

Primary Tubo-Ovarian Mucormycosis in an Immunocompetent Adolescent Female: A Rare Case Report and Review of Management

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Case Report

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Abstract

Background: Mucormycosis is an invasive fungal infection, typically seen in immunocompromised patients. Primary tubo-ovarian involvement is extremely rare, especially among adolescents with no known immunodeficiency. We present a case of primary tubo-ovarian mucormycosis in an apparently immunocompetent adolescent female.

Case Presentation: A 17-year-old female presented with a 3-4 months history of lower abdominal pain, intermittent high-grade fever, weight loss, and progressively increasing right adnexal mass. Investigations showed raised white cell count, elevated inflammatory markers, and a mild increase in CA-125 levels. Imaging studies were indicative of tubo-ovarian abscess. Laparotomy revealed a complex right tubo-ovarian mass containing 500 ml of pus. Microscopic findings revealed ovarian abscess formation with severe fungal infection and strongly positive PAS stain, suggesting mucormycosis. Amphotericin B caused side effects; hence, voriconazole was administered as other options were not available. Although there was improvement in clinical condition, the presence of adnexal mass and recurrence of symptoms and renal dysfunction required radical excision surgery.

Conclusion: Primary tubo-ovarian mucormycosis can be encountered in apparently immunocompetent adolescents and might mimic tubo-ovarian abscess. Prompt histologic diagnosis, effective antifungal therapy for Mucorales and radical surgery play a significant role in successful management.

Introduction

Mucormycosis is a rare but fulminant fungal infection caused by environmental Mucorales molds. It is characterized by rapid angio-invasion, vascular thrombosis and tissue necrosis [1]. Historically a disease of the immunocompromised, it most often affects patients with poorly controlled diabetes, hematologic malignancies, transplant immunosuppression or prolonged neutropenia [1]. The estimated incidence in most countries is on the order of 0.005–2 cases per million annually, though outbreaks (e.g. in India during the COVID-19 pandemic) have been driven by surges in high-risk patients [2, 3]. Notably, however, a substantial fraction of cutaneous mucormycosis cases occur in apparently immunocompetent hosts after trauma or skin breaches [4]. In contrast, primary genital tract involvement is exceedingly unusual. Only isolated reports exist (for example, a 56-year-old healthy woman with Mucor vaginitis refractory to azoles and cured only by topical amphotericin B), indicating how rare female genital mucormycosis is [5]. Here we report a case of primary tubo-ovarian mucormycosis in an adolescent female with no known immunodeficiency, an unprecedented finding that broadens the spectrum of this disease.

Mucorales spores can enter the body by inhalation, ingestion or direct inoculation into tissue [1]. In susceptible individuals, these organisms adhere to and invade endothelial cells (a process facilitated by host factors like hyperglycemia), proliferating as broad (10–20 μm), ribbon-like, pauciseptate hyphae that penetrate blood vessels [1]. Angioinvasion causes thrombosis and extensive ischemic necrosis in involved organs. The classic clinical syndromes (rhinocerebral, pulmonary, gastrointestinal, cutaneous, or disseminated disease) depend on the portal of entry and host factors [1]. Pelvic mucormycosis may

mimic more common conditions, including bacterial tubo-ovarian abscess or ovarian malignancy, presenting with nonspecific features such as fever, lower abdominal pain, and adnexal masses that can delay diagnosis [1, 6]. Ultrasound and CT typically demonstrate complex tubo-ovarian masses; however, these imaging findings are nonspecific and cannot reliably distinguish fungal infection from pyogenic abscess or other adnexal pathologies. Definitive diagnosis requires histopathologic examination and/or culture of tissue obtained by biopsy, as no validated serologic or circulating antigen assays are currently available for the routine diagnosis of mucormycosis [1, 7]. On histology, infected tissue classically shows broad, non-septate hyphae with irregular wide-angle branching invading vessel walls [8]. Cultures or molecular identification confirm the specific *Mucorales* species.

Management of mucormycosis requires a prompt, multidisciplinary approach combining surgical intervention and systemic antifungal therapy. Early and complete surgical debridement of all necrotic tissue is a cornerstone of treatment and has been consistently associated with improved survival. Lipid formulations of amphotericin B (typically 5–10 mg/kg/day) remain the recommended first-line antifungal therapy owing to their superior efficacy and reduced nephrotoxicity compared with amphotericin B deoxycholate [9, 10]. In patients who cannot tolerate amphotericin B or require prolonged therapy, posaconazole or isavuconazole are recommended as step-down or salvage treatment because of their demonstrated activity against *Mucorales* [1, 9]. Despite these recommendations, management may need to be individualized in resource-limited settings or when drug intolerance, toxicity, or limited availability restricts therapeutic options. Early diagnosis, prompt surgical source control, and coordinated multidisciplinary care remain the most important determinants of favorable outcomes. Nevertheless, mucormycosis continues to carry a high mortality rate, with overall mortality frequently exceeding 40% despite aggressive medical and surgical management [11].

This case highlights the rare occurrence of primary tubo-ovarian mucormycosis in an adolescent with no known underlying immunodeficiency, thereby expanding the clinical spectrum of this invasive fungal infection. It underscores the importance of considering fungal etiologies in patients with fulminant pelvic infections that fail to respond to conventional antimicrobial therapy, particularly when the clinical course is atypical or rapidly progressive. We present the patient's clinical course, diagnostic work-up, therapeutic management, and outcome in accordance with the CARE guidelines, with the aim of increasing awareness of this uncommon presentation and facilitating earlier recognition and intervention [12].

