

Case Report

Chest Wall Hydatid Cyst with Rib Involvement Mimicking a Chest Wall Neoplasm in a Young Woman: A Case Report

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Abstract

Background: Extrapulmonary hydatid disease is uncommon and may mimic a chest wall or rib neoplasm, particularly when osseous destruction is present. **Case presentation:** We present a case of 20-year-old female presented with a gradually progressive left chest wall swelling and intermittent pain. Contrast-enhanced CT showed a multiloculated lesion involving the left sixth rib, with cortical destruction and extension toward the paravertebral and neural foraminal regions. The lesion was initially suspected to represent a neoplastic process based on its radiological features and associated rib destruction. Intraoperative identification of multiple daughter cysts raised suspicion of hydatid disease, subsequently supported by histopathological examination. This case highlights the diagnostic difficulty of extrapulmonary hydatidosis and the importance of considering parasitic disease in atypical chest wall lesions. **Intervention and outcome:** Thoracotomy with cyst excision and resection of the involved rib was performed. Multiple daughter cysts were identified intraoperatively, and histopathology was reported as suggestive of Echinococcus. The postoperative course was uneventful; albendazole 400 mg twice daily was prescribed for 21 days, and the patient was clinically stable at three-month follow-up. **Conclusion:** Hydatid disease should be considered in the differential diagnosis of cystic chest wall or rib lesions with bone destruction in endemic settings. Preoperative recognition is important because cyst rupture or spillage may affect operative planning.

Keywords

Hydatid Disease, Cystic Echinococcosis, Chest Wall, Rib Hydatidosis, Echinococcus, Case Report

1. Introduction

Hydatid disease (cystic echinococcosis) is a zoonotic parasitic infection caused by larval Echinococcus species. The liver and lungs are the most frequently involved organs, whereas osseous and thoracic extrapulmonary involvement is uncommon [1, 6, 9, 10]. Chest wall and rib hydatidosis can be diagnostically challenging because clinical findings are non-specific and imaging may resemble an aggressive primary

chest wall or bone tumor. Published case reports describe rib and chest wall hydatid cysts diagnosed at surgery or by histopathological examination [2-5, 7, 8]. We report a young woman with a left posterior chest wall lesion involving the sixth rib that was interpreted radiologically as a neoplasm and diagnosed intraoperatively as hydatid disease. This case high-

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lights the importance of including hydatid disease in the differential diagnosis before intervention in endemic settings.

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2. Case Presentation

2.1. Patient Information and Clinical Findings

A 20-year-old female presented with a gradually progressive swelling over the left side of the chest, associated with intermittent pain. The swelling was non-tender, and there was no history of discharge.

On examination, an approximately 10 × 12 cm swelling was present over the left chest wall. It was firm, non-mobile, and fixed to the underlying structures. The overlying skin was normal, with no discharge or other obvious local skin changes.

2.2. Diagnostic Assessment

Preoperative radiological and laboratory investigations were performed. The available imaging documentation included high-resolution computed tomography (HRCT) and contrast-enhanced computed tomography (CECT) of the thorax.

On 22 May 2026, CECT of the thorax showed a peripherally enhancing, hypodense, multiloculated/multiseptated lesion in the left posterior intercostal region. The lesion measured approximately 95 × 48 mm, according to the available report. It involved the left sixth rib, with cortical erosion/destruction, and extended medially toward the left paravertebral and neural foraminal regions. No pleural effusion was reported. The radiological impression favored a neoplastic lesion, particularly a malignant neurogenic tumor.

Repeat CECT of the thorax on 3 June 2026 showed irregular destruction of the left sixth rib with a large heterogeneous, multiseptated cystic component measuring approximately 83 × 45 × 63 mm (as recorded in the available report). The lesion abutted the mediastinal pleura and the left lateral wall of the aorta. The reported differential diagnoses included Ewing sarcoma, aneurysmal bone cyst, and giant-cell tumor. The radiological reports therefore favored a neoplastic or primary bone lesion.

After preoperative assessment, the patient was prepared for

exploratory thoracotomy. The imaging findings were reviewed as part of operative planning.

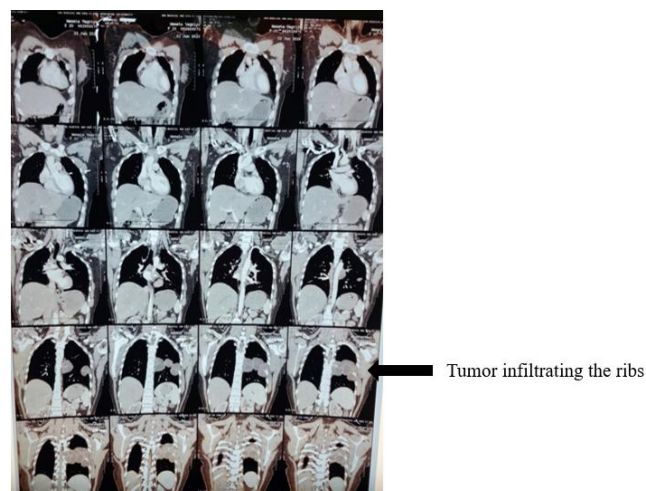


Figure 1. HRCT thorax showing the left posterior chest wall lesion, arrow identifying the lesion and rib erosion.

