

A Report of Hydatid Disease Mimicking Asthma in a Child

Case Report

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Author Details

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Abstract

Hydatid disease is a relatively uncommon finding in children characterized by cystic lesions mostly occurring in liver and lungs, while childhood asthma is one of the most common disorders in pediatrics. In patients with childhood asthma, other diagnoses should be considered and excluded. While the former is curable by an appropriate surgical approach, management of the latter is guided by clinical symptoms and response to therapy. Therefore, timely management of the hydatid disease is valuable in reducing the morbidity. The aim of this case presentation is to demonstrate the value of performing at least one chest x ray in children with asthma features in order to exclude other probable diagnoses.

This study reports a 2.5-year old boy with a lung hydatid cyst erroneously being treated as asthma for more than a year. The puzzling signs and symptoms mimicking asthma and the presence of asthma in his father's medical history led to the false assurance of the treating physicians of their diagnosis and therefore ignoring the need for obtaining a chest x ray in order to exclude other possible etiologies. Later, the persistent lack of response to asthma therapy raised the need for further evaluations including chest x ray which was strongly indicative of pulmonary hydatid disease. To conclude, patients with symptoms akin to asthma in endemic places for hydatid disease should be further evaluated for organic pulmonary diseases by imaging techniques, of which, chest x ray has a significant role as the initial diagnostic procedure.

Keywords: Asthma, Hydatid Cyst, X-Ray, Imaging

Introduction

While hydatid disease is a relatively uncommon finding in children characterized by cystic lesions mostly occurring in liver and lungs [1], childhood asthma is one of the most common disorders in pediatrics, management of which is guided by clinical symptoms and response to therapy [2]. However, performing chest x rays as a diagnostic tool for all children presenting with wheezing remains a matter of debate. Many studies have emphasized the need to reduce the numbers of unnecessary chest x rays in children with asthma [3, 4]. Some authors believe that the yield of chest x ray evaluations are so low [5] that they only contribute to the collective radiation risk of children [6] and therefore, they only recommend chest x ray for those with local signs

[5] or those with diagnosis of asthma in debt on initial presentation [7]. The aim of this case presentation is to demonstrate the value of performing at least one chest x ray in children with asthma features in order to exclude other probable diagnoses.

Case Presentation

A 30-month old boy was admitted to the hospital with a history of a 12-month non-productive cough without fever. Since then, he has been intermittently treated for hyper-reactive airway disease with no significant improvement. He was from a rural area from the Province of Alborz, Iran. Coughing was aggravated during the past two months with no response to medications. He also developed mild respiratory distress on running and complained of intermittent pain in his



left back recently. He had a positive family history of paternal asthma. Physical examination revealed a vitally stable and oriented child with decreased breath sounds and air entry associated with dullness to percussion on the left side of the chest while both sides were moving equally. Lab tests were non-significant: CBC {HGB:12.1g/L, WBC: 9950/ml, Platelet: 450000/ml} and Chemistry {Potassium: 4.4mmol/L, Sodium: 132mmol/L, Alanine aminotransferase (ALT):16 U/L, Aspartate Aminotransferase [4]: 32U/L, BUN: 27, Cre:0.5} results were within normal limits. Chest x-ray revealed a large sharply circumscribed

cyst within the left lung with no cyst wall calcification.

The patient was admitted and underwent surgical cyst resection. The macroscopic pathological examination revealed three membranous pieces of tan brown soft tissue totally measuring 4x3x2 cm and an ivory-white thin membranous piece measuring 9x11cm with the former labeled as adventitial layer and the latter labeled as laminated membrane and germinal layer of hydatid cyst associated with many protoscolices. The patient did quite well post operatively and during the three months in his out-patient follow-up visits (Figures 1,2).

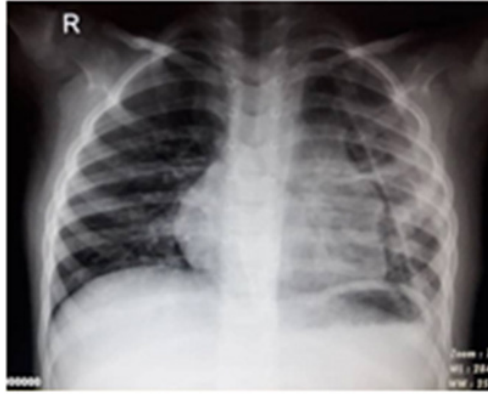


Figure 1: Radiological presentation of the hydatid cyst in the child being treated as asthma.

