



Ruptured Hydatid Cysts Resulted in Infectious Pericardial Effusion and Development of Cardiac Tamponade: A Rare Presentation

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Abstract

Introduction: Cardiac Hydatidosis is a rare and ominous complication of hydatid disease. Cardiac echinococcosis may be asymptomatic for several years but could be discovered after the development of lethal complications.

Case Presentation: A 31-year-old-male referred with possible diagnosis of acute pericarditis. Abdominal and pelvic spiral CT scan showed focal and heterogeneous increased thickness of lateral left ventricular (LV) wall with protrusion into LV and bulging into pericardial space without central enhancement. His condition deteriorated suddenly due to cardiac tamponade with round cystic lesions suspected to hydatid cyst. Cardiac magnetic resonance imaging showed some round particles within effusion suggestive of possible scolex around the LV. There was round, and inhomogeneous cystic mass originated from sub-epicardial layer of mid-lateral LV that protruded into pericardial space. Diagnosis of hydatid cyst was confirmed by surgical specimen.

Conclusions: We suggest that patients with pericarditis should be probed with echocardiography for the presence of hydatid cysts.

Keywords: Ruptured Hydatid Cyst, Tamponade, Pericardial Effusion

1. Introduction

Cardiac Hydatidosis is a rare and ominous complication of hydatid disease (1). Cardiac echinococcosis may be asymptomatic for several years but could be discovered after the development of lethal complications (2). With this, we report a rare case of ruptured hydatid cyst resulted in the pericardial effusion and cardiac tamponade.

2. Case Presentation

A 31 years-old-male referred with a chief complaint of pleuritic chest pain with a possible diagnosis of acute pericarditis. electrocardiography (ECG) showed new T inversion in V5-V6 that was absent in the available ECG from last year. The initial trans-thoracic echocardiography (TTE) showed no pericardial effusion. The chest pain was diminished using non-steroid anti-inflammatory drugs. After

four days of hospitalization, he suffered from repetitive chest pain episodes that were resistant to nitrate and analgesic treatment. One fever episode about 40°C was also noticed. ECG at this time showed low voltage in all leads (Figure 1).

Laboratory data showed leukocytosis, normal erythrocyte sedimentation rate (ESR) level, elevated pro-calcitonin level and liver enzymes. Abdominal and pelvic spiral CT scan showed no hepatic mass, but showed focal and heterogeneous increased thickness of lateral LV wall with protrusion into LV and bulging into pericardial space without central enhancement after contrast injection. His condition deteriorated suddenly, and TTE showed moderate size pericardial effusion resulted in cardiac tamponade with a round cystic lesion suspected to hydatid cyst (Figure 2).

Cardiac MRI showed extensive and severe circumferential pericardial effusion with CMR evidence of cardiac tamponade. Some round and small particles within effu-

