



Pathology Page

Kayexalate aspiration

Yung-Hsiang Hsu*

Department of Pathology, Buddhist Tzu Chi General Hospital and Tzu Chi University, Hualien, Taiwan



ARTICLE INFO

Article history:

Received 12 December 2012

Received in revised form

20 December 2012

Accepted 24 December 2012

A 61-year-old man with diabetic mellitus, hyperlipidemia, and chronic progressive polyneuropathy and who had been bedridden for many years was admitted to the medical intensive care unit because of general weakness with dyspnea for 1–2 days. Respiratory distress occurred, and chest radiography revealed an enlarged patch of pneumonia and pulmonary edema after sodium polystyrene sulfonate (SPS, Kayexalate) was administered. He immediately died of respiratory failure. On autopsy, histopathology of the lung showed purple polygonal kayexalate crystals obstructing the bronchial lumen (Fig. 1).

SPS is used extensively for the treatment of hyperkalemia, especially in patients with renal failure. SPS aspiration is a potential complication of oral administration, especially in debilitated patients such as the patient in the above mentioned case. The aspiration of SPS was first described by Oi in 1978 in a post-term hyperkalemic baby girl with meconium aspiration [2]. After the second oral administration, the infant became cyanotic, bradycardic, and apneic, and died. The microscopic appearance of the intra-alveolar material in our case showed little tissue reaction to the foreign material, which appeared as basophilic, sharply angulated particles of varying sizes with parallel laminations, probably representing an artifact due to sectioning. This was compared with a solution of 25% SPS, which yielded similar histological features. The particular appearance of SPS on histological sections should highlight it as a possible cause of aspiration pneumonia. In our patient, SPS aspiration superimposed on bronchopneumonia may have been the immediate cause of death.

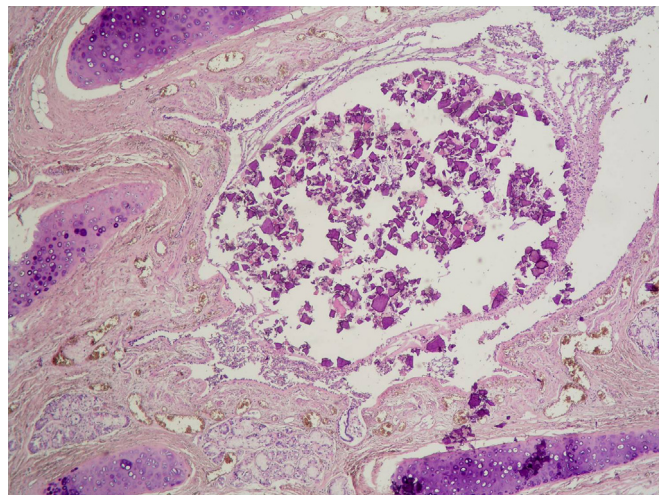


Fig. 1. Histopathology of the lung shows purple polygonal kayexalate crystals obstructing the bronchial lumen (hematoxylin and eosin $\times 40$).

Further reading

- [1] Idowu MO, Mudge M, Ghatak NR. Kayexalate (sodium polystyrene sulfonate) aspiration. *Arch Pathol Lab Med* 2005;129:125.
- [2] Oi RH. The microscopic appearance of a sodium-potassium exchange resin in histologic sections. *Am J Clin Pathol* 1978;69:359–61.
- [3] Haupt HM, Hutchins GM. Sodium polystyrene sulfonate pneumonitis. *Arch Intern Med* 1982;142:379–81.

* Corresponding author. Department of Pathology, Buddhist Tzu Chi General Hospital, 707, Section 3, Chung-Yang Road, Hualien, Taiwan. Tel.: +886 3 8565301x2190; fax: +886 3 8574265.

E-mail address: yhhsu@mail.tcu.edu.tw.