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Primary hydatid disease of chest wall mimicking chest wall mass-case report

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ABSTRACT

INTRODUCTION: Hydatid cyst is a parasitic disease caused by echinococcus granulosus. It is endemic in Mediterranean areas, south America, north Africa and Australia. The disease is most common in the liver and then in lung, the chest wall involvement by hydatid disease is a very rare condition.

PRESENTATION OF CASE: We present a case of chest wall mass in a 65-years old man, who intra operatively diagnosed as primary hydatid cyst. Cystectomy done and patient followed up for 2 months.

DISCUSSION: The diagnosis of echinococcus infection mainly depends on the clinical history of the patient, serologic tests, and diagnostic radiological findings. Operative procedures for chest wall hydatid disease are cystectomy, cystotomy, evacuation, and chest wall resection.

CONCLUSION: Chest wall hydatid disease should be considered in the differential diagnosis of chest wall masses even in a patient who has not been operated for hydatid disease.

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1. Introduction

Hydatid disease or echinococcosis is an old and important helminthic disease known since Hippocrates [1]. It is endemic in some regions of the world; Afghanistan is also an endemic area for hydatid disease that is more in the rural area of the country[2].

The liver and lungs are respectively the first and second involved organs[3]. Unusual affecting of the other organs such as spleen, spinal column, kidney, bones, brain, heart, skeletal muscle, and more rarely chest wall have been reported in the literature[1,4].

Beside the species and strain of parasite, the host's anatomical and physiological characteristics will also define the echinococcus's final localization.

Echinococcus granulosus is capable of completing a venous or lymphatic migration.

In this case, the passage of the embryo through the duodenum wall into either the portal vein or perigastric lymphatics which connects to the thoracic mediastinal lymphatic and thoracic duct seems to be the possible mechanism [5–7]. This pathway may explain how a primary chest wall hydatid disease develops without the absence of pulmonary or hepatic cysts.

Accurate diagnosis is important to allow appropriate treatment of this potentially curable condition[5].

Based on SCARE guidelines[8], we reported our case, which is about a 65 years old man who presented with a chest wall mass

and after diagnosis as primary chest wall hydatid cyst, surgical intervention done, and followed up for 2 months post-operative.

2. Presentation of case

A 65-year-old man presented to the clinic on his own, complaining of chest pain on the right side. The pain has been gradually started 20 days ago, with sharp characteristics, and was exacerbated with physical activity. It was associated with dyspnea.

The patient had no past surgical history. All of his family members were healthy. He was a rustic and had a very poor economic condition. he was alert and till that day he didn't use any kind of drugs.

Physical examination revealed a 6 cm soft, immobile, oval mass on the right infrascapular region with cystic characteristics. The mass appeared 5 months ago and gradually enlarged.

Routine blood exam and urine exams were normal. chest x-ray revealed a mass like lesion on the right side of the chest (Fig. 1). Pelvic and abdominal sonography was normal. On CT scan, multiple loculated cystic structures with irregularly thickened and partially calcified walls were noted in the right poster-lateral chest wall, mainly involving the pleura with intra and extrathoracic extension. The underlying ribs were intact and there was no pleural effusion (Fig. 2). The patient admitted by diagnosis of chest wall mass. Then, He underwent surgery with this diagnosis. Surgery is done under general anesthesia and intubation. Operation done by our general surgery team, including the chief of our general surgery department in the Ali Abad teaching hospital.

