

CASE REPORT

PRIMARY HYDATID DISEASE OF CHEST WALL

Rahman Ullah, Irfan Ullah*, Mashal Nazir, Syed Shahmeer Raza, Hassan Janan, Najeebullah Khan, Asfandiar Shah Rukh Hijaz, Muhammad Babar Khan***, Aimal Shah, Gulsam Bashir**

Department of Surgery, Khyber Teaching Hospital, Peshawar-Pakistan, *Department of Gastroenterology, Prince Charles Hospital, Wales, **Department of Cardiology, Glenfield Hospital, Leicester-United Kingdom, ***Department of Surgery, Lady Reading Hospital, Peshawar-Pakistan

Hydatid disease-a parasitic medical condition caused by echinococcus, is one of the oldest diseases known to mankind. Primary hydatid disease of the chest wall is very rare and only nine cases have been reported so far in the literature. This study presents a case of primary hydatid chest wall in a patient with right infraclavicular swelling that increased in size suddenly. A 35 year-old lady presented to the Surgical Unit of Khyber Teaching Hospital with a two and a half year history of right infraclavicular chest wall lump which increased in size abruptly. Upon investigation the Computed tomographic (CT) scan of the chest showed a complex multiseptated hypodense lesion in the right pectoralis muscle with no involvement of underlying clavicle or rib. She was booked for exploration under general anaesthesia electively. The lump revealed multiple daughter cysts with the characteristics of germinal layers and ecto cysts of hydatid cysts. The patient had a stable recovery in the postoperative period and was sent home on medical treatment. On follow up she was fine; the wound had healed and there was no swelling in the surgical site. Primary hydatid disease of the chest wall is a very rare disease, so this case is a piece of good evidence to consider hydatid cyst in the differential diagnosis of any cystic mass in any part of the body, especially in endemic areas. Radical peri-cystectomy followed by chemotherapy with albendazole is all that is needed for the treatment.

Keywords: Primary hydatid disease; Dog tapeworm; Ecto cysts; Echinococcus granulosus

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INTRODUCTION

Primary hydatid disease of the chest wall is very rare and only nine cases have been reported so far in the literature.¹ The word hydatid is derived from the Greek word hudatid/hudatis in the 17th century, which means watery vesicles. In Latin hydatid means dew drops.² Hydatid disease is also known as dog tapeworm disease (dog being the definitive host). Hydatid disease is commonly caused by a parasite echinococcus granulosus, although there are more than six species of clinical importance in human beings.³ Hydatid disease is common in sheep rearing tropical countries. Another variant of the disease which occurs in hilly areas is caused by an echinococcus multilocularis.⁴

The life cycle of hydatid disease starts when the infected faeces of sheep/cattle containing cysts are eaten by a dog.⁵ The cyst wall ruptures in the dog intestine and scolices are released from cysts. These scolices stuck to the dog (Definitive Host) intestinal wall and become adult worms. Each adult worm sheds approximately 500 ova into the bowel. Close contact with dogs or ova expelled by dog's intestine into grass or vegetable cases contamination by oral route in humans or cattle (Intermediate Host). The cysts in the human intestine then burrow into the intestinal wall and

travel via the portal vein into the liver (the commonest site of hydatid disease) or via inferior vena cava into the lung (second most common site of hydatid disease) to develop into adult worms there.⁶

CASE REPORT

A 35 years old lady, mother of two from the suburbs of Peshawar, presented to the Surgical Unit of Khyber Teaching Hospital with two-and-a-half-year history of right infraclavicular chest wall lump. The lump was of constant size previously but now for the last couple of days, there was a sudden increase in size. This prompted her to seek medical advice. She had no contact history with dogs and cattle. There was 5×4 cm rounded lump in the right infraclavicular area which was mobile, non-tender, cystic, firm in consistency and no fixity to underlying muscles or overlying skin. The overlying skin was normal with no colour or temperature changes. The draining lymph nodes were also normal. CT scans of the chest and upper abdomen showing 'a complex multi septated hypodense lesion in the right pectoralis muscle with no involvement of underlying clavicle or rib (Figure-1). After pre-op workup of the patient, excision of the cyst was planned electively.