Case Presentation

Patient Information

A 17 year-old unmarried female was referred to our tertiary care facility with a three-to-four-month history of persistent, chronic lower abdominal pain, exacerbated by a high-grade fever. Her medical history was significant for a prior appendectomy and for a right ovarian cystectomy performed in 1 year ago for a ruptured hemorrhagic cyst. Her menarche was at age 13, with a regular 28-day cycle. At presentation, the patient was noticeably underweight and ill-looking, with a recorded weight of 36–38 kg.

Clinical Findings

Physical examination revealed an ill-looking, cachectic patient in moderate distress. She was tachycardic (pulse: 125 bpm) and febrile, with a blood pressure of 100/60 mmHg. A notable fever pattern was observed: daily spikes ranging from 100°F (37.7°C) to 104°F (40°C) typically occurred between 2:00 PM and 9:00 PM, accompanied by rigorous chills and sweating. These episodes were persistently unresponsive to antipyretics (paracetamol infusions) and cold sponging. Abdominal examination identified significant tenderness and a palpable, firm mass in the right iliac fossa. The patient also reported constitutional symptoms, including weight loss, dizziness, and hematuria. Table 1 shows the chronological record of the patient's temperature.

Table 1
Clinical temperature record from admission to stabilization

Date (2026)	Time	Temperature (°F)	Clinical Context / Notes
Day 1	1:40 PM	99°F	Admission (Gynae Ward); history of fever with chills
Day 2	8:00 AM	99°F	Day of Surgery (Laparotomy); pulse 86 bpm
Day 3	8:00 AM	98.4°F	1st Post-operative day; vitals stable
Day 4	6:00 AM	98.4°F	2nd Post-operative day
Day 5	6:00 AM	98.4°F	3rd Post-operative day; pulse 92 bpm
Day 6	6:00 AM	98°F	4th Post-operative day; oriented (GCS 15/15)
Day 7	6:00 PM	101°F	Fever spike noted; pulse 110/80 mmHg
Day 8	6:00 AM	98°F	Shifted to Medical Ward for persistent fever
Day 9	6:00 PM	104°F	High-grade spike; graphical peak recorded
Day 10	6:00 PM	102°F	Post-transfer monitoring; chills and sweating noted
Day 11	6:00 PM	104°F	Peak spike; refractory to cold sponging/paracetamol
Day 12	10:00 AM	98°F	Transition to Voriconazole initiated
Day 12	9:00 PM	99°F	Evening follow-up; vitals stabilized
Day 13	10:00 AM	98°F	vitals stabilized
Day 18	8:49 AM	98°F	vitals stabilized
Day 31	10:00 AM	98°F	Patient discharged

Diagnostic Assessment

Admission laboratory investigations revealed a markedly elevated ESR (145 mm/hr), leukocytosis (WBC: $14.5\text{--}15.2 \times 10^3/\text{mm}^3$), and a positive C-Reactive Protein (40 mg/L, first recorded on May 4, 2026). Tumor marker analysis showed an elevated CA-125 of 91.35 U/ml. Blood cultures remained negative after 7 days, and serological screening for HIV and HBsAg was negative.

Serial abdominal ultrasounds tracked the progression of a complex right adnexal mass. Initial scans in 1 month prior to admission showed a 4.7 x 4.0 cm thick-walled cystic lesion (Fig. 1.1). By Day 1 of admission, the lesion had increased to 8.3 x 5.0 cm, appearing as a heterogeneous complex mass with internal fluid and inflammatory echoes, highly suggestive of a Tubo-ovarian abscess (Fig. 1.2). Cytology of the ovarian fluid initially showed only degenerated cells and acellular debris, with no evidence of malignancy. Further analysis of the aspirated fluid revealed a high-LDH ($> 4395 \text{ U/L}$), a glucose level of $< 5.0 \text{ mg/dL}$, and a total protein of 3 g/dL with an albumin of 1 g/dL. Hematological examination of the fluid identified 60 WBC/cmm (60% neutrophils, 40% lymphocytes) and 20 RBC/cmm. Gram staining showed no micro-organisms, and no growth was observed in preliminary cultures.

Therapeutic Intervention

The patient was admitted to the Gynaecology unit on Day 1. Due to the severity of symptoms and imaging findings (Fig. 1.2), an emergency laparotomy was performed on Day 2 of admission. Intraoperative findings included:

- Drainage of 500 cc of frank pus.
- A complex right-sided tubo-ovarian mass involving both tubes and ovaries; the right ovary was notably indistinguishable within the mass while the left tube and ovary appeared healthy.
- The uterus was found to be 8-week size and anteverted.

Tissue samples consisting of two tan-brown fragments (largest measuring 2.0x1.5x1.0 cm) were sent for histopathology. Microscopic examination revealed ovarian tissue showing abscess formation with a severe fungal infection. Notably, no evidence of angioinvasion was identified, and the tissue was negative for malignancy. Special staining with Periodic Acid-Schiff (PAS) was strongly positive for fungal organisms. The definitive diagnosis, representing the consensus opinion of two consultant pathologists, was Ovarian Tissue Abscess with Fungal Infection, with Mucormycosis favoured morphologically (Fig. 2A & 2B).

