

CASE REPORT

PORT SITE TUBERCULOSIS FOLLOWING LAPAROSCOPIC CHOLECYSTECTOMY IN A NON-IMMUNOCOMPROMISED PATIENT: A DIAGNOSTIC CHALLENGE IN ENDEMIC SETTINGS

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Abstract

Introduction: Port site tuberculosis (TB) following laparoscopic surgery is an uncommon but severe complication, harder to diagnose in places endemic for TB where suspicion may be delayed.

Methods: We herein report a case of a previously immunocompetent, 45-year-old woman, who had port site tuberculosis following an uneventful laparoscopic cholecystectomy performed upon her, three months ago.

Results: The patient had a slowly progressing, indurated mass at the port site of the epigastrium, along with constitutional symptoms. Histopathological examination revealed epithelioid granulomas along with caseous necrosis, and acid-fast bacilli were identified by Ziehl-Neelsen staining. The patient had a satisfactory response to conventional anti-tubercular therapy.

Conclusion: Port site tuberculosis should be a part of the differential diagnosis of post-laparoscopic complications of wounds, especially in areas endemic for TB. Early recognition and appropriate treatment are essential for the best possible outcomes.

Keywords: Port site tuberculosis, laparoscopic cholecystectomy, surgical site infection, endemic tuberculosis, diagnostic challenge

BACKGROUND/INTRODUCTION

Laparoscopic cholecystectomy has come to be the standard of practice for symptomatic cholelithiasis due to the minimally invasive nature and low morbidity of the procedure compared to open surgery (1). Complications, albeit rare, can occur, and among these, port site infections can occur, typically as bacterial ones during the early post-operative period (2).

RESULTS

A 45-year-old woman with no notable past medical issues came to our surgical outpatient department complaining of a slowly enlarging, painless mass at her epigastric port site. This developed over two weeks, approximately three months after she had undergone laparoscopic cholecystectomy for symptomatic gallstones.

She had previously undergone a routine laparoscopic cholecystectomy using a standard four-port technique. The surgery lasted 45 minutes and proceeded without any intraoperative complications. Her recovery was smooth, and she was discharged on the first postoperative day.

Three months after surgery, the patient reported the following:

- A firm, non-tender, 3 × 2 cm mass at the epigastric port site
- Low-grade fever around 99.5°F persisting for a week
- Night sweats and a loss of appetite

Port site tuberculosis is a rare post-laparoscopic complication, of which only a few cases are reported in the literature (3,4). Diagnosis becomes more challenging in tuberculosis-endemic countries where suspicion occurs late, leading to misdiagnosis and delayed intervention (5). The following is a case report of the diagnosis and management of port site tuberculosis after laparoscopic cholecystectomy.

- Weight loss of approximately 3 kilograms over the past month
- No respiratory complaints

Physical Examination

Parameter	Finding
General appearance	Mild pallor, no acute distress
Vital signs	Temperature: 99.5°F, BP: 120/80 mmHg, HR: 88 bpm, RR: 18/min
Abdominal examination	Soft, non-tender abdomen with 3×2 cm indurated mass at epigastric port site
Lymph nodes	No palpable lymphadenopathy
Chest examination	Clear breath sounds bilaterally

Laboratory Investigations

Investigation	Result	Reference Range
Hemoglobin	10.2 g/dL	12.0-15.0 g/dL
Total leukocyte count	8,500/ μ L	4,000-11,000/ μ L
Erythrocyte sedimentation rate	45 mm/hr	0-20 mm/hr
C-reactive protein	12 mg/L	<3 mg/L
HIV serology	Negative	-
Mantoux test	18 mm induration	<10 mm (negative)

Ultrasonography revealed a well-circumscribed hypoechoic lesion at the epigastric port site, measuring approximately 3.2×2.1 cm. The presence of internal echoes suggested an underlying inflammatory process.

Cross-sectional imaging confirmed a heterogeneously enhancing mass located in the anterior abdominal wall at the same port site, accompanied by surrounding inflammatory changes. No signs of intra-abdominal fluid collections or lymphadenopathy were observed.

The chest radiograph showed clear lung fields with no evidence suggestive of pulmonary tuberculosis.

Fine needle aspiration cytology of the lesion showed inflammatory cells along with epithelioid

granulomas, prompting an excisional biopsy for definitive diagnosis.

