

Alveolar Echinococcosis in Sternum

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Summary: Alveolar echinococcosis is a different disease from *E. granulosus* and has limited geographic distribution. Its distribution according to organs are liver 90 per cent, lung 5 per cent and brain 5 per cent. Other locations are very rarely seen. In this paper, we report an alveolar echinococcosis case located in the sternum and later found to have its primary focus in the liver.

Key Words: alveolar echinococcosis, bone

Alveolar echinococcosis is a different disease from *E. granulosus* and has limited geographic distribution. It has been most frequently observed in Germany, Switzerland, France, Russia, Siberia and Alaska, rarely in Canada and England. All reported cases are from Northern Hemisphere (1,5-7,10). Up to date more than 200 cases have been reported in Turkey (1).

The disease is distributed in various organs. The liver involvement is reported to be around 90 per cent, lung 5 per cent and brain 5 per cent. Other locations are rarer (2,3,6,9).

In this paper, we report a unique case of bone located alveolar echinococcosis. As far as we know, there has been no previously documented such a case in Turkey and also in the literature since 1933 (6).

Case Report

A 41-year-old female was admitted to Erciyes University Medical Faculty Hospital for evaluation of discharge from sternal area.

On physical examination, a fistul orifice was found on the sternum and a palpable hard mass 6 cm in diameter was located in the epigastric region. Other systems were normal.

X-ray examination of the chest revealed rarefaction on manubrium sterni. The rest of laboratory findings and liver function tests were within normal limits.

An operation was performed by Orthopedists and a sternal lesion which grossly look liked an abscess and a caseous material was curetted.

Microscopical examination of this material revealed alveolar echinococcosis, and thus an exploratory laparotomy was performed. A large, firm, grey and yellow mass was observed extending into the porta hepatis and invading the right lobe of the liver. Biopsy was done and mebendazol was prescribed.

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Pathological Examination

Sternal material was necrotic tissue, grey-red in colour. On microscopical examination, there were laminated acellular cuticular material in necrotic hyalinized fibrous tissue and inflammatory cells were observed both in and surrounding the material. In the bone, there were necrotic bone spicules, laminated acellular cuticular material, epithelioid histiocytes and foreign-body giant cells (Fig.1). In the liver biopsy, necrotic tissue was also found and microscopical examination revealed typical alveolar echinococcosis on necrotic ground (Fig. 2).

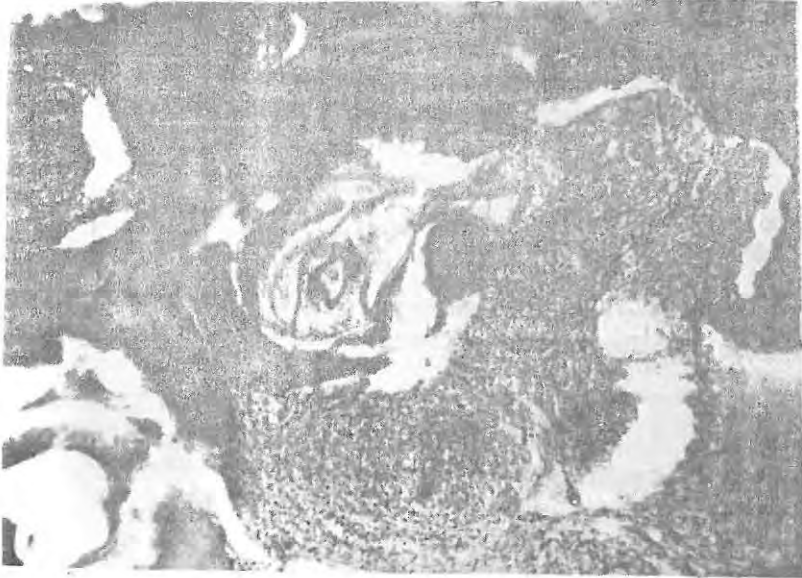


Figure 1. Laminated acellular cuticular layers and granulomatous inflammatory reaction around them in bone tissue (H-E, x160)

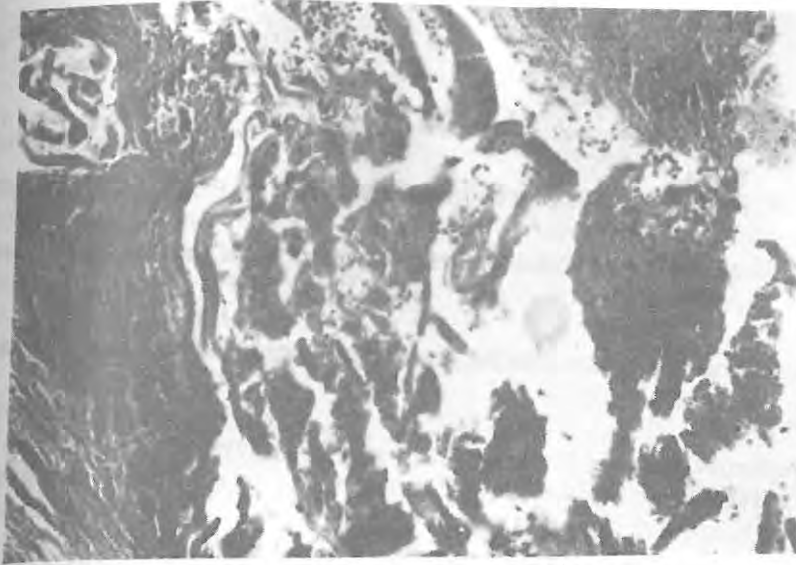


Figure 2. Curved cuticular layers in necrotic ground (H-E,x160)

Discussion

Echinococcosis is caused by ingesting the eggs of the dog tapeworm. The oncospheres are liberated in the upper small gut, penetrate the mucosal barrier and circulate in the blood stream. Most of the larvae are filtered by the liver and thus this organ is more often the site of the lesion in alveolar echinococcosis (3,5,7,9). The hepatic lesion is characterized by multicystic infiltration of parenchyma without encapsulation of the parasite. This lesion can invade major vessels and metastasize to the lung or the brain (6,10).

In Turkey, among the reported of more than 200 cases, liver involvement was found to be more than 90 per cent, and there were metastatic involvement to the peritoneum, brain and lung in three cases (1,8). In our case, there were sternal and hepatic lesions which suggests that the sternal lesion is probably metastatic or secondary to the hepatic lesion. However, bone involvement is very rare and the latest reported case was in 1933 (6). When located in bone, it causes necrosis and liquefaction and resembles tuberculosis osteomyelitis (4).

Alveolar echinococcosis always leads progressively to hepatic failure resulting in death, and metastatic dissemination worsens the course (1,2,6,9,10) though mebendazol may be useful in inoperable cases (2,9).

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