Due to the unexpected and rare nature of this finding, a formal Critical Alert was issued by the histopathology department on Day 6, at 09:15 AM. The fellow consultant histopathologist immediately communicated the diagnosis to the clinical team and the patient's father, ensuring the findings were read back for accuracy. This alert served as the clinical turning point, allowing the team to immediately pivot to a targeted antifungal treatment plan.

Following the surgical procedure, the patient was initially placed on triple antibiotic cover (Ceftriaxone, Metronidazole, and Gentamicin) and started on Amphotericin B. However, after a test dose of Amphotericin B, the patient experienced significant vomiting and drowsiness, leading the team to withhold the loading dose. On Day 8, she was transferred to the Medical Ward for multidisciplinary management. Following consultation with an Infectious Disease specialist, the medical team decided to stop Amphotericin B and pivot to a more tolerated regimen, initiating intravenous Voriconazole (200 mg BD) on Day 12. She was also placed on Doxycycline (100 mg BD) and Clarithromycin (500 mg BD) to provide broad coverage.

Follow-up and Outcomes

By Day 11, the patient was clinically stable, oriented (GCS 15/15), and showing signs of recovery despite her prolonged fever. A biochemical response was noted as her CA-125 decreased from a baseline of 91.35 U/ml to 37.7 U/ml by day 16. A follow-up ultrasound on Day 12, revealed a residual heterogeneous area in the right adnexa measuring 68 x 43 x 71 mm (volume 109.3 cm³), which was interpreted as a post-operative hematoma or a residual/recurrent complex cyst (Fig. 3.1). To provide anatomical orientation relative to this mass, the longitudinal scan documented an 80.9 mm uterus with a normal myometrial echotexture and a central endometrial echo of 4.5 mm (Fig. 3.2). Furthermore, the scan identified sonographic evidence of mild abdominal ascites, characterized by a pocket of inflammatory fluid measuring 8.3 cm³ in the left iliac fossa (Fig. 3.3) and an additional 3.0 cm³ pocket in the right iliac fossa (Fig. 3.4), consistent with the patient's recent major surgery and severe pelvic infection. The left ovary was also visualized and found to be normal in size and echotexture, with a volume of 5.9 cm³ and no solid or cystic lesions, confirming the preservation of her contralateral adnexa. The patient was discharged after being admitted for 31 days, in a clinically stable and afebrile state, having completed her initial inpatient management. The patient was transitioned to a outpatient regimen of oral Voriconazole (200 mg BD).

Despite initial stabilization, the patient's clinical course was complicated by a relapse and readmission after 30 days of being discharged, presenting with severe pelvic pain, vomiting, and high-grade fever. A repeat ultrasound on next day (Fig. 4) revealed a complex, thick-walled solid and cystic lesion in the right adnexa measuring 77 x 53 x 50 mm (calculated volume 110 ml). The radiologist noted no interval change in the mass since the previous scan (109.3 cm³), confirming the persistence of the fungal mass despite one month of oral Voriconazole therapy. Laboratory investigations during readmission identified new-onset renal impairment with a Blood Urea of 79 mg/dL. This renal status precluded a secondary challenge with Amphotericin B due to the high risk of nephrotoxicity. Consequently, the patient was referred back to the Gynaecology ward for definitive radical excisional surgery which was performed on readmission day 8.

Discussion

This case represents an exceptionally rare instance of primary tubo-ovarian mucormycosis in an apparently immunocompetent adolescent, expanding the clinical spectrum of this aggressive fungal infection. Mucormycosis is predominantly seen in patients with diabetes, hematologic malignancy, transplantation, or other forms of immunosuppression, while pelvic and genital involvement is exceedingly uncommon [7]. To our knowledge, primary adnexal mucormycosis in an otherwise healthy adolescent has not been previously described. The present case therefore highlights that Mucorales infection should remain a diagnostic consideration even in patients without recognized predisposing immunodeficiency, particularly when a severe pelvic infection follows an atypical or refractory course.

The initial clinical and radiological presentation closely mimicked a tubo-ovarian abscess. The patient had prolonged lower abdominal pain, fever, leukocytosis, markedly elevated inflammatory markers, and a complex adnexal mass, all of which may occur in bacterial pelvic infection. The modestly elevated CA-125 further raised concern for ovarian malignancy, although CA-125 is a nonspecific marker that may increase in inflammatory and infectious pelvic conditions [13, 14]. Similarly, imaging could not distinguish mucormycosis from a conventional abscess or necrotic tumor, as abdominal mucormycosis may present as a mass or abscess on cross-sectional imaging [15]. In this setting, the lack of response to broad-spectrum antibacterial therapy and the progressive nature of the adnexal lesion were important warning signs that prompted surgical exploration.

Definitive diagnosis depends on tissue examination because clinical findings, imaging, and routine laboratory investigations are insufficient to establish mucormycosis [9]. In the present case, emergency laparotomy revealed a complex tubo-ovarian mass containing frank pus and necrotic tissue, while histopathological examination demonstrated extensive fungal infection with broad, pauciseptate hyphae and strong PAS positivity, favoring Mucorales. Negative blood cultures and the absence of organisms on Gram staining did not exclude fungal infection. Thus, early tissue sampling was critical to avoid continued treatment for presumed bacterial tubo-ovarian abscess and to allow targeted management.

