



Hydatid Cysts in the Lungs: The “Cannonball” Sign of Multiple Pulmonary Echinococcosis

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Abstract

Human echinococcosis primarily affects the lungs, with Multiple Pulmonary Echinococcosis (MPE) occurring in 12% of cases. A rare manifestation, “cannonball-like” opacities, arises from bronchogenic dissemination after cyst rupture. Chest X-ray shows multiple, well-defined, nodular opacities, often bilateral, resembling cannonballs. Computed Tomography (CT) scans confirm cyst location along bronchial axes and may suggest primary cyst rupture. Diagnosis is straightforward with radiological and biological evidence, but treatment, typically surgical, is challenging due to the multiplicity of lesions, often requiring medical management.

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Keywords: Cannonball-like opacities; CT; Pulmonary echinococcosis.

Case observation

A 32-year-old man with no medical history, living in a rural area and having regular close contact with dogs, was admitted to the emergency department of our hospital with complaints of low abundance hemoptysis beginning four months ago with no alteration of general health. Frontal chest X-ray showed multiple well-defined, homogeneous, and round small hydatid opacities occupying the right lung's middle and inferior lobes, similar to cannonballs. A large, well-defined, homogeneous hydatid opacity, whose internal limits are embedded in the mediastinum, could also be found in the right cardiophrenic angle. A CT scan revealed multiple small cystic nodules located along the bronchial axes, between 5 and 10 mm in diameter. Alongside these nodules, occupying the right inferior lobe, a large, well-defined cystic lesion was surrounded by a thin ring clarity, with passive atelectasis of the adjacent parenchyma.

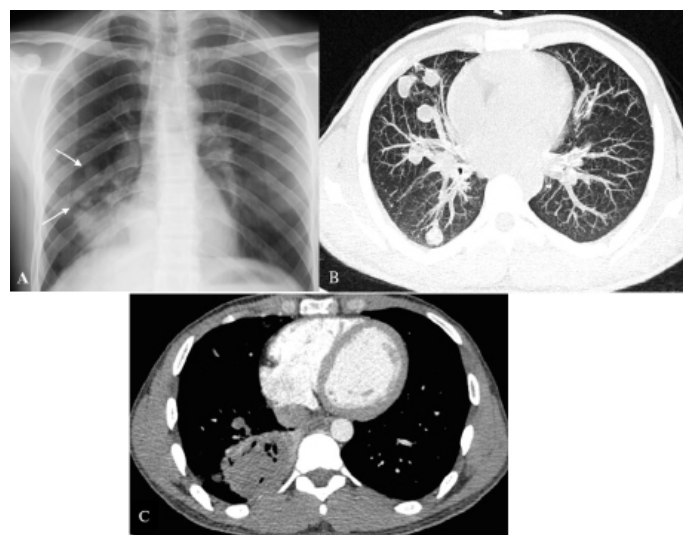


Figure 1: Frontal chest X-ray (A) and axial computed tomography images (B) show multiple hydatid cysts with a “cannonball” appearance (narrow) along the bronchial axes located in the middle and lower right lobes as a consequence of right lower lobe hydatid cyst rupture in the bronchi. (C) CT mediastinal window showing multiple air bubbles within the fluid content, indicating the communication between the pericyst and the bronchial tree



Comments

Human echinococcosis is characterised by a variety of anatomical forms. The lungs represent its most prevalent localisation (20 to 40%), and 90% of intra-thoracic cysts can be found there. MPE is found in 12% of cases, and cannonball-like opacities (also known as “release of balloons”) are an uncommon presentation [1]. It can occur through either hematogenous or bronchogenic dissemination due to cyst rupture. Our case is an example of bronchogenic dissemination. Subsequent cysts develop along the bronchial axes, usually homolateral to the primary ruptured cyst and localised in a systematised lung territory.

This is reflected on the chest X-ray by the presence of multiple, often bilateral, homogeneous, well-defined, nodular opacities of variable size, comparable to cannonballs. Thoracic CT scan reveals the location of these cysts along the bronchial axes and can also show signs suggestive of rupture of the primary cyst in the bronchi [2].

Diagnosis of MPE is simple and based on a combination of radiological and biological arguments. Management is delicate; in ideal cases, surgery should be attempted, but often, medical treatment is the only option due to the multiplicity of the lesions [3].

References

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