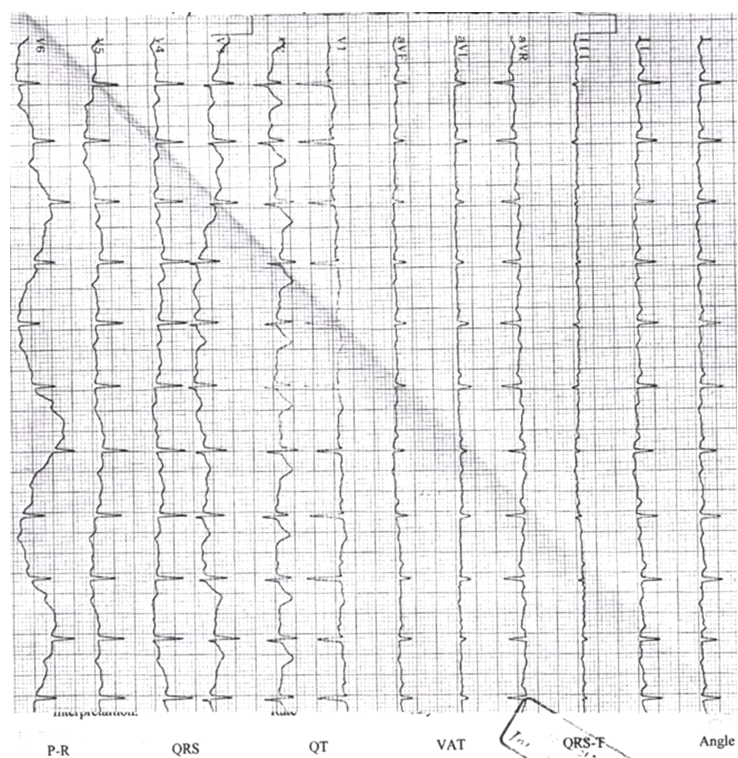


Figure 1. ECG at this time showed low voltage in all leads

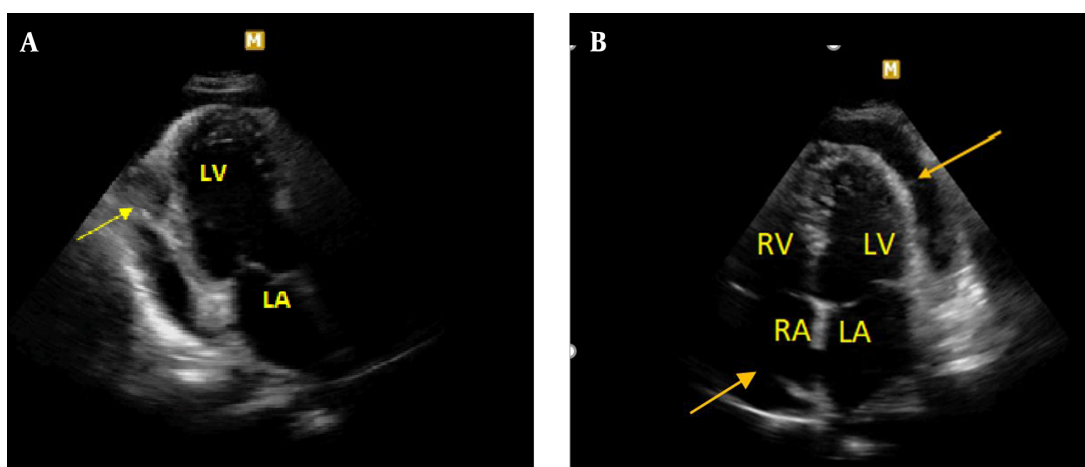


Figure 2. Moderate size pericardial effusion resulted in cardiac tamponade with a round cystic lesion suspected to hydatid cyst. A, Arrow indicates to the cystic lesion posterior to LV (left ventricle). B, Arrows indicate to circumferential pericardial effusion. LV: left ventricle, RV: right ventricle, LA: left atrium, RA: right atrium.

sion suggestive of possible scolex around LV were also detected. There was round, and inhomogeneous cystic mass lesion (length: 31 mm, width: 17 mm) originated from a sub-epicardial layer of mid-lateral LV that protruded into the pericardial space. Along with a small suspicious defect

in its outer rim (6mm) that could suggest rupture point into the pericardial space (Figure 3). He received antibiotic treatment and underwent a prompt surgical operation. Surgical exploration confirmed the presence of daughter cysts (Figure 4).

