Afghanistan Journal of Infectious Diseases
AJID
https://ajid.ghalib.edu.af/index.php/ajid

2025 Jan 3(1):101-104

Extra-Pulmonary Hydatid Cyst from Afghanistan: A Case Report

Mohammad Sayed Behrad [1], Sayed Hussain Mosawi [2], *Sayed Hussain Amiri [3]

1. *Department of Thoracic and Cardiovascular Surgery, Kabul University of Medical Science, Kabul, Afghanistan*
2. *Medical Sciences Research Center, Ghalib University, Kabul, Afghanistan*
3. *Department of Public Health, Faculty of Medicine, Khatam-Al-Nabieen University, Kabul, Afghanistan*

ARTICLE INFO

Type: Case Report
Received: 2024/10/11
Accepted: 2024/12/22

*Corresponding Author:
E-mail:
amirihussain706@gmail.com

To cite this article: Behrad MS, Mosawi SH, Amiri SH. Extra-Pulmonary Hydatid Cyst from Afghanistan: A Case Report. Afghanistan Journal of Infectious Diseases. 2025 Jan 3(1):101-104. https://doi.org/10.60141/ajid.93

ABSTRACT

Hydatid cysts, caused by the larval stages of *Echinococcus* tapeworms, are a significant parasitic infection primarily affecting the liver and lungs. This case report presents a rare instance of an extrapulmonary hydatid cyst located in the pleural of a 45-year-old housewife female patient from Afghanistan. The patient exhibited symptoms of chest pain, headaches, dizziness, and a dry cough over three years. Diagnostic CT imaging revealed a mass in the right thoracic region. Following thorough surgical preparation, a right posterior-lateral thoracotomy was performed, leading to the excision of the hydatid cyst. Postoperatively, the patient was prescribed albendazole to facilitate cyst degradation. This case underscores the importance of early diagnosis and an integrated treatment approach, combining medical therapy and surgical excision, to improve patient outcomes and manage the complications of hydatid disease effectively.

Keywords: Hydatid Cyst, Case report, Pleural, Afghanistan

Introduction

Hydatid cyst (HC) is a serious, endemic, parasitic disease (1). The larval stages of tape- worms of the genus *Echinococcus* cause human hydatid disease. Cystic echinococcosis, infects humans when the ova, found in dog feces, are swallowed (2). Humans are infected as intermediary carriers when they eat unwashed and uncooked vegetables and swallow the ova of the parasite. After the person digests the contaminated food, the embryo of the parasite is released into the intestinal tract and carried to the liver by the portal circulation. Hydatid cysts are surrounded by the periparasitic host tissue (pericyst) encompassing the endocyst of larval origin. Inside the laminated layer or hyaline membrane, the cyst is covered by a multipotential germinal layer, which gives rise to the production of brood capsules and protoscolices (3).

The most common involved organs are the liver (52%-77%), followed by the lungs (10%-40%). Hydatidosis involves bones in 0.5% to 2% of all cases, with 50% involving the vertebrae (4). Rarely, it affects the pleura, diaphragm, vertebrae, abdominal wall and skeletal muscles less than 1%. Hydatid disease of the pleural is extremely rare (1).

It is a significant disease in some parts of the world, especially in South America, Southern Europe, Australia, New Zealand, Africa, Turkey, India and the Middle East

region. Hydatid cysts can occur with symptoms of pain or mass effect (5). Intrathoracic, pleural hydatid cysts are very rare and their features and management require discussion.

This case report presents a primary intrapleural hydatid cyst. Although it is well known that HC may affect any area of the body, reporting of cases occurring in rare organs is necessary because both presentation and clinical course of the disease differ (1, 6). We aimed to present successful staged management approach in the treatment of a pleural hydatid cyst, in which medical therapy led to cyst degradation, enabling surgical excision.

Case presentation

A 45-year-old housewife woman was admitted to Thoracic and Cardiovascular Diseases Institute, Kabul, Afghanistan with pain on the right side of the chest of one year duration, accompanied by headaches, dizziness and dry cough over three years. She had lived in a rural area and been in contact with sheep and sheep dogs because her family had worked in animal husbandry up to 3 years before. On physical examination, the patient was hemodynamically stable, with a pulse rate of 85 beats/minute, a blood pressure of 110/85 mmHg, and an oral temperature of 37.5 ^{0}C. Percussion dullness was noted in the right side of the chest, with normal percussion in the left side. The patient had a history of cesarean section three years ago, was married, and had four children. Both her parents suffered from diabetes and hypertension. She had a known allergy to diclofenac drugs. Laboratory tests indicated an infection of the urinary tract (UTI).

