Complicated Thoracic Hydatidosis

Fatima-Ezzahra Haouassia1*, Khadija Chaanoun1, Nahid Zaghba1, Hanane Benjelloun1, Najiba Yassine1

1 Pulmonology Department, Ibn Rochd University Hospital, Casablanca, Morocco

* Corresponding Author: Fatima-Ezzahra Haouassia E-mail: fhaouassia@gmail.com

ABSTRACT

Objective: Thoracic hydatid cysts represent a significant clinical challenge, particularly in endemic regions like Morocco. This retrospective study conducted at Ibn Rochd University Hospital in Casablanca aimed to elucidate the clinical characteristics, management strategies, and outcomes of 63 patients with complicated thoracic hydatid cysts. Results revealed a predominance of rural background among patients, with a mean age of 42 years. Clinical presentations varied, with common symptoms including hydatid coughing and complications such as bronchial and pleural rupture. Radiological investigations, including chest X-rays and computed tomography scans, demonstrated typical features of thoracic hydatid cysts. Treatment modalities comprised surgical intervention and medical management, with favorable outcomes observed in most cases. Discussion encompasses the endemic nature of thoracic hydatidosis, radiological appearances, complications, and challenges in management. Emphasis is placed on the importance of comprehensive approaches, including surgical techniques, medical therapy, and preventive measures, in addressing this formidable pathology. The findings underscore the need for continued research and public health initiatives to optimize the management and prevention of thoracic hydatid cysts.

Keywords: Thoracic hydatid cysts, Surgical intervention, medical management, Radiological features, Endemic regions

INTRODUCTION

The lung stands as the second most prevalent site of hydatidosis following the liver. Complications arising from thoracic hydatid cysts pose significant challenges and carry potential implications for life prognosis. In light of these considerations, we undertook a retrospective study involving 63 patients at the Respiratory Diseases Department of Ibn Rochd University Hospital in Casablanca.

Data collection for this study involved a retrospective review of the medical records of 63 patients diagnosed with complicated thoracic hydatid cysts at Ibn Rochd University Hospital. Relevant clinical characteristics, including patient demographics, presenting symptoms, imaging findings, laboratory results, and management strategies, were extracted from the medical records.

The collected data were analyzed to elucidate the patients’ clinical characteristics, management strategies, and outcomes. Descriptive statistics were used to summarize the demographic and clinical characteristics of the study population, including mean, median, standard deviation, and frequency distributions as appropriate.
RESULTS

Of the 63 patients, 34 were men and 38 were women, all from rural backgrounds. The mean age was 42 years (range 17–73). Fifteen patients had a history of surgically treated hydatid cysts, including 9 pulmonary and 5 hepatic cysts. Hydatid coughing was found in 31% of cases. Complications included bronchial rupture in 40% of cases, pleural rupture in 5% of cases, and a combination of both in 7.5% of cases. Multiple organ involvement was noted in 60% of cases, with a "ballooning" appearance in 21% of cases, pulmonary and hepatic involvement in 15% of cases, cardiac involvement in 6% of cases, and mediastinal and major vessel involvement in 4% of cases each. Hydatid serology was positive in 93% of cases. Bronchoscopy revealed hydatid membranes in 18% of cases. Treatment consisted of surgical intervention alone in 75% of cases and medical management alone in 18% of cases. Favorable outcomes were observed in 79% of cases.

Picture 1: Included within the diagnostic arsenal for a 43-year-old woman experiencing hemoptysis and chest pain, this case features a crucial series of radiological images. Initially, a chest X-ray unveils a right lung hydatid cyst, pinpointing a potential cause for the patient's symptoms. Subsequently, high-resolution chest computed tomography (HRCT) captures two pivotal findings: first, the presence of floating hydatid membranes within the pleural space (A), signifying a significant progression of the disease beyond the lung parenchyma; and secondly, the observation of the air crescent sign, a telltale indicator of hydatid cyst rupture (B). These radiological revelations not only corroborate the initial diagnosis but also serve as key prognostic markers, guiding the clinical management pathway. The chest X-ray establishes the foundation for diagnosis, while HRCT unveils intricate details of disease extent and complications, crucial for treatment planning and prognostication. Therefore, this sequence of radiological images plays an indispensable role in both diagnosis and therapeutic decision-making, offering clinicians invaluable insights into the progression and severity of the patient's hydatid cyst pathology.

Picture 2: A flexible bronchoscopy image from a 35-year-old man experiencing chest pain reveals a significant finding: a white structure, resembling a gelatinous membrane, is observed protruding from the medial basal segment of the right lower lobe. This visual representation not only highlights a specific clinical manifestation but also underscores the diagnostic value of bronchoscopy in identifying and characterizing thoracic abnormalities. The presence of such a distinct anatomical feature prompts further investigation into the underlying pathology, potentially guiding subsequent treatment decisions. As a result, this detailed observation holds paramount importance in both the diagnosis and management of the patient's condition, offering valuable insights into the nature and extent of pulmonary involvement.
Therapeutic considerations faced by clinicians managing presentations and potential complications of acic hydatid cysts, puncture of the right pleurisy complicated mediastinum and chest wall. Our study underscores the varied complexity of managing this rare but potentially life-threatening condition. The thoracic hydatid cyst remains a significant public health concern in Morocco, primarily affecting the lungs and occasionally manifesting in unusual locations such as the mediastinum and chest wall. Our study underscores the varied radiological presentations and potential complications associated with this condition.

