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Case Illustrated

Invasive meningococcal disease with pericarditis and pneumonia: A rare presentation in childhood

Mayla Gabriela Silva Borba [a,*], Michele Cristina Oliveira [a], Guilherme Augusto Pivoto João [a], Marcos Fernandes [a], Fernanda Matias Silva [a], Silvio Fragoso [a], Ellem Christina Silva [a], Marcelo Cordeiro-Santos [a,b]

[a] Fundação de Medicina Tropical Dr. Heitor Vieira Dourado (FMT-HVD), Manaus, Amazonas, Brazil
[b] Universidade do Estado do Amazonas, Manaus, Amazonas, Brazil

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Previously healthy 2-year-old boy presented with a 3-day history of fever, irritability and vomiting. There was no cutaneous rash. Ceftriaxone (100 mg/kg/day) and Dexamethasone 5.5 mg 6/6 h (on the first 3 days) were started and lumbar puncture was performed. Cerebral spinal fluid (CSF) showed 3.696 WBCs/μL with 99% neutrophils, glucose 1 mg/dL and total protein 578.0 mg/dL. CSF Gram stain showed extracellular and intracellular Gram-negative diplococci. Latex agglutination was reactive for *N. meningitidis* group C. The CSF culture was negative. After 6-day of antibiotic treatment patient started with dyspnea, dry cough and hypotension. Cardiorespiratory examination revealed an elevated jugular venous pressure, normal heart sounds, with no pericardial rub, coarse sounds with crackles over left base were heard. New CSF analyses showed 336 WBCs/μL with 61% neutrophils, 39% lymphocytes, protein 99.5 g/L and glucose 26 mg/dL (serum glucose 75 mg/dL). The CSF and blood cultures were negative. Chest X-ray showed an enlarged cardiac silhouette, consolidation in the left lung and pleural effusion. The antimicrobial treatment was changed to meropenem. Computed tomography of the chest showed moderate pleural effusion, consolidation in the left lobe. The cardiac echography revealed a pericardial effusion. There was no sign of imminent cardiac tamponade. Pericardiocentesis was performed and a total of 115 ml hemorrhagic pericardial fluid was aspirated. The fluid analysis demonstrated 1.460 WBC/mm^3, with 85% polymorphonuclear neutrophils and 15% lymphocytes, total proteins of 4.5 g/dL, 836 U/L LDH and glucose 60 mg/dL. No microorganism was observed by Gram and Ziehl-Nielsen stain. The pericardial fluid culture to aerobic and mycobacteria was negative. Methylprednisolone was administered for five days. Patient was discharged after 14 days of antibiotic therapy with full recovery. We present a case of meningococcal meningitis that developed two rare manifestations associated in children:

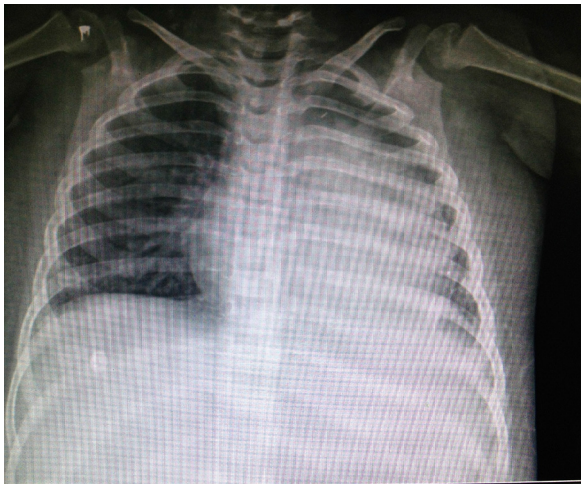

Fig. 1. Chest X-ray showed an enlarged cardiac silhouette, consolidation in the inferior lobe of left lung and pleural effusion.

* Corresponding author at: Fundação de Medicina Tropical Dr. Heitor Viera Dourado, Avenida Pedro Teixeira 25, Dom Pedro, Manaus, CEP: 69040-000, Brazil. Tel.: +55 92 21273555.
E-mail address: mayla_borba@yahoo.com.br (M.G.S. Borba).

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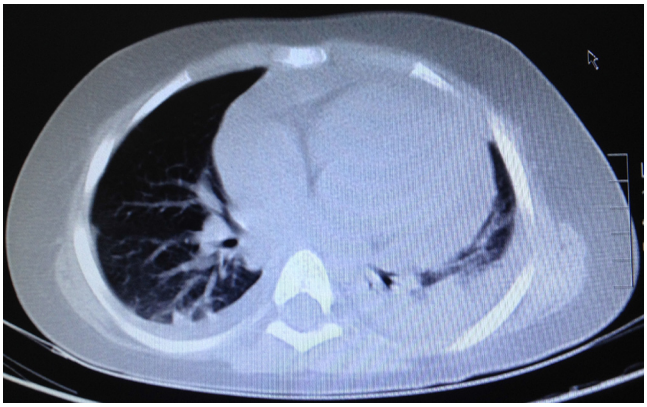

Fig. 2. Computed tomography of the chest (CTC) showed left lung atelectasis, moderate pleural effusion and consolidation in the left upper lobe. CTC mediastinal window shows moderate pericardial effusion.

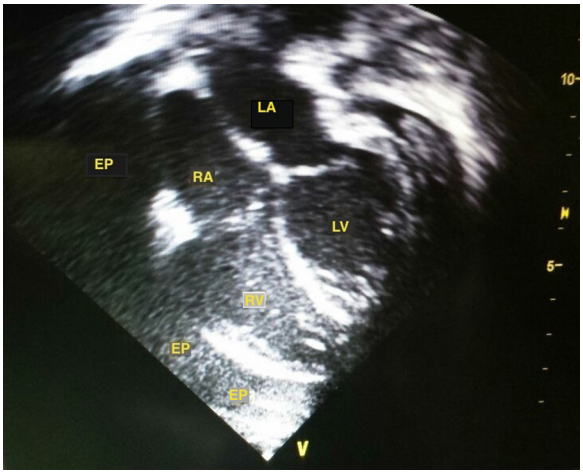

Fig. 3. The cardiac echography revealed a pericardial effusion. There was no sign of cardiac tamponade.

pericarditis and pneumonia (Figs. 1–3). Occurrence of cardiac tamponade in reactive pericarditis is most often associated in serogroup C infections [1,2], serogroup predominant in Amazon [3]. Meningococcal pneumonia is more associated with serogroup Y [4]. The forms of presentation of pericardial involvement include: disseminated meningococcal infection with pericardial, primary meningococcal pericarditis and reactive meningococcal pericarditis [1]. The hypersensitivity reaction type 3 tends to occur during the convalescent period (4–10 days after the start of antibiotic therapy) [5]. Thought to be due to a hypersensitivity reaction to previously damaged pericardial tissue, which acts as an antigen stimulus to antibody formation [5]. If the effusion is large treatment is done with high doses corticoids [1].

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