

A rare case of hydatid cyst of the neck with concurrent pulmonary hydatid disease

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Abstract

Echinococcosis, commonly known as hydatid disease, is a zoonotic infection caused by dog tapeworm *Echinococcus granulosus*. Hydatid disease of the head and neck region is scarcely reported even in endemic areas. We herein report a case with neck swelling and respiratory symptoms subsequently diagnosed to have disseminated echinococcosis of the neck and left lung.

Introduction

The hydatid cyst is a zoonotic disease caused by adult or larval stages of tapeworms belonging to the genus *Echinococcus* (McManus et al. 2003). Humans act as incidental intermediate hosts (Goyal et al. 2013). The usual sites involved are the liver (75%) and lungs (15%); unusual body sites can also be affected (Geramizadeh 2013). Hydatidosis is extremely rare in the head-and-neck region, even in endemic areas (Ghartimagar et al. 2015). Patients are usually asymptomatic, and presenting symptoms and signs depend on anatomic location, size, and pressure effects caused by the growing cysts (Khalifa et al. 2016). Here, we report our experience in diagnosing and managing a case of concurrent hydatidosis involving the neck and left lung.

Case Report

A 28-year-old male, cook by occupation, presented to the outpatient department with complaints of right-sided neck swelling for eight months, along with fever, dry cough, and left-sided chest pain for ten days. The neck swelling was initially small but had gradually increased in size and was painless. The patient also complained of ill-defined chest pain over the left anterior chest without any radiation, aggravating or relieving factors. Past medical history was unremarkable. On examination, his vitals were stable. A 2 x 2 cm sized cystic, non-tender mobile swelling was noted in the right cervical region. There were no signs of inflammation on skin overlying the swelling. Respiratory system examination revealed dull notes on percussion involving left mammary, axillary, and infraaxillary areas with reduced intensity of breath sound in the same regions compared to the right side. The patient was admitted for further evaluation. Chest x-ray PA view was suggestive of a well-defined encysted lesion involving the left mid zone, extending to the left lower zone (Fig. 1A). USG neck was representative of a well-defined cystic lesion 2.2 x 2.5 cm size in the right cervical region in the subcutaneous plane. Ultrasound of the abdomen was unremarkable. His routine blood investigations did not show any abnormality or eosinophilia.

CT Chest (Fig. 1B-D) showed the presence of a hypodense lesion with internal fluid attenuation measured approximately 12 x 9 cm in size in the left upper lobe with adjacent cavitation and ground glass haziness, suggestive of ruptured cyst with secondary infection. Fine-needle aspiration was done from his right cervical swelling. Smears demonstrated the presence of eosinophilic material with a laminated layer at the periphery which also pointed towards the probability of hydatid disease. Following this, an excisional biopsy was performed from the cervical swelling, which showed a laminated cyst wall, and the diagnosis of hydatid cyst of the neck was confirmed. Contrast-enhanced MRI chest showed the presence of a fluid-

filled thick-walled cystic lesion in the left upper lobe. Another small air-filled cavity was present inferolateral to the cyst. With the provisional diagnosis of hydatid disease of the left lung, echinococcus serology was done, and it was positive for IgG antibody (14.4 NovaTec-Units, NTU).

Meanwhile, the patient was initiated on oral albendazole 400 mg twice daily. Subsequently, the patient underwent enucleation of the left lung hydatid cyst. His postoperative course was uneventful. Patient was subsequently discharged ten days after the surgery. Albendazole was continued for a total of 8 weeks.

Discussion

Hydatid disease is one of the most important zoonotic diseases worldwide that is endemic in many parts of the world (Polat et al. 2003). The disease can involve all age groups, however, it is more frequently observed in adulthood. Though both sexes are involved, females are somewhat more affected (Budke et al. 2013). Any site of the body can be affected (Gun et al. 2017; Shahriarirad et al. 2020). Fine needle aspiration cytology (FNAC), and histopathological examination, were used in the diagnostic workup of this patient. Traditionally, FNAC has not been recommended as a diagnostic tool in suspected hydatid cases due to the risk of anaphylaxis following cyst rupture and inadequate tissue for definitive diagnosis (Bitton et al. 1992). However, FNAC has increasingly been used to diagnose hydatidosis without any reported complications (Yalavarthi et al. 2013; Kim et al. 2013; Kapatia et al. 2020). In our case, as the neck swelling clinically appeared like a cervical lymph node, we did FNAC to achieve diagnosis. Hydatid cysts are usually not considered in the differential diagnosis of head and neck cystic swellings unless there is hydatid disease elsewhere in the body. As hydatid disease is rare in this anatomical location, it poses a diagnostic dilemma for the treating physician (Cangiotti et al. 1994). Spontaneous rupture of cysts during surgery or trauma can lead to anaphylactic shock (Bitton et al. 1992). This event did not occur in this patient. Standard treatment modality involves surgical removal of the cyst and antihelminthic agents such as albendazole or mebendazole before and after surgery (Eckert and Deplazes 2004).

Conclusion

We present this case for its unique presentation as a hydatid cyst of the neck together with pulmonary hydatid disease is rare. We also intend to highlight that hydatid cyst should be considered one of the differential diagnoses of cystic lesions in the head-and-neck region for proper management and to emphasize the role of FNAC in detecting hydatid disease.

Declarations

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Competing Interests

The authors report no relevant financial or non-financial interests to be disclosed.

Author Contributions

All authors contributed equally in patient management, collection, analysis and interpretation of data, drafting, editing and revision of this manuscript. All authors approved the work, and agreed to be accountable for the final manuscript version published.

Consent to participate

Informed consent was obtained from the patient being reported in the manuscript.

Consent to publish

The authors affirm that human research participant provided informed consent for publication of the images in Figure 1.

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Figures

Figure 1

A: Chest x ray PA view showing a well defined encysted lesion involving left mid zone, extending to left lower zone.

B: CT chest showing hypodense lesion with internal fluid attenuation in the left upper lobe with adjacent cavitation.

C: MRI Chest with contrast, axial view showing fluid filled thick walled cystic lesion in left upper lobe.

D-F: MRI Neck and Chest with contrast, showing the cystic lesions in neck and left lung.

G: FNAC from right cervical swelling showing eosinophilic material with laminated layer at periphery.

H: Histopathology of excisional biopsy tissue from right cervical swelling showing laminated cyst wall.

I: Gross specimen of enucleated cyst from left lung.