Management of mucormycosis requires both effective antifungal therapy and adequate surgical source control. Liposomal amphotericin B is recommended as first-line therapy, with posaconazole or isavuconazole used as Mucorales-active step-down or salvage agents [9]. In this patient, amphotericin B was initially attempted but could not be continued because of poor tolerance. The unavailability of posaconazole and isavuconazole resulted in the use of voriconazole as a last-resort compromise. However, voriconazole is not recommended for mucormycosis because it lacks reliable activity against Mucorales [9]. The subsequent course provides an important clinical lesson. Although the patient initially stabilized clinically and was discharged on oral voriconazole, the residual adnexal mass showed essentially no interval reduction, measuring 109.3 cm³ on Day 12 and approximately 110 mL on readmission day 2. She was subsequently readmitted with severe pelvic pain, vomiting, and high-grade fever, indicating persistent or recurrent active disease despite the initial clinical improvement. This reinforces that symptomatic stabilization should not be equated with definitive control of mucormycosis when the underlying lesion persists.

The subsequent development of renal impairment, with a blood urea level of 79 mg/dL, further complicated antifungal management and limited the possibility of reintroducing amphotericin B because of its nephrotoxic potential. In this context, definitive surgical management became essential. The progression from initial drainage during the laparotomy to persistent disease and subsequent radical excision next month illustrates the limitations of drainage alone when infected or necrotic fungal tissue remains. Surgical debridement is a cornerstone of mucormycosis treatment because necrotic tissue may be poorly penetrated by systemic antifungal therapy, and guidelines emphasize prompt surgical intervention as an integral component of management [9, 16]. The need for radical excision in this case further emphasizes the importance of achieving adequate source control early in the disease course.

The case also highlights the practical difficulties of managing rare invasive fungal infections in settings where recommended antifungal agents may be inaccessible or poorly tolerated. Early recognition, histopathological confirmation, multidisciplinary coordination, appropriate Mucorales-active antifungal therapy, and aggressive surgical source control are therefore particularly important. For gynecologists and radiologists, an atypical or refractory adnexal mass with severe systemic inflammation should prompt consideration of invasive fungal infection. For pathologists, careful examination with appropriate fungal stains remains essential, particularly when routine cultures are negative or delayed. Overall, this case demonstrates that primary tubo-ovarian mucormycosis can occur in an apparently immunocompetent adolescent and that persistent disease despite initial clinical stabilization should prompt reassessment of both antifungal adequacy and the need for definitive surgical source control.

Conclusion

This report broadens the understanding of mucormycosis by showing it can cause primary pelvic adnexal infection in apparently immunocompetent adolescents. Atypical adnexal masses with severe systemic inflammation and atypical progression should prompt early invasive evaluation. Diagnosis relies on histopathology showing characteristic fungal morphology, as imaging and markers like ESR, CRP, and CA-125 are nonspecific. Treatment involves aggressive surgical debridement and antifungal therapy, typically amphotericin B followed by posaconazole or isavuconazole. In this case, amphotericin B intolerance, limited access to alternatives, persistent mass during voriconazole, and relapse led to radical surgery. The case highlights the importance of early source control and appropriate antifungal choice, illustrating challenges when standard options are limited.

Abbreviations

BD	Bis in die (twice daily)
CA-125	Cancer Antigen 125
CRP	C-Reactive Protein
ESR	Erythrocyte Sedimentation Rate
GCS	Glasgow Coma Scale
H&E	Hematoxylin and Eosin
LDH	Lactate Dehydrogenase
PAS	Periodic Acid–Schiff

Declarations

Author Contributions

Muhammad Umer Suleman: Conceptualization, investigation, data curation, writing – original draft, writing – review and editing, visualization.

Umer Khalil: Investigation, data curation, writing – original draft, writing – review and editing, literature search.

Arsalan Hussain: Investigation, methodology, writing – original draft, writing – review and editing, literature search.

Muhammad Mursaleen: Investigation, data curation, visualization, writing – original draft, writing – review and editing.

Shahbaz Azam Khan: Methodology, investigation, literature search, writing – review and editing, validation.

Nour Aldin Ahmed: Conceptualization, methodology, supervision, project administration, writing – review and editing, validation.

Mohammad Zahir: Investigation, data curation, literature search, writing – original draft, writing – review and editing.

Muhammad Bilal: Investigation, visualization, literature search, writing – original draft, writing – review and editing.

Dawood Ur Rehman: Investigation, data curation, literature search, writing – review and editing, validation.

Data Availability Statement

All data supporting the findings of this study are included within the main manuscript.

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Conflict of Interest Disclosure

The authors declare no conflict of interest.

Approval Statement

Departmental approval for this case report was obtained from the Department of Gynaecology and Obstetrics, Ayub Medical College.

Patient Consent Statement

Written informed consent for publication of this case report and the associated clinical information was obtained from the patient and her legal guardian.

Permission to Reproduce Material from Other Sources

Not applicable.

