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An Unusual Cause of Hemoptysis and Pulmonary Nodules

Una causa inusual de hemoptisis y nódulos pulmonares

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CASE DESCRIPTION

A 39-year-old man, former smoker, originally from Romania, comes to the emergency room due to several episodes of self-limiting hemoptoic sputum and one instance of sputum with a membranous structure reminiscent of "egg white" texture (Image 1: Scolices). The patient had undergone lung surgery in adolescence but does not recall the diagnosis or reason for it. His history includes exposure to sheep, dogs, cows, and foxes during childhood.

Physical examination revealed a baseline oxygen saturation of 96%, and lung auscultation was normal. The chest X-ray revealed bilateral nodular opacities. A chest computed tomography (CT) scan showed multiple pulmonary nodules with liquid density, some of which were multiloculated with the classic appearance of "daughter cysts", many of them with peripheral calcifications[1] (Image 2: Hydatid cysts).

Laboratory findings were unremarkable except for a slight elevation in eosinophils, at 6.7% (0.5%-5.5%).

DIAGNOSIS AND DISCUSSION

After being discharged from the hospital with empirical antibiotic therapy, the patient continued evaluation in pulmonology consultations, where a bronchoscopy with bronchoalveolar lavage was performed but did not yield any microbiological isolates.

A serology test for Echinococcus was requested, yielding a positive result for IgG against Echinococcus multilocularis: 3.63 (reference range: 0-1.1), and a positive result for the Em18:22 antigen (also positive for Em95:36 and EgAgB:216), confirming acute alveolar echinococcosis.

Given the presence of bilateral pulmonary hydatid cysts, the patient was not a candidate for surgical or percutaneous management. Therefore, it was decided to initiate treatment with albendazole 200 mg twice daily and praziquantel 2400 mg once a week for approximately six months, with periodic serological tests. After two months of treatment, the patient experienced nausea and dizziness as side effects of praziquantel. The decision was made to reduce the dose of praziquantel by half, so the patient started to receive 1200 mg of praziquantel along with albendazole, which improved tolerance.

After several months of treatment, the patient provided a report from Romania indicating that he had required surgical resection of a right-sided hydatid cyst in his adolescence, which resulted in a postoperative complication of rupture and spillage of its contents. This complication is probably the

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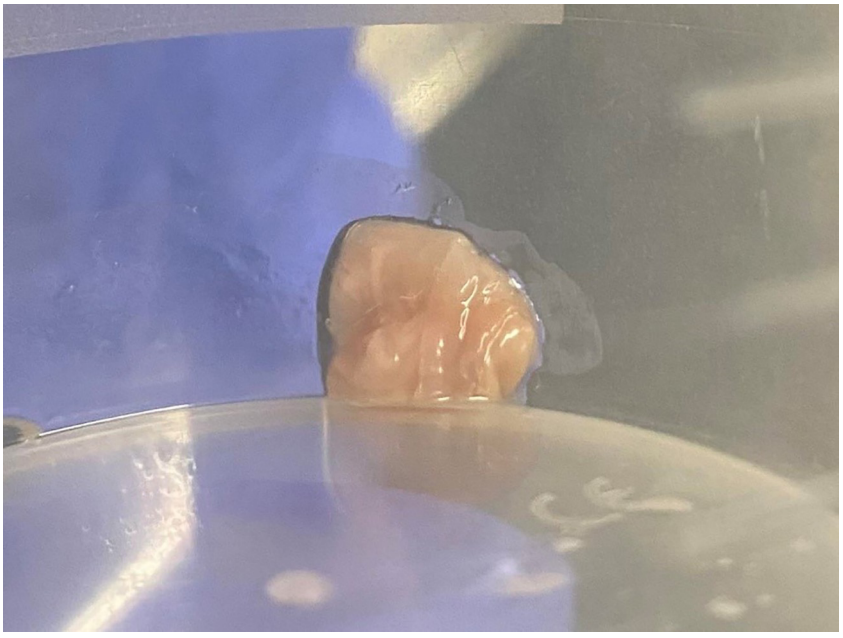

Image 1. Sputum sample from the patient showing scolices.

