

Massive Asymptomatic Pleural Effusion Discovered Incidentally Following Ingestion of a Foreign Body: An Exceptional Curiosity Concerning a Case at Yaoundé Central Hospital (YCH)

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Abstract

Hydropneumothorax is a serious respiratory condition, the cause of which can be simple (common viral infection) or complex (tumour, trauma, etc.), often revealed by respiratory distress syndrome. We report a case of a 13-year-old patient who presented with hypersalivation following accidental ingestion of nail. There were no respiratory symptoms. Physical examination revealed a hemodynamically stable patient, no signs of respiratory distress. A cervicothoracic X-ray performed revealed a foreign body at the thoracic esophagus, removal was attempted using esophagoscopy without success. Foreign body was reportedly expelled in stool and a control radiograph performed to confirm expulsion revealed a left sided hydropneumothorax. A CT scan oral contrast with methylene blue dye was performed which ruled out a pleuroesophageal fistula. Patient was managed with thoracic drainage and discharged after five days with good progress. We report this completely asymptomatic case, which was revealed during an investigation into a foreign body sensation.

Keywords

Esophageal Foreign Body, Asymptomatic Hydro-Pneumothorax, Incidental Finding

1. Introduction and Interest of the Case

Hydro-pneumothorax is the abnormal concurrent accumulation of both free fluid and air in the pleural space. Accumulation of fluid and air in the pleural space causes an increase in the intra-pleural pressure which leads to a partial or total lung collapse [1]-[4].

Incidental hydro pneumothorax is the abnormal collection of both air and fluid in the pleural space that is discovered unexpectedly during imaging tests (like chest X-ray or CT scan) performed for an unrelated reason [2].

Hydro-pneumothorax could be asymptomatic or symptomatic. The typical clinical findings in a patient with hydro-pneumothorax are: sudden chest pain, shortness of breath, cough, tachypnea, tachycardia, cyanosis, diminished breath sounds, hyper-resonance on the affected side, neck vein engorgement, and paradoxical movement of the chest, deviation of the tracheal and cardiogenic shock [2] [5].

The etiologies of hydro-pneumothorax varies, we could have; spontaneous or primary hydro-pneumothorax, trauma, infection (e.g. tuberculosis), iatrogenic (e.g. accidental puncture during insertion of central line), ruptured lung cysts, esophageal rupture (boerhaave syndrome) [5].

Incidental hydro-pneumothorax is uncommon as a vast majority of hydro-pneumothorax cases presents with symptoms which eventually lead to proper investigation and diagnosis. Hydro-pneumothorax is typically a complication of a pre-existing condition such as infection (e.g. tuberculosis) malignancy, trauma, and medical procedures. 95% of patients presents with acute symptoms such as chest pain, shortness of breath etc.

We present a case of incidental hydro-pneumothorax, in a patient with no respiratory symptoms prior to admission or preexisting medical condition.

2. Case Presentation

A case of a 13-year-old male student, who was admitted at the pediatric surgical service of the Yaounde central hospital on 02/01/2026 complaining of hyper salivation, painful swallowing and blood stained saliva following accidental ingestion of a nail 30minutes prior to consultation.

In fact, patient was playing with a nail in his mouth, he suddenly realized he has swallowed the nail, this was associated with increased production of saliva, painful swallowing. Few minutes after he noticed his saliva had stains of blood. The mother attempted Heimlich manoeuver to force the object out, with no success. This prompted consultation at a nearby health center where they were immediately referred for better management at YCH.