Conflicts of Interest

The authors declare no conflicts of interest

References

1. Reid G, Lynch JP, Fishbein MC, Clark NM, Mucormycosis. *Semin Respir Crit Care Med*. 2020;41(01):099–114. 10.1055/s-0039-3401992.
2. Singh AK, Singh R, Joshi SR, Misra A. Mucormycosis in COVID-19: A systematic review of cases reported worldwide and in India. *Diabetes Metabolic Syndrome Clin Res Reviews*. 2021;15(4):102146. 10.1016/j.dsx.2021.05.019.
3. Pasquier G. COVID-19-associated mucormycosis in India: Why such an outbreak? *J De Mycol Médicale*. 2023;33(3):101393. 10.1016/j.mycmed.2023.101393.
4. Skiada A, Drogari-Apiranthitou M, Pavleas I, Daikou E, Petrikkos G. Global Cutaneous Mucormycosis: A Systematic Review. *J Fungi*. 2022;8(2):194. 10.3390/jof8020194.
5. Sobel JD. Vaginal mucormycosis: a case report. *Infect Dis Obstet Gynecol*. 2001;9(2):117–8. 10.1155/s1064744901000205.
6. Menu E, Filori Q, Dufour JC, Ranque S, L'Ollivier C. A repertoire of clinical Non-Dermatophytes moulds. *J Fungi*. 2023;9(4):433. 10.3390/jof9040433.

7. Skiada A, Pavleas I, Drogari-Apiranthitou M. Epidemiology and Diagnosis of Mucormycosis: An update. *J Fungi*. 2020;6(4):265. 10.3390/jof6040265.
8. Ribes JA, Vanover-Sams CL, Baker DJ. Zygomycetes in human disease. *Clin Microbiol Rev*. 2000;13(2):236–301. 10.1128/cmr.13.2.236.
9. Cornely OA, Alastruey-Izquierdo A, Arenz D, et al. Global guideline for the diagnosis and management of mucormycosis: an initiative of the European Confederation of Medical Mycology in cooperation with the Mycoses Study Group Education and Research Consortium. *Lancet Infect Dis*. 2019;19(12):e405–21. 10.1016/s1473-3099(19)30312-3.
10. Saliba F, Dupont B. Renal impairment and Amphotericin B formulations in patients with invasive fungal infections. *Med Mycol*. 2008;46(2):97–112. 10.1080/13693780701730469.
11. Jeong W, Keighley C, Wolfe R, et al. The epidemiology and clinical manifestations of mucormycosis: a systematic review and meta-analysis of case reports. *Clin Microbiol Infect*. 2018;25(1):26–34. 10.1016/j.cmi.2018.07.011.
12. Gagnier JJ, Kienle G, Altman DG, et al. The CARE guidelines: consensus-based clinical case reporting guideline development. *BMJ Case Rep*. 2013;2013:bcr2013201554. 10.1136/bcr-2013-201554.
13. Paavonen J, Miettinen A, Heinonen PK, et al. Serum CA 125 in acute pelvic inflammatory disease. *BJOG Int J Obstet Gynecol*. 1989;96(5):574–9. 10.1111/j.1471-0528.1989.tb03259.x.
14. Meden H, Fattahi-Meibodi A. CA 125 in benign gynecological conditions. *Int J Biol Mark*. 1998;13(4):231–7. 10.1177/172460089801300411.
15. Ghuman SS, Sindhu P, Buxi TBS, et al. CT appearance of gastrointestinal tract mucormycosis. *Abdom Radiol*. 2020;46(5):1837–45. 10.1007/s00261-020-02854-3.
16. Wilson W, Ali-Osman F, Sucher J, Shirah G, Mangram A. Invasive fungal wound infection in an otherwise healthy trauma patient (Mucor Trauma). *Trauma Case Rep*. 2019;24:100251. 10.1016/j.tcr.2019.100251.

Figures

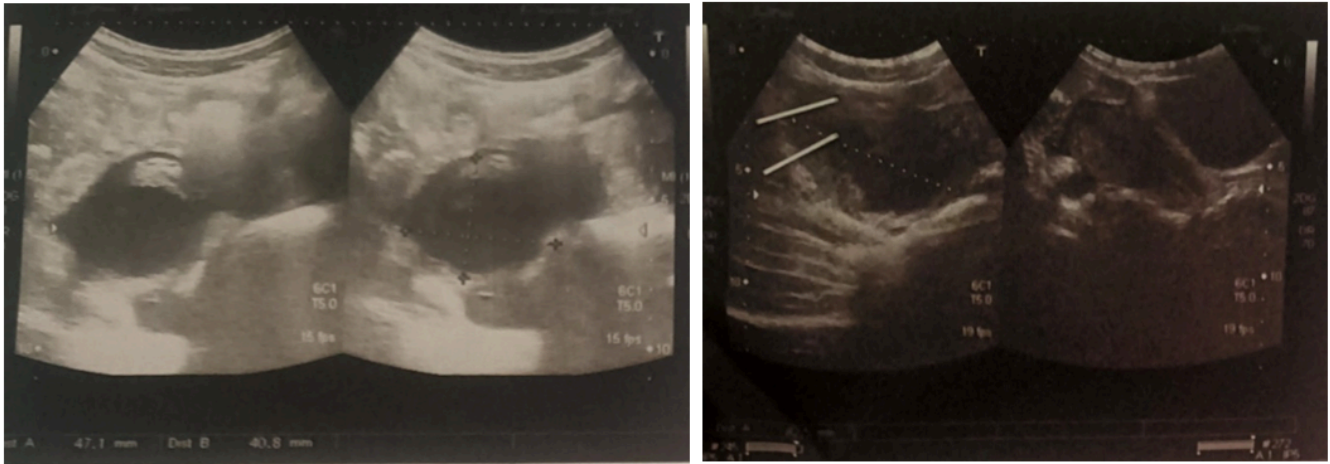


Figure 1

Figure 1.1: Baseline Transabdominal Ultrasound. Figure 1.2: Pre-operative Ultrasound Demonstrating Aggressive Progression

