

## Case Report

# Abdominal Tuberculosis in a Female Inguinal Hernial Sac: A Rare and Atypical Presentation

Panchanan Naik<sup>1\*</sup>, Rabi Narayana Mishra<sup>2</sup>, Bimal Krushna Panda<sup>3,4</sup>, Satyabrata Meher<sup>4</sup>

<sup>1</sup>Senior Surgeon, Ex-ADMO, District Headquarter Hospital, Sambalpur, Modipara, Sambalpur, Odisha, India

<sup>2</sup>Medical Officer I/C, CHC, Attabira, Bargarh, Odisha, India

<sup>3</sup>Department of Anesthesia, VIMSAR, Burla, Sambalpur, Odisha, India

<sup>4</sup>Multi-disciplinary Research Unit, (DHR, MHFW, GoI), VIMSAR, Burla, Sambalpur, Odisha, India

## Abstract

**Background:** Tuberculosis (TB) remains a major health burden in India, with extrapulmonary forms being common. However, isolated tubercular involvement of an inguinal hernial sac is extremely rare, with very few cases reported globally.

**Case Presentation:** We present a 37-year-old Indian female with a non-tender, non-reducible left inguinal swelling present for four months. She had a history of tubo-ovarian TB. Imaging suggested a cystic lesion, and aspiration yielded purulent fluid. Intraoperatively, the hernial sac was thickened and studded with tubercles. ADA levels were markedly elevated (223.6 U/L), and histopathology confirmed tuberculous granulomatous inflammation. The sac was excised, and Bassini's repair was performed. The patient had a smooth recovery, with no signs of recurrence observed during the 24-month follow-up.

**Conclusion:** This rare presentation highlights the importance of considering TB in atypical hernia cases in endemic areas. Histopathological confirmation is crucial. Surgical repair with concurrent anti-tubercular therapy can ensure favourable outcomes and prevent complications.

**Keywords:** Abdominal Tuberculosis; Inguinal Hernia; Tubercular Hernial Sac; Extrapulmonary Tuberculosis

## Abbreviations

ADA: Adenosine Deaminase; ATT: Anti Tubercular Therapy; TB: Tuberculosis; ESR: Erythrocyte Sedimentation Rate; WBC: White Blood Cell; RBC: Red Blood Cell; TLC: Total Lymphocyte Count

## Introduction

Tuberculosis (TB) continues to be a major public health concern globally, particularly in developing countries like India, where both pulmonary and extrapulmonary forms of the disease remain highly prevalent. Among the extrapulmonary forms, abdominal tuberculosis is one of the most common presentations, accounting for 11% to 16% of all extrapulmonary TB cases [1,2]. Abdominal TB may affect the gastrointestinal system, lymph nodes, peritoneum and solid organs, including the liver and spleen. However, tubercular involvement of a hernial sac is extremely rare and often missed during preoperative evaluation [3,4].

Inguinal hernia is among the most commonly observed disorders in general surgical practice. The hernial sac typically contains omentum, bowel loops, or other intra-abdominal structures. In TB-endemic regions, the presence of tuberculosis within a hernial sac, although uncommon, should not be overlooked—especially when

intraoperative findings reveal abnormal features such as thickened sac walls, adhesions, straw-colored or purulent fluid, or tuberculous nodules [5,6].

Reports in the literature documenting isolated abdominal TB within inguinal hernias are scarce. A few case reports have described peritoneal or omental tuberculosis discovered incidentally during hernia surgery, particularly when there is a prior history of tuberculosis or atypical clinical signs [7,8]. This underscores the importance of maintaining a high index of suspicion, especially in patients with prior TB history or inconclusive imaging findings.

In this report, we present a rare case of a 37-year-old female with a tuberculous lesion localized within a left inguinal hernial sac, with a prior history of genital tuberculosis. This case highlights the diagnostic challenges and surgical considerations in managing such atypical presentations, as well as the importance of histopathological and biochemical confirmation for timely anti-tubercular therapy initiation.

## Case Presentation

A 37-year-old female presented with a non-tender, cystic swelling in the left inguinal region, measuring 7.5 cm × 4 cm, persistent for approximately 4 months. The swelling was non-reducible, and the transillumination test was hazy. A provisional diagnosis of inguinal endometriosis or a lymphatic cyst was made.

The patient had a history of left tubo-ovarian tuberculosis, managed surgically and followed by a 9-month course of Anti-Tubercular Therapy (ATT) two years prior.