DISCUSSION

Thoracic Hydatid Cyst remains a persistent endemic pathology in Morocco, posing a significant public health concern. Predominantly localized within the lungs, pulmonary hydatidosis accounts for the majority of thoracic occurrences. These cysts can manifest as solitary or multiple lesions, with the latter encountered in approximately 12% of cases. Despite its benign nature, pulmonary hydatid cysts carry substantial clinical implications due to the potential for mechanical, infectious, or metastatic complications.

Radiologically, Pulmonary Hydatid Cysts (PHCs) present a spectrum of appearances dependent on their evolutionary stage. Initially, a healthy cyst appears as a unilocular vesicle of variable volume, exhibiting characteristic features on chest radiography, resembling a "cannonball" with a low-tone opacity, homogenous texture, and well-defined margins. On thoracic CT scans, these cysts manifest as well-defined liquid masses of hydric density, featuring smooth and regular walls, as observed in our study's case of a right lung hydatid cyst.

Hydatid cysts may undergo complications such as fissuring, rupture, compression, superinfection, or rib erosions throughout their evolution. Fissured cysts may present as pneumocysts with gas crescents, while ruptured cysts display distinctive hydro-aerial images, characterized by double-arch or floating membrane aspects. Thoracic CT scans allow characterization of cyst evolution, delineating six stages from simple cysts to sequela-looking formations. Notably, voluminous cysts can exert pressure on neighboring structures, leading to mediastinal or diaphragmatic dome displacement and bronchial compression. Suspicion of cyst superinfection should arise in cases displaying specific radiological features, including thickened walls, intra-cystic air bubbles, or hydro-aerial levels (1,2).

While pulmonary localization predominates, the literature describes numerous unusual sites of thoracic hydatid cysts, including mediastinal, parietal (0.09% to 3.3% of thoracic locations), vertebral-medullary, and thymic locations. Mediastinal involvement, though rare, presents unique challenges due to the narrow and inextensible nature of the mediastinum, often resulting in compression symptoms and potential complications involving neighboring organs (3).

Hydatid pulmonary embolism, an exceedingly rare manifestation, poses therapeutic challenges and carries a reserved prognosis. Originating from the rupture of the right heart or hepatic hydatid cysts, it can lead to severe complications such as pulmonary arterial hypertension and chronic pulmonary heart disease. While surgical intervention remains ideal, the multiplicity of lesions often limits treatment options to medical management, underscoring the complexity of managing this rare but potentially life-threatening condition (4).

CONCLUSION

The thoracic hydatid cyst remains a significant public health concern in Morocco, primarily affecting the lungs and occasionally manifesting in unusual locations such as the mediastinum and chest wall. Our study underscores the varied radiological presentations and potential complications associated with this condition. From the characteristic appearance of pulmonary hydatid cysts on imaging to the rare occurrence of hydatid pulmonary embolism, our findings highlight the diagnostic challenges and therapeutic considerations faced by clinicians managing patients with thoracic hydatid disease. By elucidating this endemic pathology's clinical spectrum and complications, our study aims to enhance awareness and inform optimal management strategies in affected populations.

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Authors’ Contribution

Conceptualization: Haouassia Fatima ezzahra, Chaanoun Khadija, Zaghaba Nahid, Benjelloun Hanane, Najiba Yassine

Data curation:

Formal analysis: Haouassia Fatima ezzahra, Chaanoun Khadija, Zaghaba Nahid, Benjelloun Hanane, Najiba Yassine

Funding acquisition:

Investigation: Haouassia Fatima ezzahra, Chaanoun Khadija, Zaghaba Nahid, Benjelloun Hanane, Najiba Yassine

Methodology: Haouassia Fatima ezzahra, Chaanoun Khadija, Zaghaba Nahid, Benjelloun Hanane, Najiba Yassine

Project administration:

Resources: Haouassia Fatima ezzahra, Chaanoun Khadija, Zaghaba Nahid, Benjelloun Hanane, Najiba Yassine

Software:

Supervision: Chaanoun Khadija, Zaghaba Nahid, Benjelloun Hanane, Najiba Yassine

Validation: Haouassia Fatima ezzahra, Chaanoun Khadija, Zaghaba Nahid, Benjelloun Hanane, Najiba Yassine

Visualization: Haouassia Fatima ezzahra, Chaanoun Khadija, Zaghaba Nahid, Benjelloun Hanane, Najiba Yassine

Writing–original draft: Haouassia Fatima ezzahra, Chaanoun Khadija, Zaghaba Nahid, Benjelloun Hanane, Najiba Yassine

Writing–review & editing: Haouassia Fatima

Ethical approval: The present study was conducted in strict accordance with the principles outlined in the Declaration of Helsinki. Informed consent was obtained from the participants of this study.

REFERENCES


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