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Silent Pulmonary Hydatid Cyst-A Diagnostic Dilemma

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Abstract: *A 9-year old girl came to the medicine outpatient department (OPD) with a history suggestive of upper respiratory tract infection. No improvement was seen even after 2 weeks of treatment and the patient was admitted. Routine chest X-ray revealed dense homogenous opacity involving the right lower zone with obliteration of costophrenic angle. CT scan showed thick walled cystic lesion occupying the lower zone of right lung. After four weeks of pre-operative albendazole treatment (400 mg BD), the patient underwent parenchyma-preserving surgery for lung hydatid cyst which was confirmed at operation theatre. Albendazole was continued for another 4 weeks. Patient was doing well on follow-up for one year.*

I. The case

A 9-year old girl from rural Bengal came to the medicine OPD with a history of mild fever ($\leq 101^0$F) without chill and rigor with nonproductive cough for 15 days. She was diagnosed with upper respiratory tract infection and treated accordingly. As the fever persisted and cough became productive after 2weeks, the patient was admitted to the hospital.

On examination, there was impaired percussion note and diminished vesicular breath sound over the right hemithorax. Chest X-ray was done to exclude chronic chest infection. Surprisingly, the X-ray revealed dense homogenous opacity involving the right lower zone with obliteration of costophrenic angle (Figure1). CT scan showed thick walled cystic lesion occupying the lower zone of right lung (Figure 2). Ultrasonography of whole abdomen was done to exclude any other organ involvement. The initial diagnosis was hydatid cyst of the lung. The patient was then referred to the surgical clinic. After four weeks of pre-oparative albendazole treatment (400 mg BD), the patient underwent parenchyma-preserving surgery. After right thoracotomy, the endocyst was enucleated intact with no spillage of the fluid to the surrounding tissues; the bronchiolar communications were then sutured using 3/0 proline and obliteration of the residual cavity by imbricating sutures from within (capitonnage) was achieved.

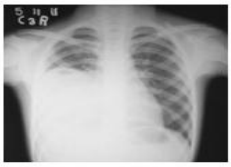

Fig.1: Chest X-ray showing a dense homogenous opacity involving the right lower zone with obliteration of costophrenic angle.

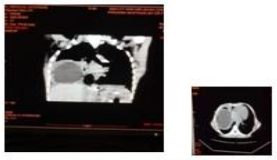

Fig. 2: CT scan shows pulmonary hydatid cyst in right lower lobe

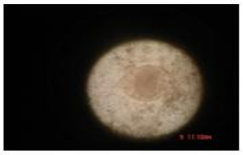

Fig.3: Wet mount preparation of the aspirated hydatid fluid to demonstrate protoscolices

The fluid aspirated from the cyst at the operation theatre was sent to Microbiology department and the centrifuged wet mount of that fluid revealed viable scoleces with hydatid sand (Figure 3). The postoperative course was uneventful and she was discharged after 7 days with a 4-week course of postoperative albendazole therapy. The follow-up of the patient for last one year was uneventful.

II. Discussion

Hydatid disease is a parasitic infestation caused by *Echinococus granulosus* [1,2]. It is endemic in many countries including India especially in the eastern region. The lungs are the second most common site for hydatid cysts after the liver [1,2]. Non-complicated pulmonary hydatid cysts are usually discovered incidentally during routine chest X-rays for complaints other than chest diseases [3]. Giant hydatid cysts and complicated cysts, on the other hand, are usually symptomatic [4]. The common presentations are compression symptoms such as a dry cough in cases of very large cysts; a productive cough in cases associated with communication with the bronchial tree; and chest pain and dyspnoea in the case of rupture to the pleural cavity [4]. Anaphylactic shock is a rare presentation seen in cases of rupture to the pleural cavity. The patient is usually in good general health in cases of non-complicated cyst and chest X-ray shows a well-circumscribed dense homogenous opacity [5]. Some cysts impose diagnostic challenges and final diagnosis can only be done by operative intervention [5].

In our case, the diagnosis was incidental when the patient had a chest X-ray that revealed a dense homogenous opacity occupying the right lower zone of thoracic cavity (Figure 1). Asymptomatic lesions in the lung in endemic areas should raise the suspicion for hydatid cysts.

Delayed symptoms and delayed diagnosis of hydatid cysts in younger age groups may correlate with higher lung-tissue elasticity [6]. Galanakis et al. [7] suggest that medical treatment alone can be sufficient for small pulmonary hydatid cysts. Larger cysts usually need surgical intervention in addition to albendazole (either pre-operative or pre- and post-operative). The appropriate surgical intervention in a large but non-complicated hydatid cyst is parenchyma-preserving surgery and includes cystotomy or cystotomy with capitonage, in addition to meticulous suturing of the communicating bronchioles [8].

III. Conclusion

Pulmonary hydatid cyst may be asymptomatic, sometimes mimicking upper respiratory tract infection. Only a high degree of clinical suspicion in endemic areas can clench the diagnosis. Non-complicated hydatid cysts in lung have a good prognosis regardless of their size and can be safely treated by parenchyma-preserving surgery.

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