Routine hematological investigations were within normal limits. ESR was 5 mm/hr. Ultrasonography revealed a left inguinal cystic lesion, with differential diagnoses including abscess or hematoma. Aspiration of the cystic swelling yielded opaque pyogenic fluid.

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\***Corresponding author:** Panchanan Naik, Senior Surgeon, Ex-ADMO, District Headquarter Hospital, Sambalpur, Modipara, Sambalpur, Odisha-768002, India

Laboratory analysis revealed: WBC: 20.7 (109/L), RBC: 20–25/HPF, TLC: 28,200 cells/cc (predominantly polymorphonuclear cells and lymphocytes), Glucose: 116 mg%, Total protein: 14.6 g%.

### Intraoperative findings

Exploration revealed a thickened, adherent sac wall, containing 100 ml to 150 ml of dirty fluid. The sac wall was studded with tubercles, particularly dense toward the neck, which communicated with the abdominal cavity. The operative diagnosis was tubercular inguinal hernia. Fluid was sent for Adenosine Deaminase (ADA) testing, and the sac wall was submitted for histopathological examination (Figure 1A and 1B).

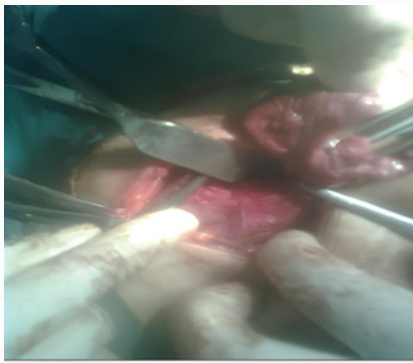


Figure 1A: Intra operative picture of inguinal hernia.

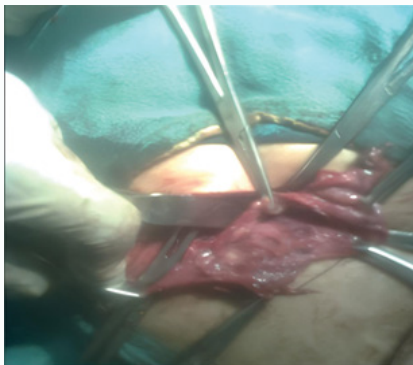


Figure 1B: Intra operative picture of inguinal hernia.

### Surgical management

Adhesiolysis and dissection up to the neck of the sac were performed. The sac was excised, and Bassini's repair was done using Prolene No 1. The wound was closed in layers. The postoperative recovery was unremarkable, with sutures excised on the 14<sup>th</sup> day. The patient had a smooth recovery, with no signs of recurrence or complications observed during the 24-month follow-up.

### Diagnostic results

ADA Activity: 223.6 U/L (suggestive of TB) and Histopathology: Tuberculous granulomatous lesion.

### Discussion

Tuberculosis, particularly abdominal TB, remains prevalent in India and can involve various intra-abdominal sites [1-4]. Inguinal hernia is a common surgical condition, with the omentum frequently forming part of the hernial content. However, tuberculous

involvement of the hernial sac is rarely reported. A recent case report described a 32-year-old Ethiopian woman with abdominal tuberculosis presenting as an inguinal hernia [9]. In one autopsy series, Pimparkar et al. found abdominal tuberculosis in 3.72% of cases [4]. Tuberculous involvement of a hernial sac can mimic endometriosis, lymphatic cysts, or abscesses, often complicating diagnosis. Typical intraoperative findings suggesting tubercular etiology include: Thickened sac walls, Straw-colored or purulent fluid, Omental thickening, Tubercles on sac or omentum. Such findings necessitate histopathological confirmation, especially in patients with a history of tuberculosis [3,5,7]. The role of mesh repair in tubercular hernia is still debated. However, some studies report successful meshoplasty with concurrent ATT without complications [3]. In this case, Bassini's tissue repair was preferred due to active infection.

### Conclusion

In endemic areas, abdominal tuberculosis should be considered in unusual hernial sac presentations. Biopsy is essential for diagnosis confirmation, especially when sac contents are atypical. Hernia repair whether by tissue or mesh technique can be safely performed with concurrent anti-tubercular treatment. Timely diagnosis and suitable surgical intervention help prevent complications and improve outcomes.

### Consent for Publication

Written informed consent was obtained from the patient for surgery and publication of the Case Report, and any accompanying images. A copy of the written consent is available for perusal by the Editor-in-Chief of this journal.

### Competing Interests

The authors declare that they have no competing interests

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