Histology revealed:

- Well-formed epithelioid granulomas with Langhans-type giant cells
- Central areas of caseous necrosis
- Dense chronic inflammatory infiltrates
- Ziehl-Neelsen staining confirmed the presence of acid-fast bacilli

Microbiological Studies

Test	Result
Acid-fast bacilli smear	Positive (2+)
Mycobacterial culture	Mycobacterium tuberculosis complex
GeneXpert MTB/RIF	MTB detected, Rifampicin sensitivity detected

In light of both histopathological and microbiological findings, a diagnosis of port site tuberculosis was established. The patient was initiated on first-line anti-tubercular therapy (ATT) per WHO protocols:

Intensive Phase (2 months):

- Isoniazid 300 mg daily
- Rifampicin 600 mg daily
- Ethambutol 800 mg daily
- Pyrazinamide 1500 mg daily

Continuation Phase (4 months):

- Isoniazid 300 mg daily
- Rifampicin 600 mg daily

Clinical Course and Outcome

Within four weeks of initiating ATT, the patient exhibited marked clinical improvement. The

epigastric mass began to regress, and systemic symptoms such as fatigue and low-grade fever resolved. At the 6-month follow-up, the lesion had completely resolved, with no clinical signs of recurrence.

DISCUSSION

Tuberculosis (TB) of the port site following laparoscopic surgery is an exceptionally rare postoperative complication, with only isolated cases reported worldwide. This condition poses a diagnostic and clinical challenge due to its atypical presentation and delayed onset. The presumed pathogenesis involves hematogenous dissemination of *Mycobacterium tuberculosis* to the site of surgical trauma. This seeding may be facilitated by local tissue injury and inflammatory responses induced during the laparoscopic procedure. Although the patient may appear immunocompetent, subtle or undetected immunosuppression could contribute to the susceptibility. Furthermore, in regions with a high endemic burden of TB, the likelihood of latent infection reactivation is significantly elevated, increasing the risk of such rare manifestations.

Several factors may predispose individuals to this unusual complication. These include residing in or originating from TB-endemic areas, surgical manipulation leading to localized immune disruption,

and the inherently indolent course of tuberculosis, which may delay clinical suspicion and diagnosis. Despite the overall good health of most affected individuals, undiagnosed or latent TB infections can manifest under specific post-surgical conditions.

Diagnosing port site TB is often challenging due to its non-specific and insidious clinical progression. It may present as a persistent or non-healing surgical wound, occasionally mimicking pyogenic infections or malignancies. The lack of acute systemic symptoms and the slow evolution of the lesion often lead to misdiagnosis or delayed recognition. Clinicians must consider port site TB in the differential diagnosis of chronic, non-resolving surgical site lesions, especially in TB-endemic regions.

Differential diagnoses include bacterial infections, which typically have an acute onset with purulent discharge and fever and respond well to conventional antibiotics. Malignancy may present with progressive

lesion growth and firm consistency, necessitating histopathological and immunohistochemical evaluation. Foreign body reactions, often associated with retained suture material or mesh, can cause granulomatous inflammation visible under polarized light microscopy. Actinomycosis, another chronic infection, may manifest with draining sinuses and the presence of sulfur granules, distinguishable via histology and culture.

Management of port site tuberculosis relies heavily on timely recognition and prompt initiation of anti-tubercular therapy (ATT). Most patients respond favorably to pharmacological treatment alone, but surgical excision may be necessary for large, persistent, or non-healing lesions. Close clinical monitoring is essential to evaluate treatment response and identify potential adverse effects of anti-TB medications. Additionally, public health measures, including screening of close contacts, are recommended to prevent further transmission, especially in household or occupational settings.

The prognosis of port site TB is generally favorable when appropriate therapy is administered. Recurrence is rare if the patient completes the full course of ATT. Early diagnosis and a high index of suspicion in atypical postoperative wound presentations are key to preventing complications and ensuring successful outcomes.

CONCLUSION

This case underscores a rare but important diagnosis—port site tuberculosis. Particularly in regions where TB is endemic, clinicians should maintain a high index of suspicion when faced with unexplained postoperative masses. Early diagnosis and guideline-based treatment offer excellent outcomes, emphasizing the need for continued vigilance among surgeons and healthcare providers.

LIMITATION

This report is limited by its single-case design, which restricts broader applicability of the findings.

RECOMMENDATION

Clinicians in TB-endemic regions should maintain a high index of suspicion for port site TB in patients presenting with delayed post-laparoscopic wound complications.

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CONFLICT OF INTEREST

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

LIST OF ABBREVIATIONS

TB – Tuberculosis; ATT – Anti-Tubercular Therapy

FNAC – Fine Needle Aspiration Cytology

CT – Computed Tomography

HIV – Human Immunodeficiency Virus.

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