



Abdominal Tuberculosis in an Inguinal Hernia: A Rare Case Report

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Abstract: Abdominal tuberculosis is a form of extrapulmonary tuberculosis that can involve various intra-abdominal organs. Tuberculosis involvement in an inguinal hernia is a rare condition that can pose challenges for both diagnosis and management. This case report aims to describe the manifestations of abdominal tuberculosis in a patient with an inguinal hernia. We reported a 54-year-old male presented with complaints of pain in the right groin, starting one day prior to hospital admission. A lump had been present for two years—particularly during physical activity—and would reduce upon resting. The patient had a history of pulmonary tuberculosis and had completed a full course of anti-tuberculosis medication. He subsequently underwent hernioplasty. Intraoperative findings revealed a hernia sac containing small bowel with mesenteric hyperemia and approximately 20 mL of peritoneal fluid. Acid-fast bacilli (AFB) examination of the peritoneal fluid using Ziehl-Neelsen staining yielded a 3+ result. Anti-tuberculosis therapy was initiated on the third postoperative day. Two weeks post-surgery, the surgical wound showed no signs of infection, and there were no complaints regarding the digestive or respiratory systems. The patient attended regular follow-up appointments at the DOTS clinic. In conclusion, abdominal tuberculosis involving an inguinal hernia is a rare condition that should be considered in patients with a history of tuberculosis and unusual intraoperative findings. Microbiological examination of peritoneal fluid and histopathological analysis of the affected tissue can assist in establishing the diagnosis. Management involving surgery intervention combined with anti-tuberculosis therapy can be implemented based on the patient's clinical condition.

Keywords: abdominal tuberculosis; inguinal hernia; hernioplasty; acid-fast bacilli

INTRODUCTION

Tuberculosis remains endemic in many countries. This may be linked to socioeconomic factors such as crowded living conditions, homelessness, substance abuse, and immigration from endemic regions.¹

Abdominal tuberculosis is a relatively common form of extrapulmonary tuberculosis, yet it presents significant challenges regarding diagnosis and management. It can affect various structures within the abdominal cavity, including the gastrointestinal tract, peritoneum, mesenteric lymph nodes, and solid organs such as the liver and spleen.^{2,3}

Inguinal hernia is a common condition characterized by the protrusion of abdominal contents—such as the intestine—through a weak point in the abdominal wall, specifically in the inguinal region. Clinically, patients may present with a visible bulge in the groin area; this bulge becomes more prominent during activities such as lifting heavy objects or coughing. Surgery is the primary treatment to prevent complications like bowel obstruction or strangulation. To date, few cases of abdominal tuberculosis associated with abdominal hernia have been reported in the English-language literature.⁴ Therefore, we report an unusual case of inguinal hernia in an adult patient with abdominal tuberculosis in Ratatotok, North Sulawesi.

CASE REPORT

A 54-year-old male presented with a painful lump in the right groin that had been present for one day prior to hospital admission. The lump had first been noticed two years earlier; it would protrude during physical activity and retract when the patient rested. The patient had a history of pulmonary tuberculosis treatment, which had been completed one year prior. No signs of pulmonary tuberculosis are currently observed. Upon admission, vital signs were within normal limits. Physical examination revealed a 4x3 cm lump in the right inguinal region with minimal tenderness (Figure 1). Laboratory results showed a leukocyte count of 16,720/mm³, with other parameters within normal limits. A chest X-ray showed findings consistent with old pulmonary tuberculosis (Figure 2). Ultrasonography suggested a scrotal hernia accompanied by a minimal right-sided hydrocele (Figure 3). The patient subsequently underwent hernioplasty. Intraoperative findings revealed a hernia sac containing small bowel with hyperemia along the mesentery (Figure 4) and approximately 20 cc of peritoneal fluid. A sample of the peritoneal fluid was collected and tested for acid-fast bacilli (AFB) using the Ziehl-Neelsen staining technique, yielding a 3+ result (Figure 5). The patient subsequently commenced anti-tuberculosis treatment prescribed by the Internal Medicine department, starting on the third postoperative day. Two weeks post-surgery, the patient returned for a follow-up; the surgical wound was dry, with no signs of inflammation in the area. There were no complaints regarding the digestive or respiratory systems. The patient subsequently continued with routine follow-up visits at the DOTS clinic.



Figure 1. Right inguinal region has a lump measuring 4x3 cm accompanied by minimal pain



Figure 2. Chest X-ray showing findings of old pulmonary tuberculosis



Figure 3. Ultrasonography findings suggest a scrotal hernia accompanied by a minimal right-sided hydrocele



Figure 4. Intraoperative findings revealed a hernia sac containing small bowel with hyperemia along the mesentery and approximately 20 cc of peritoneal fluid

