

Aspiration of Barium Sulfate during an Upper Gastrointestinal Examination

Serap Argun Baris*, Hasim Boyaci and Fusun Yildiz

Kocaeli University Faculty of Medicine, Department of Pulmonary Diseases, Kocaeli, Turkey

*Corresponding author: Serap Argun Baris, Kocaeli University Faculty of Medicine, Department of Pulmonary Diseases, Umuttepe, Kocaeli, Turkey, Tel: +90 (262)3037211; E-mail: serapargun2002@yahoo.com

Rec date: July 15, 2014; Acc date: July 18, 2014; Pub date: July 25, 2014

Copyright: © 2014 Baris SA, et al. This is an open-access article distributed under the terms of the Creative Commons Attribution License, which permits unrestricted use, distribution, and reproduction in any medium, provided the original author and source are credited.

Description

A fifty three years old man admitted to emergency department with complaints of sudden onset cough and dyspnea during the upper gastrointestinal examination. He had a history of tuberculosis twenty-five years ago. He was ex smoker and had a smoking history of 25 package/years. He was tachypneic but the other vital signs were normal at emergency room. At respiratory examination, the breathe sounds were roughened. The laboratory levels of hemogram and biochemical parameters were normal. Arterial blood gas analysis showed an acute respiratory acidosis (PaO₂: 73.7 mmHg, PaCO₂: 24.3, pH: 7.59, SaO₂: 97.4%). Chest X-ray has shown in Figure 1. What is your pre-diagnosis?

Chest x ray revealed a contrast distribution of the bronchial tree. He had history of esophageal stricture secondary to accidentally drinking corrosive substance nearly three months ago. He had some feeding problems after the esophageal stricture. The cough and dyspnea have occurred during the esophagus, stomach and duodenum graphy with barium sulfate which was performed to controlling the degree of the stricture.

As a result, the patient diagnosed with aspiration of barium sulfate to lung during the gastrointestinal examination. Oxygen therapy and nonspecific antibiotic for possible aspiration pneumonitis (ampiciline-sulbactam) were started and postural drainage techniques were performed. There was a clinical and radiological improvement fifteen days after the diagnosis (Figure 2).

Barium sulfate is an agent used widely as a contrast material for imaging studies of the gastrointestinal tract. Aspiration of barium sulfate has been reported on rare occasions, but is more frequently seen in patients with underlying anatomical or neurological defects such as head and neck deformity, esophageal stricture, diverticulum or fistula [1]. It was known that low-density barium suspensions were used for bronchography for the diagnosis of bronchiectasis in the past [2]. Aspiration of barium sulfate is not expected to cause severe lung injury in the early phase, as in our case, due to its relatively non-irritant character. However, some mortal cases associated with barium aspiration especially in elderly patients have been reported [3,4].

In conclusion, barium sulfate related aspiration pneumonitis should always be highly suspected in patients who present with dyspnea after upper gastrointestinal studies.



Figure 1: Chest X-ray



Figure 2: Clinical and radiological improvement fifteen days after the diagnosis

References

1. Chiu CY, Wong KS, Tsai MH (2005) Massive aspiration of barium sulfate during an upper gastrointestinal examination in a child with dysphagia. *Int J Pediatr Otorhinolaryngol* 69: 541-544.
2. Tamm I, Kortsik C (1999) Severe barium sulfate aspiration into the lung: clinical presentation, prognosis and therapy. *Respiration* 66: 81-84.
3. Gray C, Sivaloganathan S, Simpkins KC (1989) Aspiration of high-density barium contrast medium causing acute pulmonary inflammation report of two fatal cases in elderly women with disordered swallowing. *Clin Radiol* 40: 397-400.
4. Fruchter O, Dragu R (2003) Images in clinical medicine. A deadly examination. *N Engl J Med* 348: 1016.