Computed tomography (CT) showed pedunculated mass in right pleural area (Figure 1).

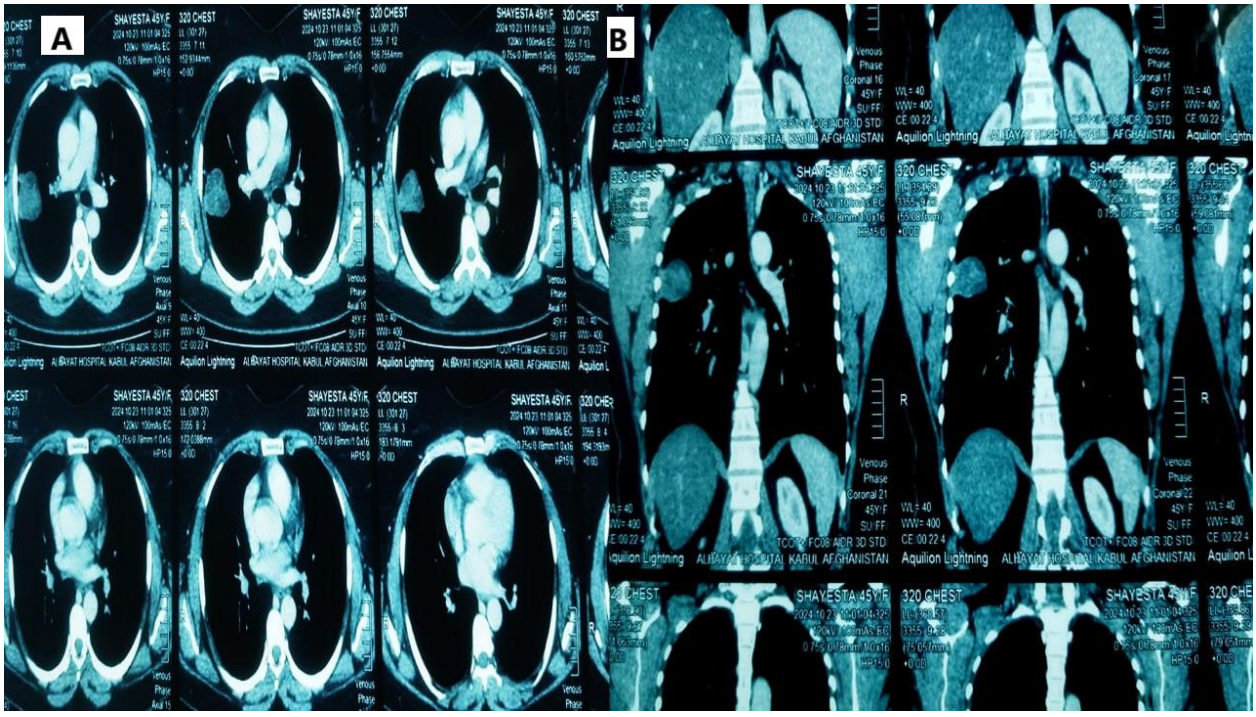

Figure 1: A Coronal, B Axial enhanced chest CT demonstrating hyperdense pedunculated mass along the right pleura.

The patient was posted for right posterior-lateral thoracotomy. After proper preparation, the surgical area was thoroughly sterilized, and general anesthesia was administered. The right pleural cavity was entered and the wound

was irrigated with hypertonic saline. The hydatid cyst was evacuated completely. The cyst wall was then dissected from the adjacent tissue using both blunt and sharp dissection techniques. The collapsed lung then expanded fully, with no significant parenchymal damage or air leaks. The thoracotomy was closed in layers and the patient was transferred to the intensive care unit (ICU) for elective ventilation. After the operation, the patient was prescribed albendazole at a dosage of 400 mg twice daily for a duration of two months.

Discussion

Hydatid cysts, caused by the larval stages of *Echinococcus* tapeworms (2). Primarily affect the liver and lungs, yet they can manifest in extrapulmonary locations, including the chest wall, pleura and ribs (7). This is as a result of the life cycle of the parasite (1). The pathophysiology of hydatid disease involves the ingestion of *Echinococcus* eggs, typically found in contaminated meat or from unwashed fruits, foods, vegetables or water (8). Once ingested, the larvae penetrate the intestinal wall and migrate through the portal circulation to the liver, which acts as the primary filtration organ (9).