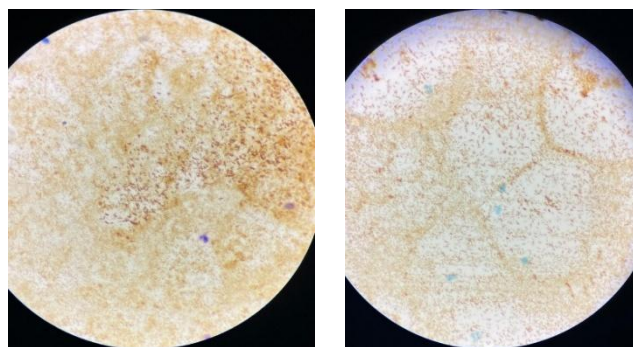


Figure 5. Acid-fast bacilli (AFB) examination of peritoneal fluid using the Ziehl-Neelsen staining technique, showing a 3+ result

DISCUSSION

Mycobacterium tuberculosis is the primary cause of tuberculosis in humans, resulting in high morbidity and mortality rates in developing countries, particularly in South Asia. Approximately 25% of the global population is infected with latent tuberculosis. Extrapulmonary tuberculosis accounts for 20% of all tuberculosis cases.⁵

Abdominal tuberculosis is a relatively common form of the disease, comprising about 5 percent of all tuberculosis cases worldwide. It can affect various sites, including the peritoneum, esophagus, stomach, intestinal tract, hepatobiliary system, pancreas, perianal area, and lymph nodes. Abdominal tuberculosis can result from the reactivation of a latent tuberculosis infection or the ingestion of mycobacteria through unpasteurized milk or undercooked meat.⁶

The most common symptoms include fever, abdominal pain, abdominal distension, altered bowel habits, weight loss, and—in rare instances—gastrointestinal bleeding. Conditions such as ulcerative colitis, Crohn's disease, gastrointestinal malignancy, peritoneal carcinomatosis, and sarcoidosis should be considered in the differential diagnosis.⁷ Imaging studies, such as CT scans and abdominal ultrasonography (USG), typically reveal bowel wall thickening, ascites, and lymphadenopathy.⁸ Peritoneal fluid analysis is a minimally invasive procedure useful for diagnosing abdominal tuberculosis, particularly the extraluminal form.⁹ Additionally, biopsy specimens from affected organs can be used to diagnose abdominal tuberculosis.⁶ In this patient, the only complaint is a lump accompanied by pain in the right groin. The lump appears during physical activity and retracts when at rest. No other gastrointestinal disturbances are noted. An ultrasound examination suggests a scrotal hernia accompanied by a minimal right-sided hydrocele.

Abdominal tuberculosis presenting as an inguinal hernia is extremely rare.^{10,11} Chronic abdominal tuberculosis can weaken the abdominal wall layers, potentially leading to the development of an inguinal hernia. Adhesions resulting from inflammation—triggered by numerous miliary nodules situated between the small intestine and the internal inguinal ring—led to incarceration and intestinal obstruction.¹⁰

Tuberculous involvement of the hernia sac can mimic endometriosis, lymphatic cysts, or abscesses, often complicating the diagnosis. Characteristic intraoperative findings pointing to a tuberculous etiology include thickening of the sac wall, straw-colored or purulent fluid, omental thickening, and the presence of tubercles on the sac or omentum. These findings require laboratory and histopathological confirmation, particularly in patients with a history of tuberculosis.¹² In this case, the patient had a history of pulmonary tuberculosis; intraoperative findings revealed a hernia sac containing small bowel with hyperemia along the mesentery and approximately 20 cc of peritoneal fluid. The peritoneal fluid subsequently tested positive (3+) for acid-fast bacilli (AFB) using the Ziehl-Neelsen staining technique.

The role of using a mesh in the management of hernias in the presence of tuberculosis remains a subject of debate, primarily due to the risk of mesh infection.¹³ However, several studies have reported successful hernioplasty procedures combined with anti-tuberculosis therapy, with no complications observed.^{4,12} Other studies suggest initiating anti-tuberculosis treatment first, followed by a herniorrhaphy procedure.¹⁴ In another study, patients presenting with incarcerated hernias and abdominal tuberculosis underwent a herniotomy (first operation), followed by a 6-month course of anti-tuberculosis treatment; a mesh-based repair (hernioplasty) was subsequently performed after one month of anti-tuberculosis therapy (second operation).¹⁰ In pediatric cases involving abdominal tuberculosis accompanied by an acute abdomen, a two-stage surgical approach is recommended.¹⁵ In the present case, the patient underwent a hernioplasty (as one stage surgical), with anti-tuberculosis treatment initiated on the third postoperative day. At a two-week follow-up, the surgical wound was dry, with no signs of inflammation in the operative area. The patient reported no gastrointestinal or respiratory complaints. The patient has since continued with routine follow-ups at the DOTS (Directly Observed Treatment, Short-course) clinic.

CONCLUSION

Abdominal tuberculosis involving an inguinal hernia is a rare condition that poses a diagnostic challenge, as its clinical presentation can mimic that of a complicated inguinal hernia. In patients with a history of tuberculosis, unusual intraoperative findings—such as peritoneal fluid or inflammatory changes in the bowel and mesentery—should raise suspicion of abdominal tuberculosis involvement. Microbiological analysis of peritoneal fluid and histopathological examination of the affected tissues play a crucial role in confirming the diagnosis. Management may involve hernioplasty in cases requiring surgical intervention, accompanied by adequate antitubercular therapy. This patient underwent a hernioplasty, and antituberculosis therapy was initiated on the third postoperative day. During follow-up, the surgical wound was found to be dry, with no signs of inflammation in the area, and no reported complaints related to the digestive or respiratory systems.