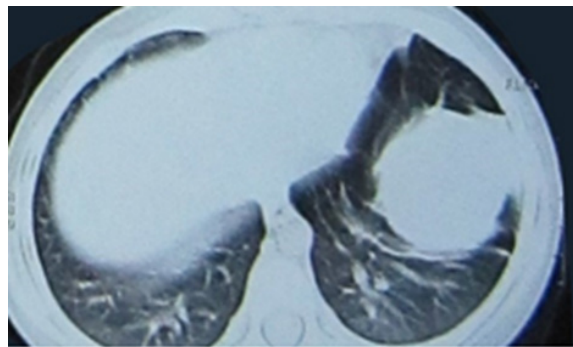


Figure 2: Chest CT scan indicative of hydatid cyst.

Discussion

This study reports a 2.5-year old boy with a lung hydatid cyst erroneously being treated as asthma for more than a year. The puzzling signs and symptoms mimicking asthma and the presence of asthma in his father's medical history led to the false assurance of the treating physicians of their diagnosis and therefore ignoring the need for obtaining a chest x ray in order to exclude other possible etiologies. Later, the persistent lack of response to asthma conventional therapy raised the need for further evaluations including chest x ray which was strongly indicative of pulmonary hydatid disease.

Hydatid disease is a parasitic infestation with the liver (60%) and lung (20%) as the most common involved organs [8, 9]. In the lung it is usually detected in the right lower lobes. Similarity of their case to our patient was not only for the unusual location of the cyst in the left lung but was also for the long period of the disease dormancy. Considering the theory of Barnes et al, regarding 1cm growth of the hydatid cyst per year [10], it seems that our reported case has had the disease since his initial symptoms. Since many other causes of wheezing are frequently seen in clinical practice, the diagnosis of asthma is based on the reversibility of the bronchospasm which is not practical in children aged less than 5 years. Therefore, chest x ray during an episode of

wheezing may become helpful in excluding non-asthmatic etiologies. Information obtained by chest x ray may provide sufficient data to alter the final outcome of the disease.

To conclude, patients with symptoms akin to asthma in endemic places for hydatid disease should be further evaluated for organic pulmonary diseases by imaging techniques, of which, chest x ray has a significant role as the initial diagnostic procedure. Therefore, performing chest x ray is strongly recommended in childhood asthma not responding to conventional asthma therapy.

Conflict of Interest

None

Authors' Contribution

All authors were involved in diagnosis, management, follow-up, and writing the manuscript.

Consent

A written formal consent was obtained from the patient's parents to publish the case.



References

1. Gupta R, Sharma SB, Prabhakar G, Mathur P (2014) Hydatid disease in children: our experience. *Formosan Journal of Surgery* 47(6): 211-220.
2. Özmen S, Bostancı I, Mısırlıoğlu ED (2017) How Often is Chest Radiography Ordered for Patients with Pediatric Asthma? *Eurasian Journal of Pulmonology* 19(2): 91-94.
3. Buckmaster A, Boon R (2005) Reduce the rads: a quality assurance project on reducing unnecessary chest X-rays in children with asthma. *Journal of paediatrics and child health* 41(3): 107-111.
4. Stanley RM, Teach SJ, Mann NC, Alpern ER, Gerardi MJ, et al. (2007) Variation in ancillary testing among pediatric asthma patients seen in emergency departments. *Academic Emergency Medicine* 14(6): 532-538.
5. Lynch BA, Fenta Y, Jacobson RM, Li X, Juhn YJ (2012) Impact of delay in asthma diagnosis on chest X-ray and antibiotic utilization by clinicians. *Journal of Asthma* 49(1): 23-28.
6. Seidenbusch M, Schneider K (2008) Radiation exposure of children in pediatric radiology. Part 4: entrance doses achieved during the X-ray examination of the chest. *RoFo* 180(12): 1082-1083.
7. Strunk RC (2002) Defining asthma in the preschool-aged child. *Pediatrics* 109: 357-361.
8. Das T, Özer M, Yagmur G, Yildirim M, Özgün A (2015) Hydatid Disease Involved in the Heart, Liver, and Kidney That Caused Sudden Death: case report. *The American journal of forensic medicine and pathology* 36(4): 265-267.
9. Sundarka M, Bansal R, Talwar V, Jindal R, Saini M, et al. (2000) Disseminated hydatid cyst disease presenting as acute respiratory distress. *J Indian Acad Clin Med* 1: 256-259.
10. Talaiezadeh AH, Maraghi S (2006) Hydatid disease in children: A different pattern than adults. *Pakistan Journal of Medical Sciences* 22(3): 329.