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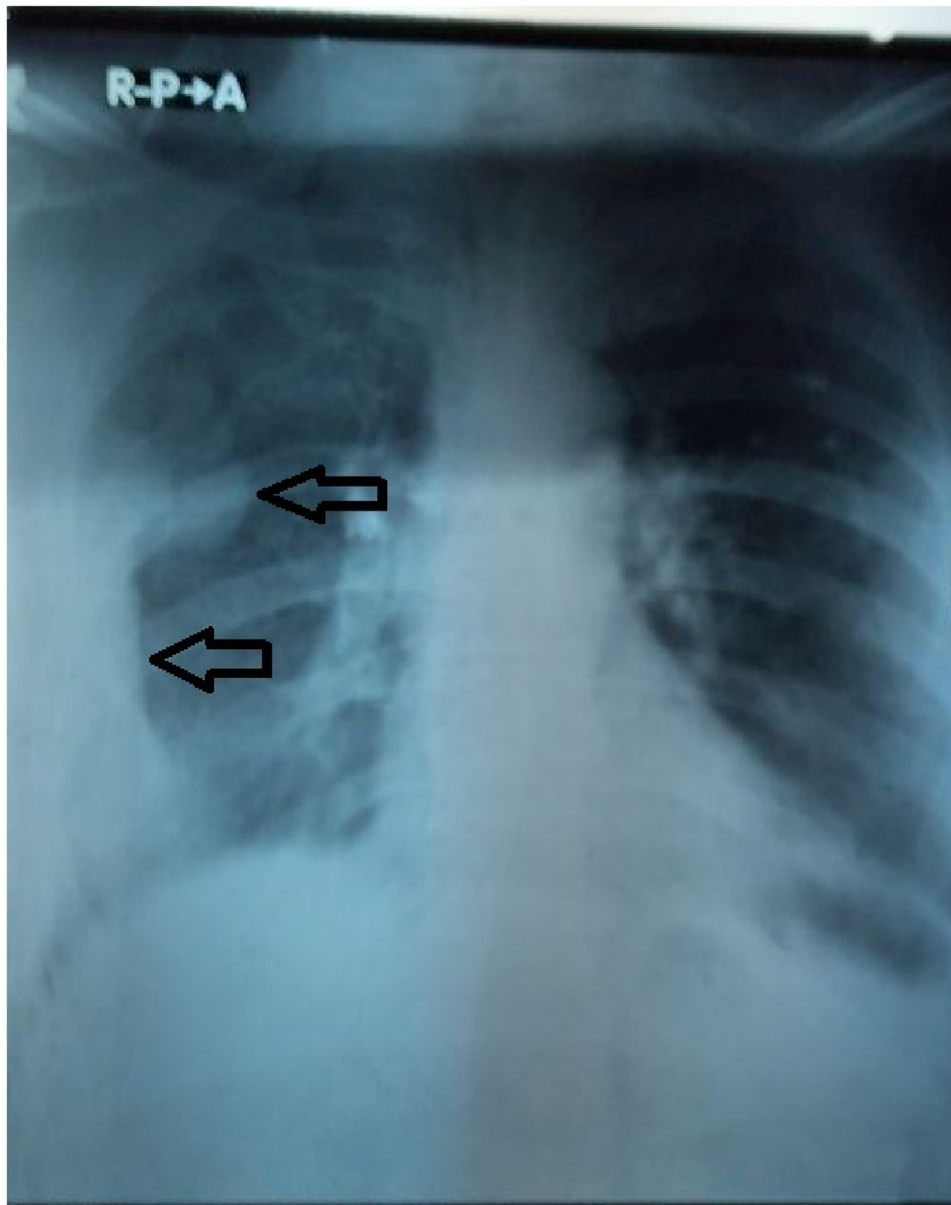


Fig. 1. Chest X-ray of the patient, showing the mass on the right side.

The intraoperative findings consist of multiloculated cystic mass containing clear fluid with small free cysts (daughter cyst) (Fig. 3). all macroscopic findings were suggestive of hydatid cyst. The ribs in the area were normal and the cysts had no communication with the pleura and its cavity. Hypertonic saline 25% was used as a scolical agent. Cyst evacuation and Cystectomy were performed. On discharge, albendazole advised postoperatively for a cycle, and follow up done for more than 2 months, visiting the patient three times in an OPD manner in our center. The Patient resolved uneventfully with no postoperative complications.

