

Pneumopericardium in a one-year-old infant: an unusual complication of esophageal foreign body removal

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Özet

Bir yaşındaki bebekte pnömoperikardiyum: Özefagustan yabancı cisim çıkarılmasına bağlı nadir bir komplikasyon

Pnömooperikardiyum, özefagustan yabancı cisim çıkarılması sırasında nadiren gelişebilen bir komplikasyondur. Erişkinlerde yayınlanmış birkaç olgu olmasına rağmen, çocukluk yaş grubunda özefagustan yabancı cisim çıkarılmasına bağlı gelişen pnömoperikardiyum olgusu şu anki bilgilerimize göre literatürde yayınlanmamıştır. Bu yazıda, özefagustan yabancı cisim çıkarılmasından sonra pnömomediastinum ile birlikte pnömoperikardiyum gelişen bir yaşındaki bir olgu sunulmaktadır.

Anahtar kelimeler: Pnömomediastinum, pnömoperikardiyum, yabancı cisim, özefagus, perforasyon, çocuk

Abstract

Pneumopericardium is an unusual complication of esophageal foreign body removal. Although a few adult cases have been reported, to the best of our knowledge, pneumopericardium due to esophageal foreign body removal in children has not been published previously in the literature. Here, we present a case of pneumomediastinum with pneumopericardium that developed after esophageal foreign body removal in a one-year-old infant.

Key words: Pneumomediastinum, pneumopericardium, foreign body, esophagus, perforation, children

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Introduction

Pneumomediastinum (PM) and pneumopericardium (PC) are serious and may be fatal conditions in which air is present in the mediastinum and pericardium, respectively. The main causes of PM and PC are asthma or other conditions leading to alveolar rupture, and esophageal perforation. They may occur after gastrointestinal instrumentation, endoscopy, colonoscopy, or laparoscopic surgery (1-6). To the best of our knowledge, we report the first case of PM with PC that developed after esophageal foreign body removal in an infant.

Case report

A 1-year-old girl was admitted to our pediatric emergency service with complaints of progressive shortness of breath, progressive irritability, poor sleep

quality, fever, and dysphagia lasting 3 days. History of the patient revealed that she had swallowed a coin three days ago, and it had been removed by foley catheter in the emergency service, and she had been discharged 2 hours after the procedure with a normal chest radiogram.

On admission, her weight and height were within the normal limits. Her body temperature, heart rate, and respiration rate were 38.1 °C, 105/min, and 36/min, respectively. She had decreased breath sounds on the left site and bilateral crepitan ralles. Laboratory tests showed leukocytosis (WBC, 19300/mm³), and increased CRP (178 mg/dL) and erythrocyte sedimentation rate (131 mm/h). Plain chest x-ray (CXR) revealed enlarged right mediastinum, and an air bubble with a diameter of 2-3 cm and double contour on the left side of heart (Fig.1). Computed tomography (CT) showed PM and PC together, and an enlarged mediastinum (Fig.2A-2B). Esophagram with water-soluble contrast medium revealed an

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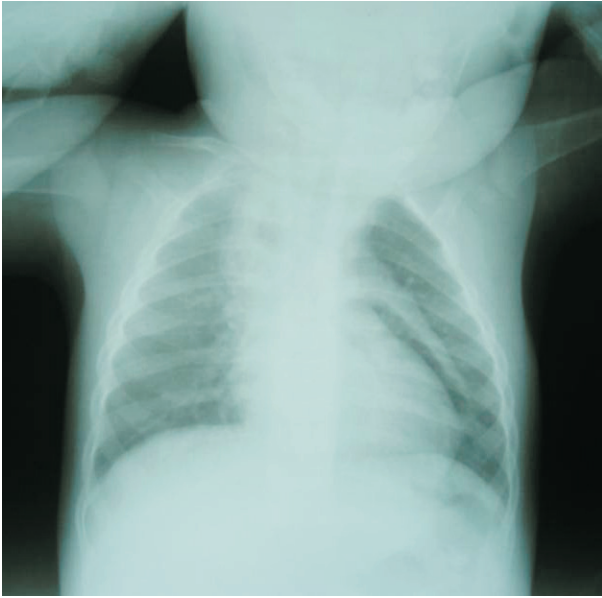


Figure 1. CXR showing enlarged right mediastinum, and an air bubble with a diameter of 2-3 cm and double contour on the left side of heart