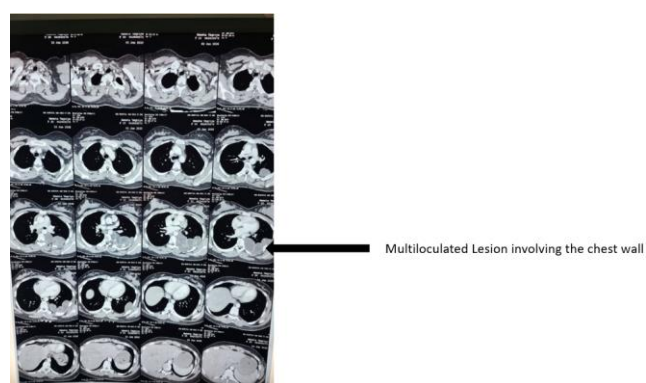


Figure 2. CECT thorax showing the multiloculated lesion involving the left sixth rib, arrow identifying the lesion, cortical destruction, and extension.

2.3. Therapeutic Intervention and Follow-up

In view of the clinical and radiological findings, the patient underwent thoracotomy with excision of the cyst and resection of the involved rib on 10 June 2026. The preoperative working diagnosis was a chest wall neoplasm.

Intraoperatively, the lesion contained multiple daughter cysts, providing a macroscopic clue to hydatid disease. No pleural breach was identified, and no muscle resection was required.

Histopathological examination of the specimen was reported as suggestive of Echinococcus (hydatid disease).

The postoperative course was uneventful. The patient received albendazole 400 mg twice daily for 21 days, as documented in the clinical record.

At three-month follow-up, the patient had completed the prescribed albendazole course and was clinically stable.

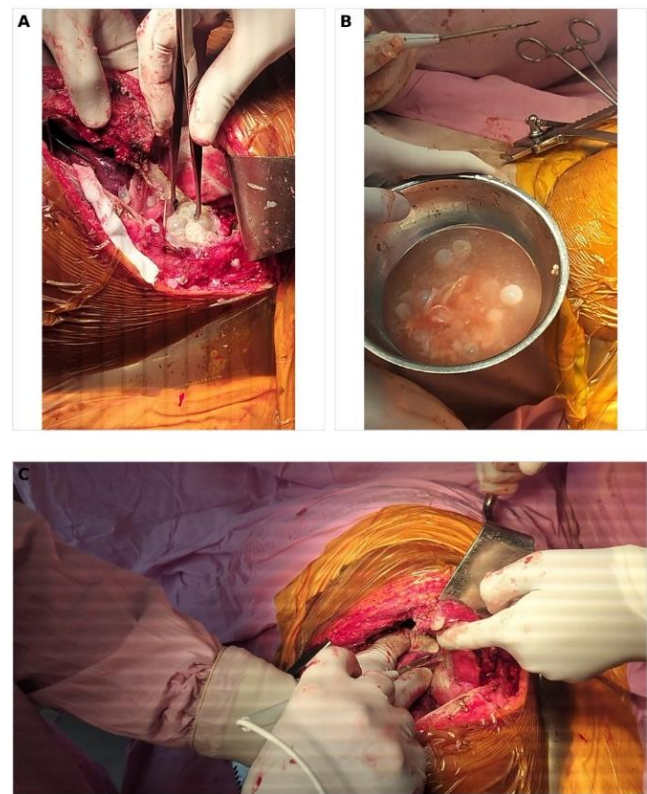


Figure 3. Intraoperative photographs showing the operative field and daughter cysts.

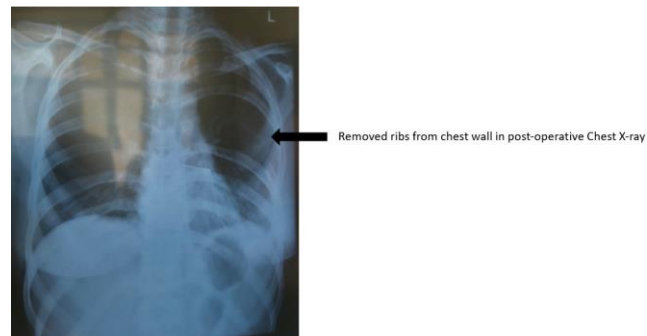


Figure 4. Follow-up chest radiograph, arrow showing the chest wall with removed ribs and good expanded lung.