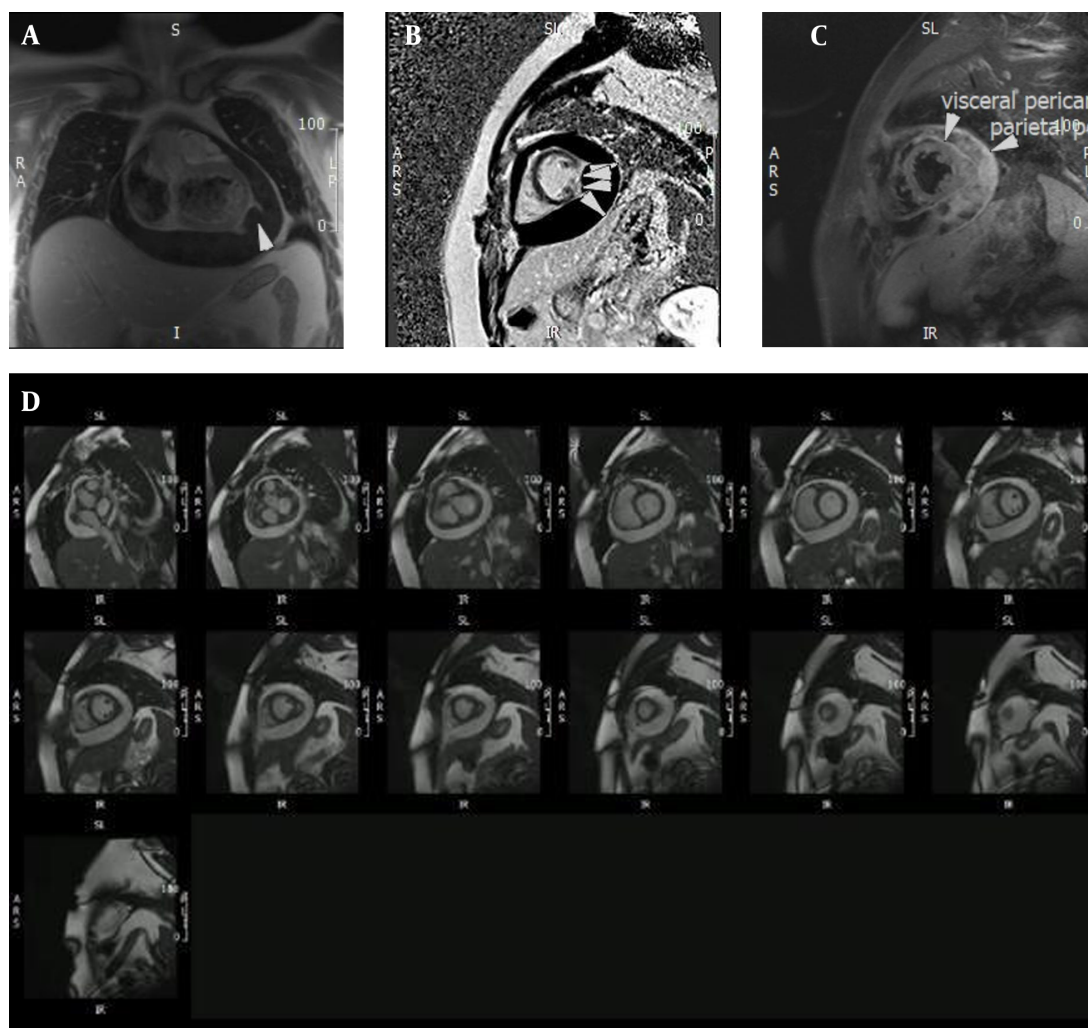


Figure 3. CMR images of ruptured hydatid cyst. A, T1 weighted CMR image depicts ruptured hydatid cyst. B, Late gadolinium enhancement (LGE) image demonstrates cystic ring enhancement in favor of hydatid cyst. C, In the STIR CMR image in short axis view diffuse parietal and visceral pericardial edema is noticeable. D, Stack short axis CMR view of left ventricle indicates to large circumferential pericardial effusion.

Median sternotomy and partial pericardiectomy were performed. In lateral wall of LV, there was a cystic mass (3*3cm) that was filled by injected hypertonic saline. Then, the cyst wall was opened and scolexes were removed. After irrigation of cyst space, the internal space of pericardium was irrigated using hypertonic saline and finally it was repaired following deaine insertion.

3. Discussion

Prior history of infection with echinococcosis can help physicians in rapid diagnosis of its complications in symptomatic cases, but unfortunately, patients are unaware of

their infection in some instances. Thus, being familiar with the broad spectrum manifestation of this disease is essential for better patient management. Cardiac hydatidosis is a rare complication of this disease, and cardiac events depend on the location, number and size of hydatid cysts and their induced complications (3). Pericarditis, pericardial effusion and tamponade could occur in this setting due to the presence of pericardial effusion due to cyst rupture into the pericardial cavity (4). Hydatid cysts reach the heart through coronary arteries. Their most common implantation sites are interventricular septum and left ventricular free wall with less involvement of pericardial space and paracardiac sites (5-7). Fazlinezhad et al. reported the

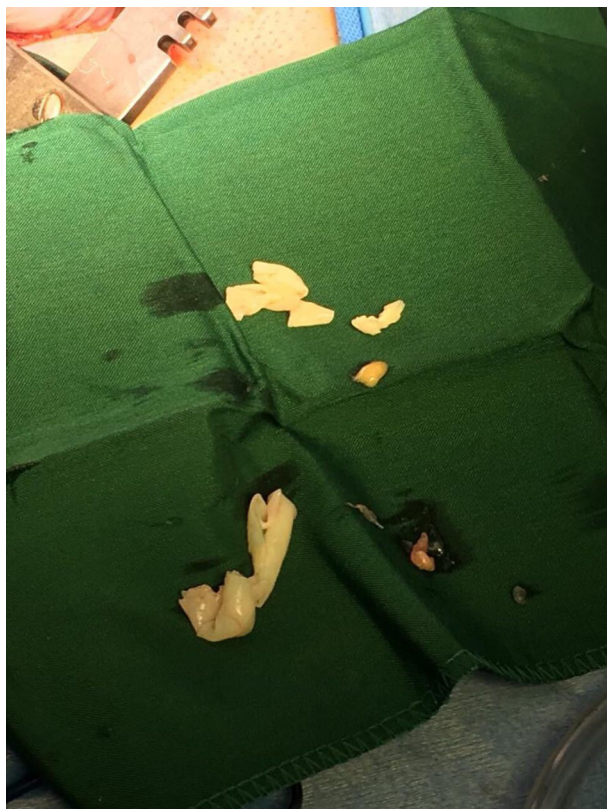


Figure 4. Surgical excision demonstrated presence of daughter cysts

apicolateral and apical left ventricular segments as the implantation site of the cyst (8). This site was in the mid-lateral wall in our case.

3.1. Conclusions

In conclusion, we suggest that patients with pericarditis should be probed with echocardiography for the presence of hydatid cysts to prevent further development of tamponade and clinical deterioration.

Footnotes

Authors' Contribution: Zahra Alizadeh Sani, Nahid Azdaki, Mohaddeseh Behjati, Saeid Nahavandi, and Sheikh Mohammed Shariful Islam did critical revision of the manuscript. Seyedali Moezi and Roohallah Alizadehsani did study concept and design. Afshin Shoeibi and Abbas Khosravi did analysis and interpretation of data. All the authors wrote the manuscript.

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Informed Consent: A written informed consent was taken from the patient in this study.

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