Figure-1: CT scan chest (Axial image) showing a complex multi septated hypodense lesion in right pectoralis major region



Figure-2: Daughter cysts of hydatid popping through the cyst wall



Figure-3: Daughter cysts with germinal layers and ecto cysts of hydatid

After informed written consent and Under general anaesthesia, the lump was explored. Right oblique incision was given over the lump keeping in mind the relaxed skin tension lines. During the exploration, the cyst was opened, revealing daughter cysts with the characteristics of germinal layers and ecto cysts of hydatid cysts. After evacuation of cysts, peri

cystectomy was done (Figure-2 & 3). Vacu Derm drain was placed and cavity was closed. Drain was removed a day after surgery. She was discharged on oral analgesics and oral Albendazole 800 mg/day and was followed. On follow up the wound had healed with no active medical issues to the patient.

DISCUSSION

Echinococcus can involve almost every part of the human body either via lymphatic, direct spread or hematogenous invasion. These include liver (52–77%), lung (10–40%), brain, spleen, pancreas, heart, ribs, sternum and soft tissues of the torso.⁶ Very rarely it can only involve the musculoskeletal system without involving liver or lung (primary hydatid disease) like in our patient of primary chest wall hydatid disease.⁷

There are two possible mechanisms of primary hydatid disease of the chest wall in the literature. First one is when a cyst enters either into the portal vein through the gut or into the thoracic duct through peri-duodenal or peri-gastric lymphatics which connects with the thoracic-mediastinal lymphatics. The second possible mechanism is when an intrathoracic extrapulmonary cyst directly invades ribs and destroys them and causes chest wall involvement.^{4,8} The absence of pulmonary or hepatic cysts indicate the former mechanism to be responsible for the development of Primary Chest wall Hydatid disease. Our case was 35 years old female who presented with a non-tender firm and mobile swelling in the right infraclavicular region from two and a half years. There were no constitutional symptoms and no lymphadenopathy. CT scan of the chest showed a complex multi septated hypodense lesion in the right pectoralis muscle with no involvement of underlying clavicle or rib.

The diagnosis of hydatid disease is done by intradermal casoni test (historical interest), radiological investigations like ultrasound, CT scan, MRCP for cystic-biliary communication evaluation and serological tests like ELISA, indirect hemagglutination test and latex agglutination test which are 80–95% sensitive.^{4,9} Most important and reliable are radiological tests of which CT scan is more accurate in identifying cysts characteristics like cartwheel appearance and water Lily sign.¹ CT scan is also very helpful in the identification of bone erosion. In our patient, FNAC and serology were not done as hydatid disease was not in our differentials of right infraclavicular swelling. CT scan revealed a complex multiseptated hypodense lesion in the right pectoralis muscle with no involvement of underlying clavicle or rib. The diagnosis was made intraoperatively by exploring cyst containing typical

daughter cysts. Only in 10–15% cases, hydatid cyst occurs in other parts of the body (after liver and lung), of which 7.4% incidence of intrathoracic extrapulmonary localization of thoracic cyst was reported. Among these 7.4% chest wall is only involved in 14% cases. The musculoskeletal system is involved in 4% of cases of primary hydatid disease and chest when involved is only in 6% of them.¹⁰

The main modality of treatment for chest wall hydatid is radical peri-cystectomy with excision of underlying bone to prevent recurrence.^{3,6,9} As in our case, no muscle or bone was involved so only cystectomy was done and a suction drain was placed. Suction drain was removed on 1st postoperative day and the patient was discharged on medical treatment of Albendazole for 3 months. On follow up after a week, the surgical scar was healed and there were no signs of swelling. After that, the patient was lost to follow up.

CONCLUSION

Hydatid disease should be considered in one of the differentials of chest wall swelling. Serological tests and computed tomography should be performed for diagnosis. Radical peri-cystectomy followed by

treatment with albendazole is the gold standard therapy for primary hydatid disease of the chest wall.

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Address for Correspondence:

Syed Shahmeer Raza, Department of Physiology, Khyber Medical College/Teaching Hospital, Peshawar-Pakistan

Cell: +92 305 900 6082

Email: shamir.raza@gmail.com