3. Discussion

Echinococcus granulosus is a parasite of dogs, wolves, foxes, and jackals. Humans are accidentally affected by contamination of food by the eggs found in feces excreted by animals, after the development of the embryo, various organs are infested by its migration through intestinal mucosa [4]. Involvement of the liver is 50–60 % and the lung is 10–30 %. In 7–4 % of patients, intratho-

racic extrapulmonary localization of thoracic cyst is observed [5]. Of the cases among thoracic extrapulmonary hydatid cyst, 55 % are localized in the fissure, 18 % within the parietal pleura, 14 % in the chest wall, 4.5 % in the mediastinum, and 4.5 % in the diaphragm [5]. The disease can be seen in the musculoskeletal system in 1–4 %, chest wall involvement constitute only 6% of them [3,5]. Our case was a primary hydatid cyst involving the chest wall with an incidence of less than 6% of all thoracic cases.

Mainly, the diagnosis of infection by echinococcus depends on the clinical history of the patient, serologic tests, and diagnostic radiological findings [1,4].

Operative procedures for chest wall hydatid disease are cystectomy, evacuation, cystotomy, and chest wall resection [1]. We did cyst evacuation and cystectomy in our case because intraoperatively we found that the mass is due to chest wall hydatid cyst.

Furthermore, anti-parasitic agents are utilized as a complementary therapy to surgical treatment. Anti-parasitic agents that can be used are albendazole, mebendazole, and praziquantel [1,3]. We

