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Case report/Kazuistyka

Hemoptysis in an asthmatic child in the course of varicella – A case report

Krwioplucie w przebiegu ospy wietrznej – Opis przypadku

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ABSTRACT

Varicella is a common childhood disease, however severe complications in otherwise healthy children are rare. The most common complications comprise bacterial superinfections and neurological disorders. Hemoptysis in children is extremely rare and usually due to trauma, exacerbations of chronic pulmonary conditions, e.g. cystic fibrosis, bacterial lower respiratory tract infections and coagulopathies. There are scarce reports in the literature on hemoptysis in children in the course of varicella pneumonitis. We report of a case of an asthmatic immunocompetent boy with hemoptysis in the course of varicella pneumonitis. Complications of chickenpox in children and causes of hemoptysis are further discussed.

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Introduction

Hemoptysis is an uncommon presentation in children usually caused by lower respiratory tract infection (16–29%) or exacerbation of chronic lung diseases, *e.g.* cystic fibrosis. Infections comprising mainly pneumonia and tracheobronchitis in most cases are bacterial in origin. Reports of viral infections causing hemoptysis in children are scarce. Less common causes include: foreign body aspiration, bronchiectasis, tuberculosis, congenital heart disease, tracheostomy related bleeding, pulmonary hypertension, pulmonary embolism, vascular anomalies, trauma and factitious hemoptysis in patients with Munchausen syndrome. Extremely rare causes in children are pulmonary tumors including carcinoid, vasculitis and hemosiderosis. In 12–18% of cases the cause of hemoptysis remains unknown [1, 2]. We report on a case of a 14-years old boy with a history of asthma who was admitted to the Pediatric Pulmonology Department because of hemoptysis.

Retrospective analysis of medical records of the patient including laboratory tests results and radiological imaging of the chest was performed.

Case report

The patient presented with productive cough with blood tinged sputum, that lasted for about a week. He denied dyspnoe, problems with breathing or any other bleeding including melena or hematuria. 10 days before admission varicella was diagnosed.

Past medical history was significant for hypothyroidism and an episode of lung contusion 5 years earlier before admission. His vaccinations were up-to date, except for varicella and *Streptococcus pneumoniae* vaccines (these are not obligatory in Poland). Family history was insignificant.

On admission the patient was well-appearing and in no acute distress. He was afebrile with body temperature 36.6 °C, his heart rate was 67/min, respiratory rate 20/min, blood pressure 105/65 mmHg; oxygen saturation on room air 93%. Physical examination revealed numerous crusted pustules, no rash or vesicles and fine ecchymoses on the skin of the extremities, palpable cervical lymph nodes on both sides, blood tinged sputum on the posterior pharyngeal wall, pectum excavatum. There were no tachycardia, rubs, murmur or gallops on cardiac examination. On lung auscultation diminished breath sounds and crackles were appreciated over both lungs. Abdominal examination was unremarkable. Extremities were without edema, joint swelling or tenderness and neurological exam revealed no abnormalities.

Complete blood count, as well as inflammatory markers (Erythrocyte sedimentation rate [ESR], C-reactive protein [CRP], procalcitonin [PCT]), coagulological studies, electrolytes, renal and liver function tests were within normal range. Blood gases were normal. Sputum and blood cultures were negative, Quantiferon test and ppd (protein purate derivative) were negative and both in culture and direct examination Mycobacterial infection was excluded.

Chest X-ray showed small nodules in the central parts of the lungs and a parynchomal density in the lower area of the left lung (Fig. 1).

CT examination of chest demonstrated ground-glass attenuation, consolidation, multiple 3–4 mm nodules throughout the lungs, and bronchial and bronchiolar wall thickening. The tree-in-bud pattern reflecting the presence of dilated centrilobular bronchioles with lumina impacted with mucus or fluid was visible in basal segments of lungs. Mediastinum was not enlarged nor hilum lymphadenopathy could be seen. No fluid in both pleural cavities was demonstrated (Fig. 2).

Bronchoscopy under general anesthesia with spontaneous respiration revealed edema, redness and vesicular lesions on the bronchial mucosa. On the left side complete bronchial obstruction was observed due to a bloody discharge. Using suction catheter the discharge was partially removed from the left main bronchus and the edematous, erythematous mucosa was observed. Patient was treated with ceftriaxon, aciclovir, exacyl and cyclonamine and gradually improved.

Control X-ray after 7 days of treatment was normal, as was the bronchoscopy performed at 13th day. Two months after initial presentation immunological status of the patient was checked and revealed no abnormalities in serum immunoglobulin levels, IgG subclasses or lymphocytes T-CD4⁺, T-CD8⁺ count and ratio, as well as B and NK cells count and CD11a, CD11b, CD11c and CD18 adhesion molecules expression on peripheral blood leukocytes.

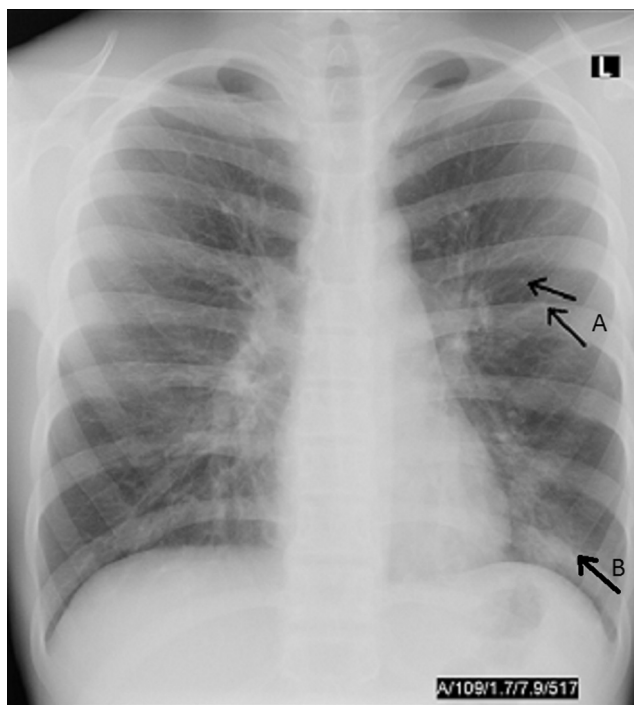


Fig. 1 – Plain X-ray of chest in p-a projection. In the central parts of the left lung small nodules (arrow A), and in the lower area of the left lung parynchomal density (arrow B)
Ryc. 1 – Zdjęcie RTG klatki piersiowej w projekcji p-a. Drobne guzki w częściach centralnych płuca lewego (strzałka A), zagęszczenia miąższowe w polu dolnym płuca lewego (strzałka B)

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