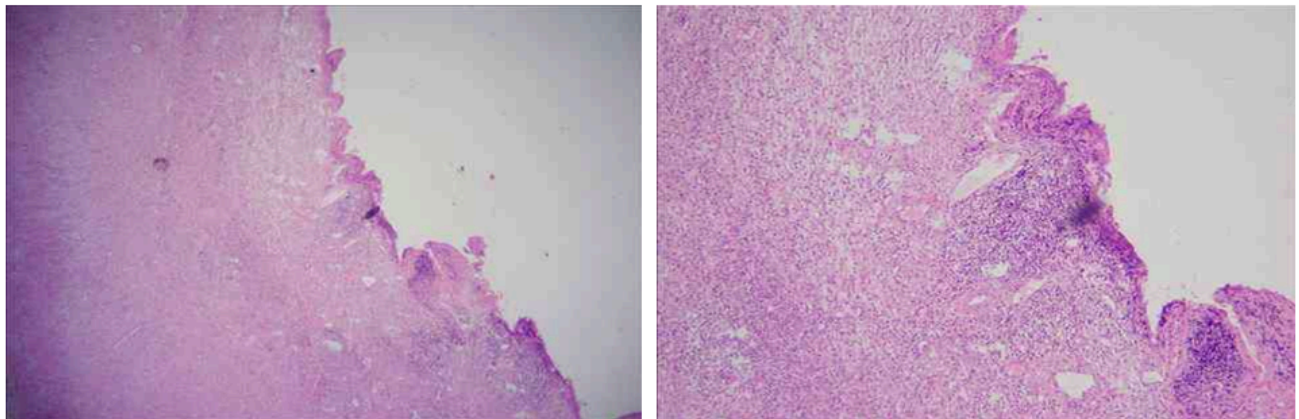


Figure 2

Figure 2A & 2B: Histopathology of the right ovarian tissue (H&E stain). (A) and (B) show different views of the ovarian tissue with extensive abscess formation and severe fungal infection. These findings, characterized by tissue destruction and inflammatory infiltration, were essential in confirming the diagnosis of tubo-ovarian mucormycosis

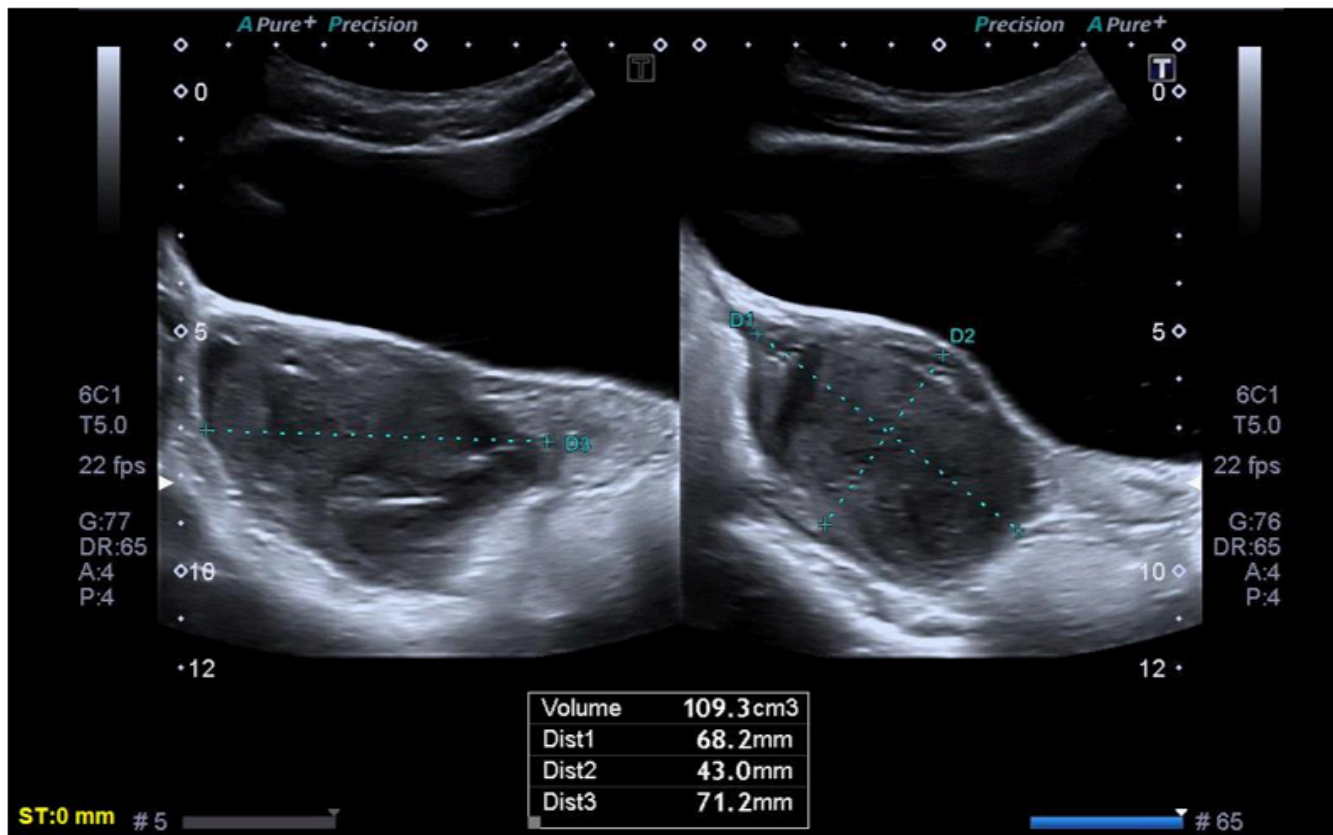


Figure 3

Figure 3.1 Transabdominal ultrasound (post-operative) showing a large, heterogeneous focal area in the right adnexa measuring **68 x 43 x 71 mm** with a calculated volume of **109.3 cm³**. This finding likely represents a post-operative hematoma or a residual/recurrent tubo-ovarian complex cyst following the diagnosis of mucormycosis