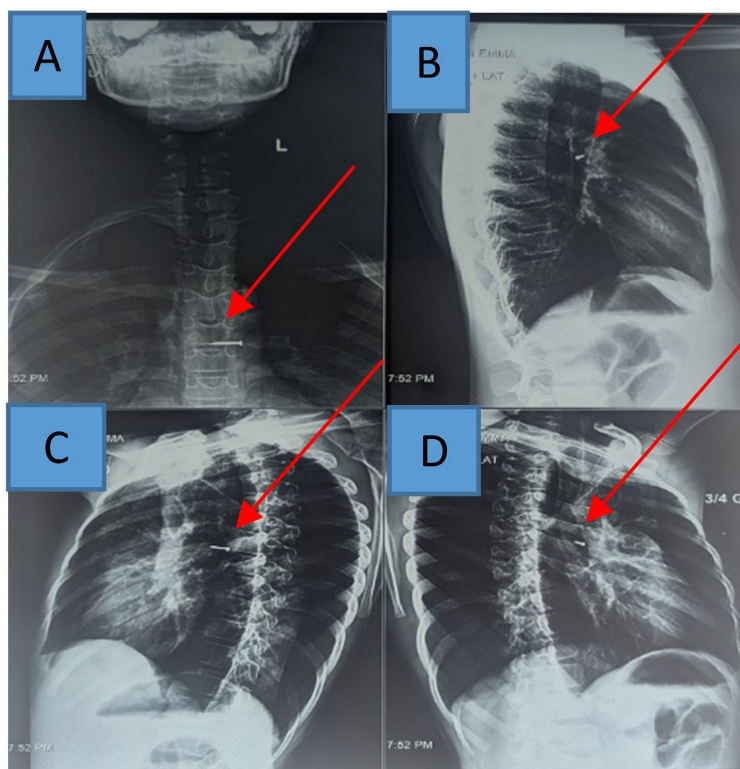
There was no relevant past medical history. Review of systems, was poor; no fever, no cough, no dyspnea, no vomiting.

On physical examination, the patient was in plain conscious and oriented. Was hemodynamically stable. Vital signs were as follows; Blood pressure 124/69 mmHg, pulse, 80 bpm, Respiratory rate 18 cpm, Oxygen saturation 98% on am-

bient air. Examination of HEENT was remarkable for streaks of blood at the oropharynx. The chest wall moves symmetric with respiration, no tenderness, percussion note was resonant, vesicular breath sounds were normal at all lung fields. The first and second heart sounds were heard at all cardiac auscultatory areas, there were no added sounds, no murmurs. The abdomen was flat, moves with respiration, non-tender, no guarding no rigidity, normal bowel sounds.

The diagnosis suggested was that of a foreign body lodged in the esophagus.

To support this diagnosis, a cervical-thoracic X-ray was requested, showing the nail in the thoracic esophagus at the level of T4 (**Figure 1**).



A: Front view; B: Side view; C: 3/4 right; D: 3/4 left (Photo library YCH).

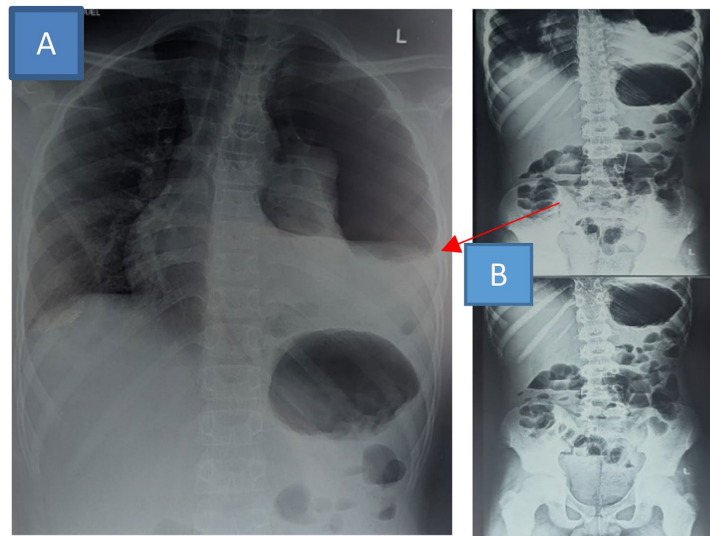
Figure 1. X-ray view showing nail at level of T4 vertebrae.

An attempt was made to extract the foreign body using oesophagoscopy under general anaesthesia with endotracheal intubation. The findings were haemorrhagic abrasions of the oesophageal mucosa without visualisation of the foreign body. No breach of the oesophageal wall was found.

Postoperative treatment included insertion of a nasogastric tube (NGT) for feeding to protect the oesophageal mucosa, NGT was removed the 4th day of hospitalization. Antibiotic treatment with third-generation cephalosporin (ceftriaxone), analgesics/antispasmodics (tramadol, paracetamol, spasfon), corticosteroids (solumedrol). The following parameters were monitored regularly: blood pressure (BP), heart rate (HR), oxygen saturation (SPO₂), temperature (T°), stools (to check for nails) and signs of peritonitis/intestinal perforation.

The nail was confirmed to have been passed out in stool by patient and care giver on Day 2 of admission. A control chest and abdominal X-ray was performed to confirm expulsion of the foreign body.