5. Clinical Timeline

Table 1. Clinical timeline of presentation, investigations, treatment, and follow-up.

Time point	Clinical / Investigational / Treatment event
Initial presentation	20-year-old woman with gradually progressive left chest wall swelling (~10 × 12 cm) and intermittent pain; swelling firm, non-mobile, and fixed to underlying structures; skin normal; no discharge.
11 May 2026	HRCT thorax: multiloculated hypodense lesion along the posterior aspect of the left sixth rib with internal septations/calcification and rib erosion/expansion; differential included aneurysmal bone cyst, giant-cell tumor, and neuro-genic lesion.
22 May 2026	CECT thorax: peripherally enhancing hypodense lesion in the left posterior intercostal region involving the sixth rib, with cortical erosion and extension toward the paravertebral/neural foraminal region; radiological impression favored a

3. Discussion

Hydatid disease is a zoonotic infection caused by Echino-coccus species and most commonly affects the liver and lungs. Musculoskeletal and thoracic extrapulmonary involvement is uncommon [1, 6, 9-11, 13-15]. Rib involvement is particularly rare and may produce destructive osseous changes that mimic a primary bone or chest wall neoplasm [2, 7, 8].

The present case illustrates a clinically important diagnostic problem: a large, firm, fixed chest wall mass with a multiloc-ulated cystic appearance, rib destruction, and paraverte-bral/neural foraminal extension was interpreted radiologically as a neoplastic lesion. The identification of multiple daughter cysts at surgery provided the key macroscopic clue to hydatid disease. Similar diagnostic difficulties have been described in primary chest wall and rib hydatid disease [2-5, 7, 8]. The clin-ical timeline is summarized in Table 1.

Management of thoracic and osseous hydatid disease must be individualized according to the site, extent, and complica-tions of the lesion. Complete surgical removal may be appro-priate for accessible lesions, and antiparasitic therapy may be used as an adjunct. Current WHO guidance and expert con-sensus emphasize tailoring treatment to cyst location and clin-ical context; their recommendations focus principally on hep-atic and pulmonary disease, so management of rare rib in-volvement requires specialist judgment [3, 5, 7, 9, 11, 12].

4. Conclusion

Chest wall hydatid disease with rib involvement is rare and may closely mimic a cystic chest wall or rib neoplasm. In en-demic settings, hydatid disease should remain in the differen-tial diagnosis of a cystic chest wall lesion with osseous de-struction. In this case, the diagnosis became apparent in-traoperatively through identification of daughter cysts and was supported by histopathological examination. Accurate preoperative recognition is important for surgical planning and for minimizing the risk of cyst rupture or spillage.

Time point	Clinical / Investigational / Treatment event
	neoplastic lesion.
03 June 2026	Further CT/chest imaging was reportedly performed as part of preoperative assessment showed irregular destruction of the left sixth rib with associated large heterogeneous-density multiseptate cystic component, size 83x 45x63mm? Ewing sarcoma ? aneurysmal bone cyst, giant-cell tumor.
10.06.2026	Thoracotomy with excision of the cyst and resection of the involved rib. Multiple daughter cysts identified intraoperatively.
Histopathology	Reported as suggestive of Echinococcus (hydatid disease).
Postoperative period	Uneventful recovery. Albendazole 400 mg twice a day for 21 days was given
3-month follow-up	Patient had completed the prescribed albendazole course and was clinically stable.

Abbreviations

CECT	Contrast Enhanced Computed Tomography
CT	Computed Tomography
HRCT	High Resolution Computed Tomography
WHO	World Health Organization

Author Contributions

Mohit Singhal: Conceptualization, Data curation, Formal Analysis, Writing – original draft

Sanjeev Devgarha: Methodology, Supervision, Validation

Anula Sisodia: Formal Analysis, Supervision, manuscript review

Dhruva Sharma: Formal Analysis

Krishna Kumar Mawar: Formal Analysis, Writing – review & editing

Swapnil Panchal: Data curation, Investigation

Utsav Nandwana: Data curation, Formal Analysis

Patient Consent and Ethics

This draft has been anonymized by removing patient name, identifiers, and hospital numbers. Written informed consent was obtained from the patient for publication of this case report and the accompanying clinical images.

Ethical approval was not required for this single-patient case report in accordance with the institutional policy.

Data Availability Statement

The data supporting the findings of this case report are available from the corresponding author upon reasonable request. To protect patient privacy and confidentiality, the data are not publicly available.

Conflicts of Interest

The authors declare no conflicts of interest.

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