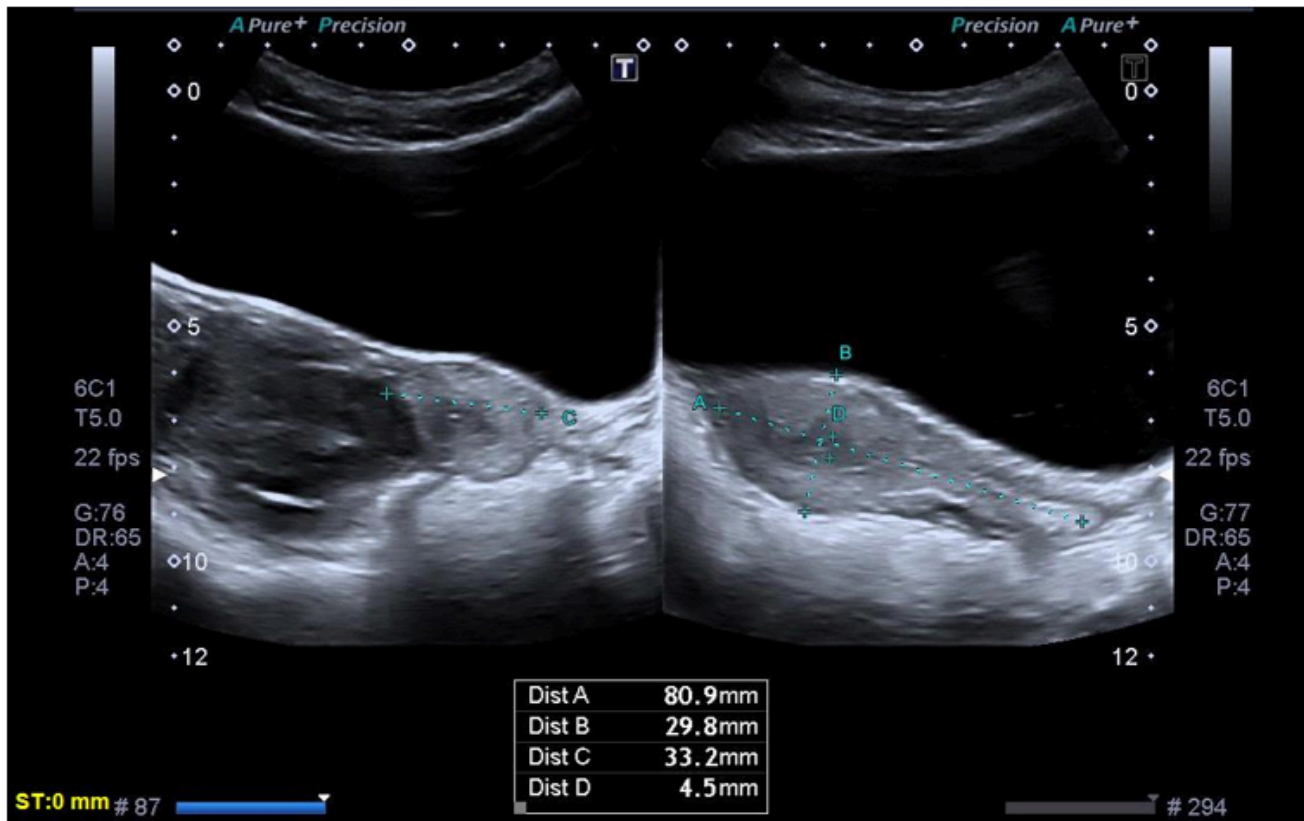


Figure 4

Figure 3.2 Longitudinal ultrasound scan documenting an 80.9 mm uterus with a normal myometrial echotexture and a central endometrial echo of 4.5 mm, providing anatomical orientation relative to the adjacent right adnexal mass