Although hydatid cysts usually produce various symptoms, they can be asymptomatic. Intrathoracic extrapulmonary cysts may produce compression symptoms in surrounding vital structures (10). Pleural hydatid cysts fall under the category of extra-pulmonary intrathoracic cysts, alongside those found in the parietal pleura, mediastinum, pericardium, diaphragm, fissures and chest wall (11). Primary pleural hydatidosis manifests as the presence of either a solitary pleural hydatid cyst or as a parasitic pleural effusion. Primary pleural hydatidosis is found in less than 1% of hydatidosis cases (8).

The integration of albendazole and mebendazole postoperatively played a significant role in enhancing patient outcomes by promoting cyst degradation (2), thereby mitigating surgical risks associated with larger cysts. This approach aligns with findings from other studies, which suggest that a combined strategy of medical management and surgical excision is optimal for treating hydatid disease, particularly in atypical locations (8).

This case report highlights a rare instance of an extrapulmonary hydatid cyst, emphasizing the importance of early diagnosis and a comprehensive treatment approach combining surgical intervention and medical therapy. In our case, we could not find any lesions of the pulmonary parenchyma or any other thoracic lesion. Due to this, we concluded that in our case the diagnosis was that of primary pleural hydatidosis.

Conclusion

This case report underscores the significance of recognizing hydatid cysts in the pleura, rarely documented in the literature. The successful management of the hydatid cyst through a staged approach, encompassing both medical therapy and surgical excision, demonstrates the efficacy of an integrated treatment strategy. Medical management effectively facilitated cyst degradation, thereby reducing surgical risks and improving patient outcomes. It highlights the critical need for awareness of hydatid cysts in rare locations, which can lead to improved patient outcomes and reduced complications associated with this parasitic disease.

Conflict of Interest

The authors declare that there is no conflict of interests.

Reference

1. Salih AM, Ahmed DM, Kakamad FH, Essa RA, Hunar A, Ali HM. Primary chest wall hydatid cyst: Review of literature with

report of a new case. In J Surg Case Reports. 2017;41:404-406.
2. Bajdechi M, Manolache D, Tudor A, Orghidan M, Gurghean A. Cardiac hydatid cysts in a young man: A case report and a literature review. Exp Ther Med. 2022;24:1-10.
3. Younis S, Faraj AA. Cardiac hydatid disease, case report, and review of literature. Acta Clinica Belgica. 2014;69:66-68.
4. Demir HA, Demir S, Emir S, Kacar A, Tiryaki T. Primary hydatid cyst of the rib mimicking chest wall tumor: A case report. J Pediatr Surg. 2010;45:2247-2249.
5. Kankilic N, Aydin MS, Günendi T, Göz M. Unusual hydatid cysts: Cardiac and pelvic-ilio femoral hydatid cyst case reports and literature review. Braz J Cardiovasc Surg. 2020;35:465-472.
6. Tamarozzi F, Legnardi M, Fittipaldo A, Drigo M, Cassini R. Epidemiological distribution of *Echinococcus granulosus* s. L. Infection in human and domestic animal hosts in european mediterranean and balkan countries: A systematic review. PLoS Neg Trop Dis. 2020;14:e0008519.
7. Eris C, Akbulut S, Yildiz MK, Abuoglu H, Odabasi M, Ozkan E, et al. Surgical approach to splenic hydatid cyst: Single center experience. Int Surg. 2013;98:346-353.
8. Savu C, Melinte A, Grigorie V, Iliescu L, Diaconu C, Dimitriu M, et al. Primary pleural hydatidosis—a rare occurrence: A case report and literature review. Medicina. 2020;56:567.
9. Ullah R, Ullah I, Nazir M, Raza SS, Janan H, Khan N, et al. Primary hydatid disease of chest wall. Journal of Ayub Medical College Abbottabad. 2020;32:418-420.
10. Gursoy S, Ucvet A, Tozum H, Erbaycu AE, Kul C, Basok O. Primary intrathoracic extrapulmonary hydatid cysts: Analysis of 14 patients with a rare clinical entity. Texas Heart Institute Journal. 2009;36:230.
11. Geramizadeh B. Unusual locations of the hydatid cyst: A review from Iran. Iran J Med Sci. 2013;38:2.