perforation, transmural inflammation/ serositis extending to caecum, mesentery shows moderate inflammation and resected margins are viable.

DISCUSSION

A TOA is an infectious and inflammatory collection that involves the uterine tubes or ovaries and can spread to nearby organs. The most serious complication of PID is the TOA.[2] Severe sepsis may result from this condition. TOA arises in approximately one-third of individuals with PID. Risk factors are closely shared in TOA and PID. Women aged 15 to 25, those with a history of multiple sexual partners, and individuals who have previously experienced PID are at a heightened risk. Women at high risk are usually between 15 and 25, have a background of engaging with multiple sexual partners and individuals who have experienced PID previously. Furthermore, women with compromised immune systems are more susceptible to severe PID, which can subsequently result in a TOA. Furthermore, a higher incidence of TOAs is seen in women with compromised immunity, as they are at a higher risk of experiencing severe PID.[3] Fever and chills,

Vaginal discharge, pelvic pain with abdominal pain, and nausea are the primary symptoms of TOA. Though laboratory analysis of blood comprehensively may reveal elevated erythrocyte sedimentation rate (ESR), the surge in levels of C-reactive protein and leucocytosis, they are not consistently observed.

Primary and secondary are the two classifications of TOA. An indigenous microbiota that ascends through the genital tract or an organism that is sexually transmitted can cause a primary TOA.[4] An inflammatory response is initiated when the infection extends into the uterine tubes.[5] Extension of inflammation to adjacent organs (such as colitis, diverticulitis, appendicitis and pelvic malignancy) would result in secondary TOA.[6]

Antibiotic treatment options for TOA may include intravenous (IV) ofloxacin at a dosage of 400 mg administered two times along with metronidazole 500 mg also given intravenously three times in every 24 hours. Alternatively, a regimen of IV clindamycin at 900 mg three times daily can be combined with either IV gentamicin or IV cefoxitin at 2 gm administered thrice a day, along with doxycycline 100 mg taken two times a day either orally or intravenously. Another option is 200 mg of IV ciprofloxacin two times a day, in combination with doxycycline at 100 mg two times a day in oral or intravenous route, and thrice a day of metronidazole 500 mg IV.[7]

The initial approach to treatment typically involves medical management, with the preferred intravenous antibiotic regimen consisting of a cephalosporin combined with doxycycline.[8] If patient is afebrile for 24 hours, oral regimen of doxycycline, combined with metronidazole, can be administered for 14 days to ensure broader anaerobic coverage.

The management of TOA predominantly involves medical treatment, accounting for 70% of cases, and in the remaining 30% cases intervention with surgery is necessary. Interventional radiology procedures, including drainage guided by imaging techniques, can also be utilized. TOA >8 cm in size often requires drainage or surgical procedures. Several surgical options are available, including total abdominal hysterectomy and transabdominal unilateral salpingo-oophorectomy. Laparoscopic methods, which encompass drainage followed by excision, have demonstrated favourable results, achieving a 100% cure rate in certain studies when used in conjunction with antibiotics. Additionally, early laparoscopic intervention is associated with reduced operation times and shorter hospital stays compared to delayed laparoscopic procedures.[9] Studies on fertility preservation also show improved outcomes with laparoscopic drainage and antibiotic therapy, resulting in fewer adhesions and higher pregnancy rates.[10]

The appendicular abscess arises as a complication following the perforated appendix, occurring in about 10% of acute appendicitis cases. Diagnosis is established through clinical evaluation, the identification of leucocytosis, and techniques of imaging such as USG (ultrasound) or CT (computed tomography). The standard treatment approach is typically conservative, involving the administration of intravenous fluids, antibiotics, and percutaneous drainage of the abscess.

In managing an appendicular abscess conservatively, the patient is initiated on intravenous antibiotics and analgesics, with careful monitoring of vital signs and maintenance of nil per oral status. This management strategy was notably advanced by Ochsner and Sheeren, demonstrating an 80% to 90% success rate with minimal complications. Following eight weeks, an interval appendectomy is performed to mitigate the risk of recurrence.[11]

Percutaneous drainage is a recognized method employed in the management of patients suffering from complicated appendicitis accompanied by abscess formation. This procedure can be executed using the Seldinger technique, guided by ultrasound or computed tomography. The integration of percutaneous drainage with conservative treatment has been linked to improved patient outcomes and a decreased likelihood of recurrence. Additionally, this approach contributes to a reduction in the duration of hospital stays.[11] Interval appendectomy has historically been conducted following conservative management of an appendicular abscess to avert recurrence. Given that the recurrence rate for appendicitis ranges from 5% to 25%, alongside a complication rate of 23% associated with the procedure, the necessity of conducting an interval appendectomy has come under scrutiny. Numerous studies indicate that, owing to the low recurrence rate, there is insufficient rationale for the performance of an interval appendectomy.[11]

CONCLUSION

This case report illustrates that appendicular abscesses may manifest as TAO, particularly in young female patients. The diagnosis relies on a clinical-bio-radiological tripod approach. Maintaining a high level of suspicion is crucial when diagnosing appendicular abscesses, as inadequate management can result in life-threatening complications.

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