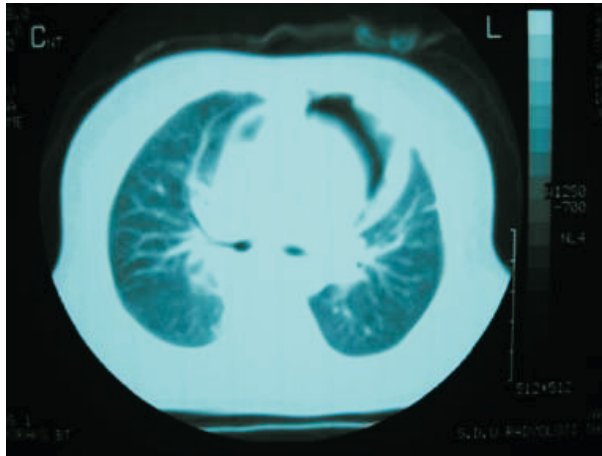


Figure 2A. CT showing enlarged mediastinum, PM and PC

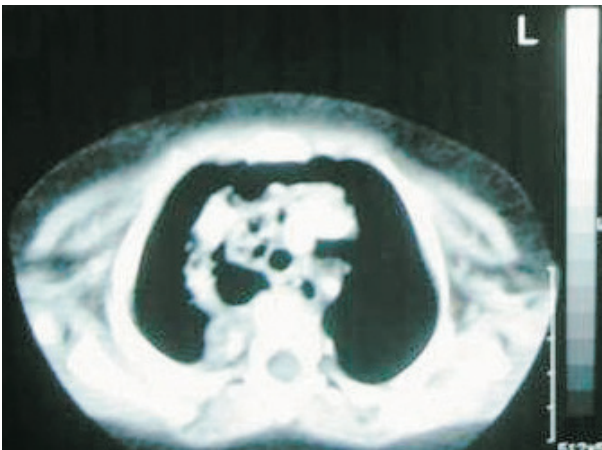


Figure 2 B. CT showing enlarged mediastinum and PM

esophagus perforation (Fig. 3), so oral intake was stopped, and broad-spectrum antibiotics and total parenteral nutrition was started. The patient was discharged after a normal esophagogram and an uneventful recovery period.

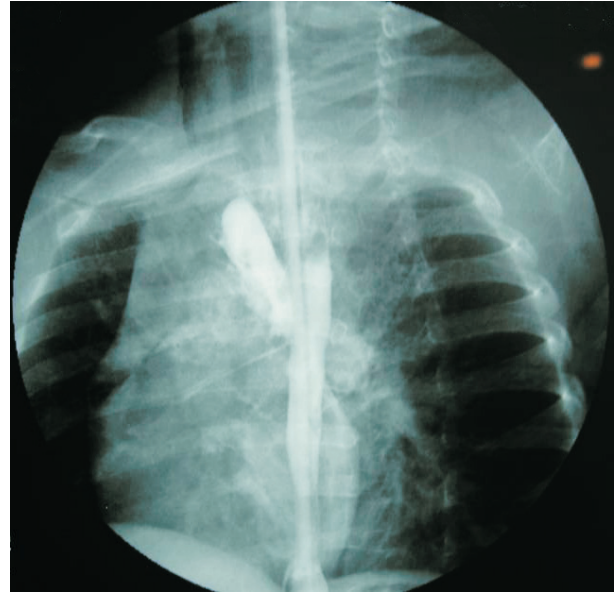


Figure 3. Esophagogram showing esophageal perforation

Discussion

Foreign body ingestion in the childhood period is very frequently seen condition. Most commonly observed foreign bodies in the gastrointestinal system are coins, marbles, pins, keys, toy parts, stones, button batteries, nails, rings, needles, and fishbones. Most swallowed foreign bodies pass harmlessly through the gastrointestinal (GI) tract. The overall risk of GI perforation is approximately 1%. Foreign bodies that damage the GI tract, become lodged, or have associated toxicity must be identified and removed (7-10). Standardized guideline for management of a foreign body is not established yet. Foreign bodies lodged in the esophagus should be removed endoscopically, but some small and blunt objects may be pulled out using a Foley catheter or pushed into the stomach using bougienage. Once they are past the esophagus, large or sharp foreign bodies should be removed if reachable by endoscope (7). Small, smooth objects and all objects that have passed the duodenal sweep should be managed conservatively by radiographic surveillance and inspection of stool (9). Endoscopic or surgical intervention is indicated if significant symptoms develop or if the object fails to progress through the gastrointestinal tract.

Intrathoracic or extrathoracic events may cause PM. Iatrogenic invasive procedures are one of the causes of extrathoracic events. Esophageal perforation, PM and PC are the serious complications which are seen during foreign body removal (11-14). Tachycardia and tachypnea are the warning signs. Fever is the precursor sign of secondary infection. Medical therapy and stopping enteral feeding are usually enough but sometimes surgical therapy is also needed. Because our patient had a history of esophageal foreign body removal, we suspected an esophagus perforation, so all essential investigations including plain chest radiogram, thorax CT and esophagogram were made immediately. Appropriate treatments were started soon after diagnosis, so life threatening complications like mediastinitis and sepsis were prevented. To our knowledge, this is the first pediatric case described in the literature where PM and PC were developed together after removal of a foreign body from the esophagus.

In conclusion, esophageal perforation is a life threatening condition especially in children. Removal of esophageal foreign bodies with the Foley catheter technique may be dangerous in several situations. So, endoscopic technique should be preferred if possible. Regardless of what technique is used, the patient must be closely monitored with serial chest radiograms after the procedure to prevent life threatening complications.

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