Conflict of Interest

The author declares no conflict of interest related to this study.

Author Contributions

All authors approved the final version of the manuscript. Moreover, the authors declare that no AI-assisted technologies were used in the writing of this manuscript.

REFERENCES

1. Yefta R. Systematic review tentang abdominal tuberculosis. *Communnity Dev J*. 2025;6(1):1363-70. Doi: <https://doi.org/10.31004/cdj.v6i1.42552>
2. Das CJ, Rednam N, Vora Z, Aggarwal A, Chandrashekhara SH, Kundra V. Abdominal visceral tuberculosis: a malignancy mimic. *Abdominal Radiology*. 2023;48(8):2705–15. Doi: <https://doi.org/10.1007/s00261-023-03939-5>
3. Shen Y, Fang L, Ye B, Yu G. Meta-analysis of diagnostic accuracy of nucleic acid amplification tests for abdominal tuberculosis. *PLoS ONE*. 2023;18(11):e0289336. Doi: <https://doi.org/10.1371/journal.pone.0289336>
4. Tu YH, Huang WC, Lin WT, Fu JT, Hung SC. Incidental found tuberculous peritonitis during hernioplasty. *Journal of Surgical Case Reports* 2025;5. Doi: <https://doi.org/10.1093/jscr/rjaf328>
5. Hussain S, Khan FN, UIAin AN, Shahid, M, Begum I, Javed T. Identifying abdominal TB: a diagnostic challenge—a case report. *Egypt J Intern Med*. 2025;37(1):161. Doi: <https://doi.org/10.1186/s43162-025-00555-1>
6. Wellmann MH, Tariq HA, de Jager-Wood C. Case report demonstrating abdominal tuberculosis presenting as an irreducible para-umbilical hernia. *Int J Surg Case Rep*. 2020;75:75–7. Doi: <https://doi.org/10.1016/j.ijscr.2020.09.004>
7. Dhali A, Das K, Dhali G, Ghosh R, Sarkar A, Misra D. Abdominal tuberculosis: clinical profile and outcome. *Int J Mycobacteriology*. 2021;10(4):414–20. Doi: https://doi.org/10.4103/ijmy.ijmy_195_21
8. Sampath A, Mani S. Diagnostic evaluation and management of abdominal tuberculosis. *Indian J Tuberc*. 2025;72(4):S7–S11. Doi: <https://doi.org/10.1016/j.ijtb.2025.02.008>
9. Di Buono G, Romano G, Amato G, Barletta G, Romano G, Adelfio N, et al. Surgical management of complicated abdominal tuberculosis: the first systematic review—new treatments for an ancient disease and the state of the art. *J Clin Med*. 2024;13(16):4894. Doi: <https://doi.org/10.3390/jcm13164894>
10. Putra MDP, Putra DSA. (2022). Management of incarcerated inguinal hernia associated with abdominal tuberculosis in Muhammadiyah Babat Hospital, Indonesia. *Int Aca Rea Jr Surg*. 2022;2(3):26-9. Doi: <https://doi.org/10.47310/iarjs.2022.v02i03.006>
11. Yildirim S, Yigit Y, Jabeen A, Mohamed EH, Alkahlout BH. A case of intraabdominal tuberculosis masquerading as inguinal hernia: a diagnostic challenge. *J Surg Case Rep*. 2024;11:1-3. Doi: <https://doi.org/10.1093/jscr/rjae741>
12. Naik P, Mishra RN, Panda BK, Meher S. Abdominal tuberculosis in a female inguinal hernial sac: a rare and atypical presentation case report. *J Surg Surgic Case Rep*. 2025;6(1):1052. Available from: <https://www.medtextpublications.com/open-access/abdominal-tuberculosis-in-a-female-inguinal-hernialnbpsac-a-1820.pdf>
13. Srikanth MVVS, Mohan A, Singh D, Kushwaha A, Rathore YS, Ranjan P, et al. Laparoscopic management of tubercular mesh infection: two case reports from a tertiary center in North India with review of literature. *World Journal of Laparoscopic Surgery*. 2025;18(3):182–6. Doi: <https://doi.org/10.5005/jp-journals-10033-1662>
14. Oualili I, Khattala K, Balde FB, Boutahar A, Mahmoudi A, Bouabdellah Y. Diagnosis of peritoneum tuberculosis during a herniotomy. *Open Journal of Pediatrics*. 2020;10(04):661–5. Doi: <https://doi.org/10.4236/ojped.2020.104068>
15. Cotignola L, Reusmann A, Rubio M, Paz EG, Ayarzal VH, Barrenechea ME. Tuberculosis: a rare cause of acute abdomen in pediatric patients - surgical considerations. *Journal of Pediatric Surgery Open*. 2023;4:100086. <https://doi.org/10.1016/j.yjps.2023.100086>