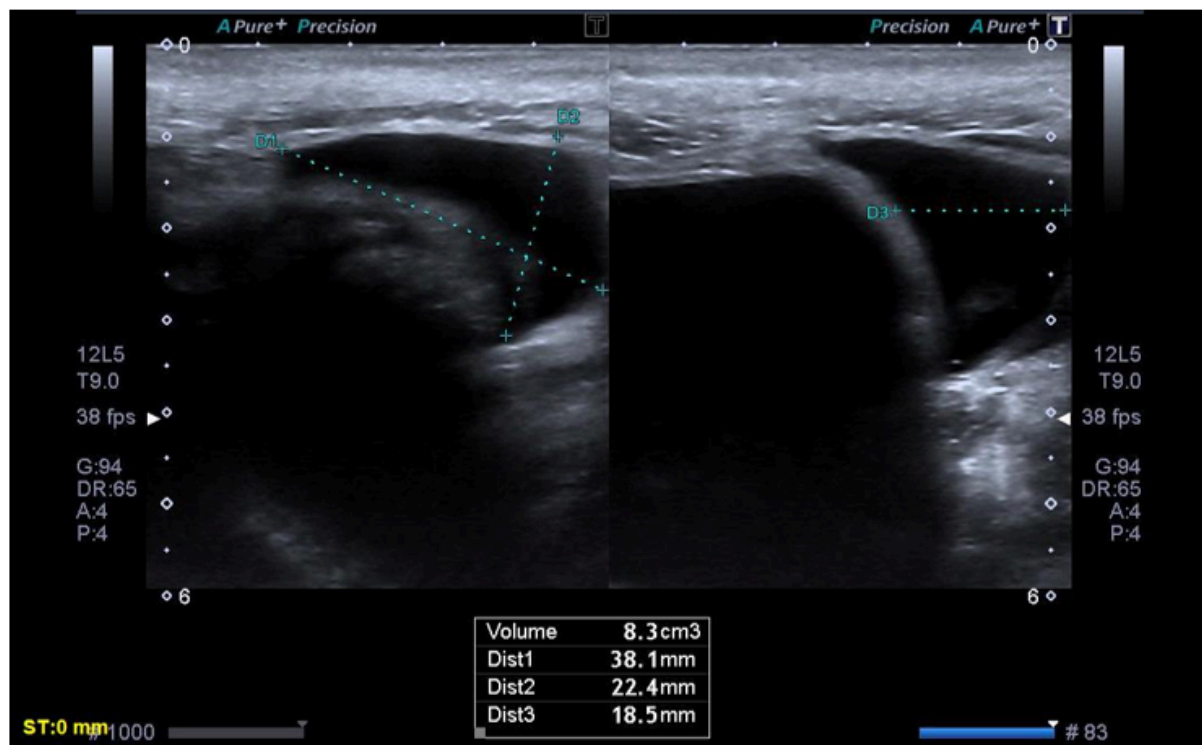


Figure 5

Figure 3.3 Sonographic evidence of mild abdominal ascites, showing a pocket of inflammatory fluid measuring 8.3 ml in the left iliac fossa

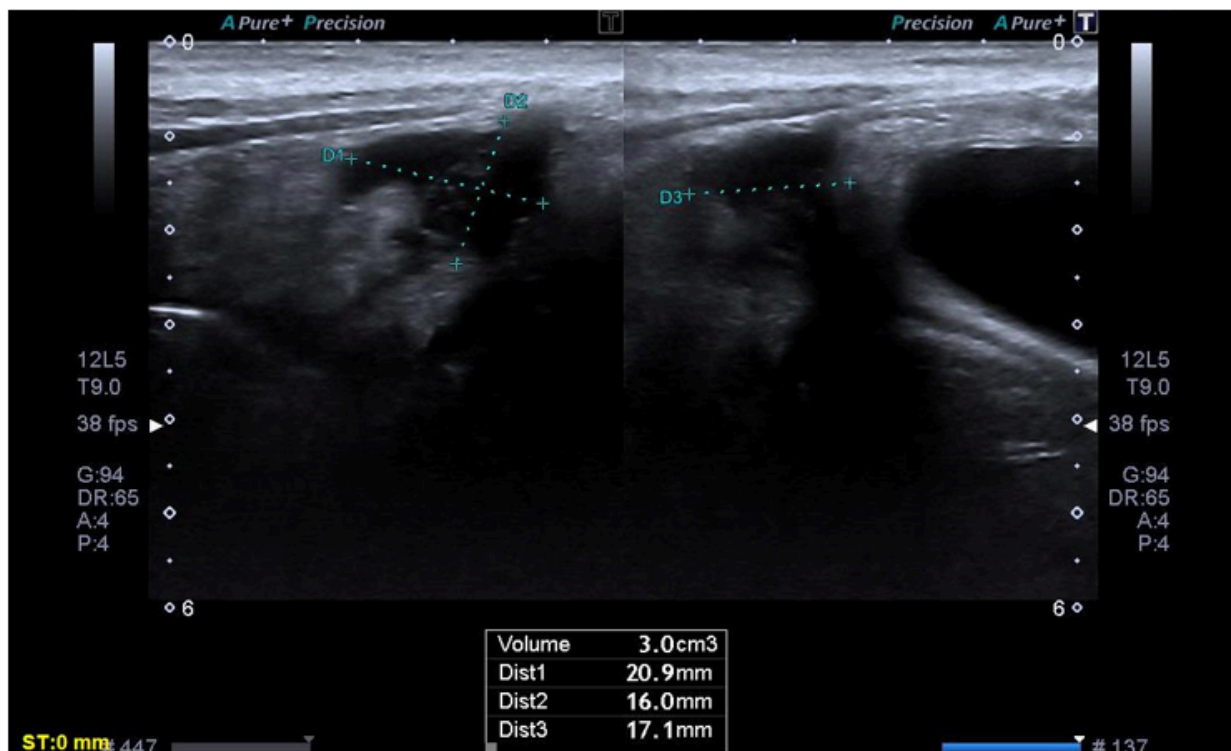


Figure 6

Figure 3.4 Additional inflammatory fluid pocket measuring 3.0 ml identified in the right iliac fossa, consistent with the patient's severe pelvic infection and recent laparotomy



Figure 7

Figure 4. Follow-up ultrasound demonstrating a persistent 110 ml complex right adnexal mass