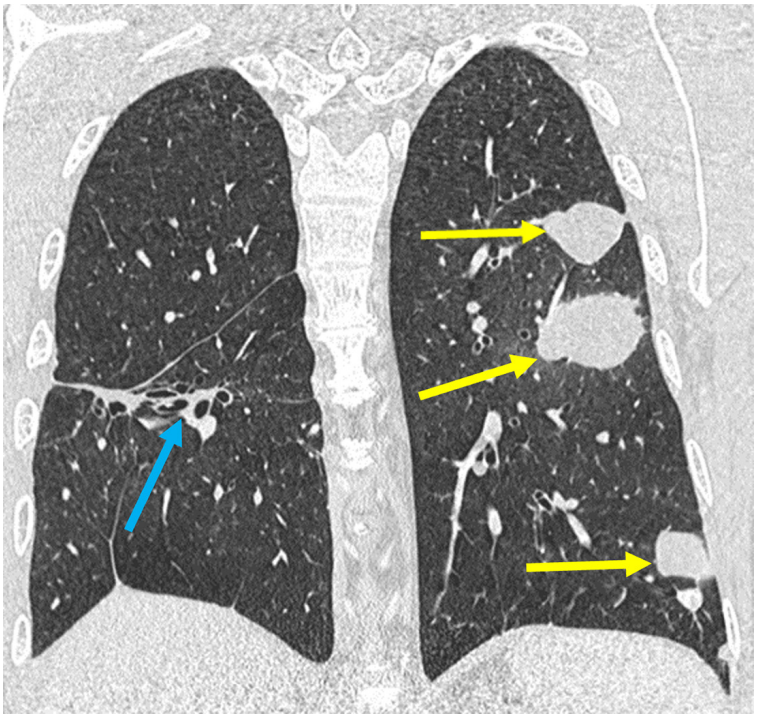

Image 2. Coronal CT scan image of the chest in lung window showing nodules (yellow arrows) and associated findings in pulmonary hydatidosis, such as bronchiectasis (blue arrow).

cause of the spread of the cyst contents to both lungs and the pleura, now resulting in disseminated pulmonary hydatidosis.

A follow-up chest CT scan was performed twelve months into treatment (Image 3: post-treatment hydatid cysts) and showed a significant reduction in the cysts located in the left upper and lower lobes. Serology also revealed improvement: IgG for Echinococcus multilocularis (2.75), Em 18 (17), Em 95 (18), EgAgB (204); IgG1 levels (402-715)

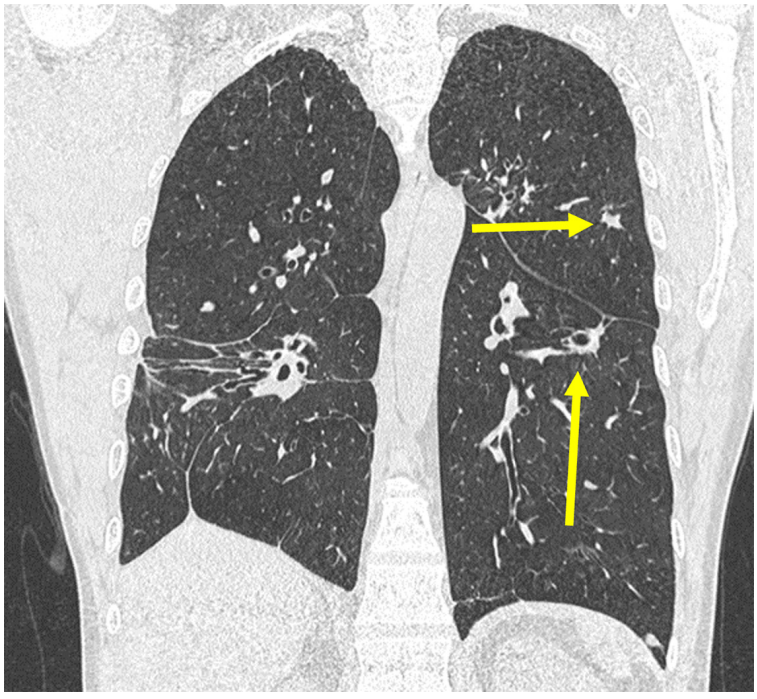

Image 3. Coronal CT scan image of the chest in lung window one year after the start of anthelmintic treatment, showing a significant reduction in the size of pulmonary nodules, leaving bronchiectasis in the left lower lobe as sequela.

dropped from 1160 to 897, and IgG4 levels (3.9-86.4) decreased from 405 to 156.

There is currently insufficient evidence for a standardized treatment for disseminated pulmonary hydatidosis. However, the combination of albendazole and praziquantel seems to be more effective than albendazole alone in reducing the risk of recurrence.[2, 3] Treatment is generally indicated for six months at the full dose, with regular monitoring of blood levels of liver enzymes.[2, 3] The Em18 antigen, IgG1, and IgG4[3] are commonly used to monitor treatment response.

The patient is currently continuing treatment and has shown remarkable clinical improvement.

Conflict of interest
The authors have no conflict of interest to declare.

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