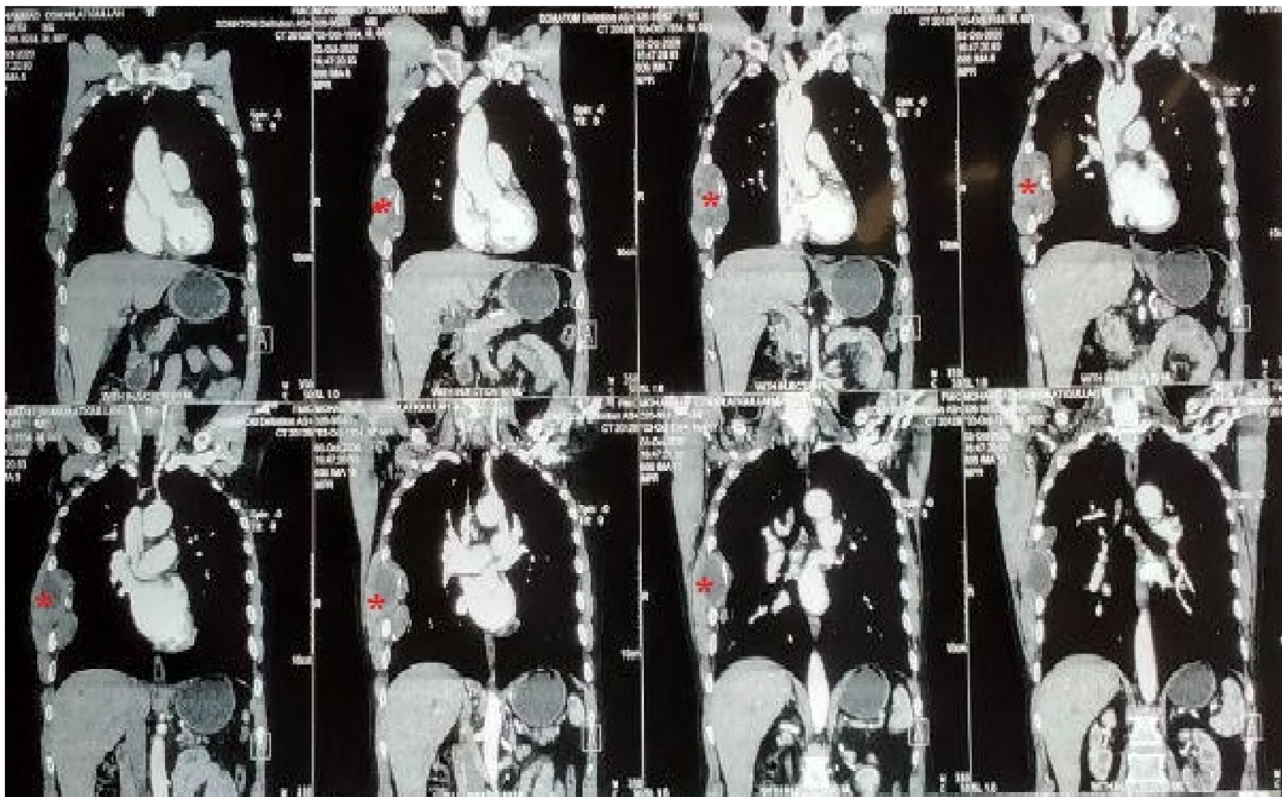


Fig. 2. Thoracic CT-Scan. Coronal images, showing the chest wall mass (hydatid cyst) on right side (Asterisks).

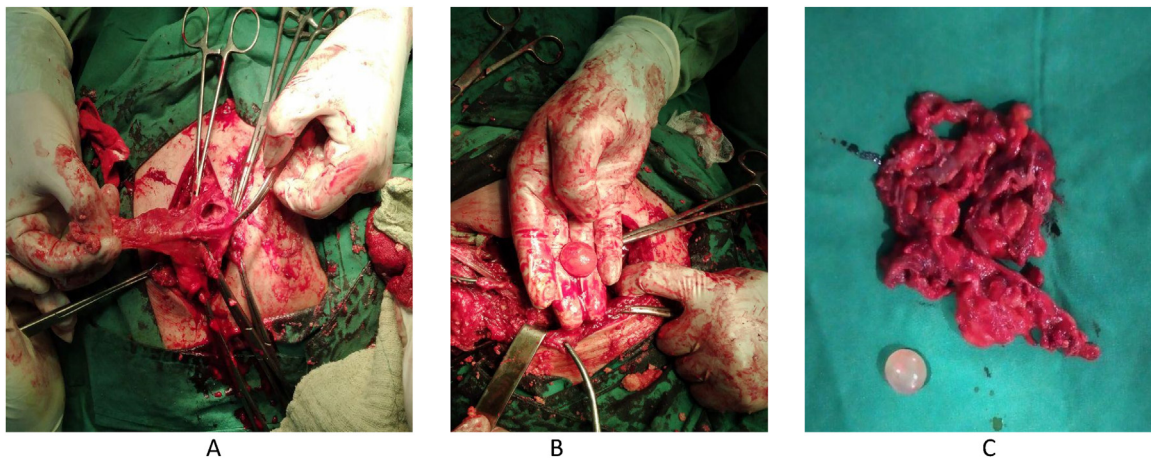


Fig. 3. Intra operative findings. A) Multiple loculated cysts without communication with pleura. B) Free daughter cysts within the enlarged cyst. C) Excision of the cyst with its content.

started the albendazole regime for one standard cycle immediately post-operative.

4. Conclusion

Hydatid disease can be located in various tissue as a primary lesion; therefore, in a patient who has not been operated on for hydatid disease, chest wall hydatid disease should be considered in the differential diagnosis of chest wall masses.

Declaration of Competing Interest

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Ethical approval

This report does not contain any personal information that could lead to the identification of the patient. There for it is exempt from ethical approval.

Consent

Written informed consent was obtained from the patient for publication of this case report and accompanying images. A copy of the written consent is available for review by the Editor-in-Chief of this journal on request.

Author contribution

Ghulam Yahya Basit: Conceptualization, Writing Original- Draft, Investigation, Resources.

Qais Muraveji: Methodology, Validation, Supervision, Writing-Review and editing.

Fareed Ahmad Nazari: Writing Original- Draft, Resources.

Registration of research studies

Not applicable.

Guarantor

Qais Muraveji, MD.

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