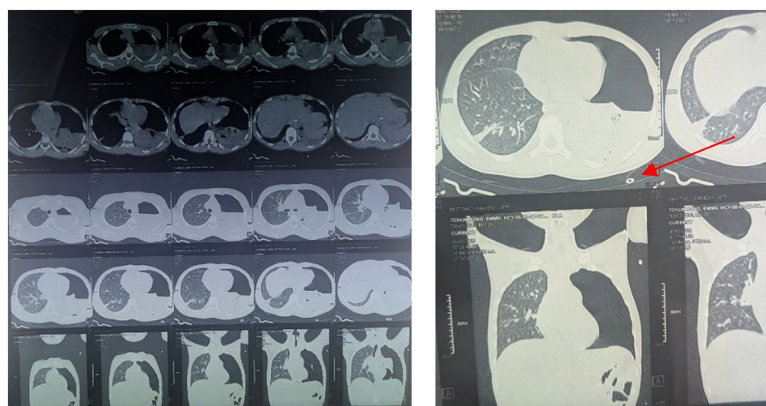
This confirmed that the foreign body was likely to be expelled during defecation. No signs of intestinal perforation were found. However, a mixed left pleural effusion was noted (**Figure 2**), Methylene blue test was performed to investigate for a pleuro-esophageal fistula which showed no communication, the only explanation for which would be a pre-existing lesion that was revealed by the trauma.



A: Chest X-ray showing left lower lung consolidation, air-fluid level, absent lung markings on the left. B: Plain abdominal X-ray, no air under the right hemidiaphragm (Photo library YCH).

Figure 2. Control imaging.

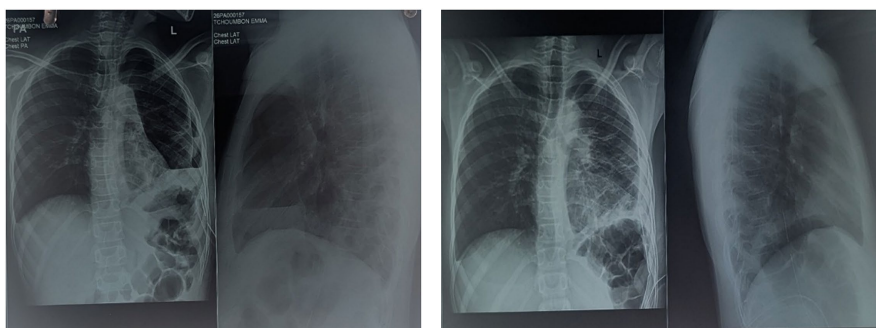
A CT scan was performed, showing consolidation of the lower left lung with air-fluid levels and partial collapse of the left lung (**Figure 3**).



(Photo library YCH).

Figure 3. Thoracic CT scan showing, moderate left hydro-pneumothorax, left lung collapse.

Treatment consisted of pleural drainage using a Joly drain 30F, which drained 250cc of sero-hematic fluid (insertion was traumatic, which explained the blood). The fluid was sent for cytobacteriological analysis, but was not realized, because of financial reason. The outcome was straightforward, with the drain being removed on the third day after satisfactory radiographic control (**Figure 4**). The patient underwent respiratory physiotherapy and was discharged on the fifth day of hospitalisation.



A: 48 hours after insertion of thoracic drain; B: Day 4 after insertion of thoracic drain (Photo library YCH).

Figure 4. Control chest X-ray.

3. Discussion

The diagnosis of hydro-pneumothorax is made on clinical and radiologic basis. The clinical presentation varies from case to case. According to *Kasagod and Awad* the most common presenting complains are; breathlessness, cough, fever and chest pain [5]. The study did not report a single case of an asymptomatic hydro-pneumothorax. Which is contrary to our finding were our patient was completely asymptomatic at presentation. Furthermore, majority of the patients had risk factors for development of a hydro-pneumothorax like; pre-existing TB infection, smoking, etc. Our case, was an apparently healthy patient with no relevant past history. In the same light, on examinations most patients with hydro-pneumothorax had, tachycardia, tachypnea and hypotension on presentation which was not the case in our patient at presentation.

As to the connection between an esophageal foreign body and a hydro-pneumothorax, esophageal foreign body are a very rare etiologies of pneumothorax, and even more rare for a hydro-pneumothorax [6]-[8]. It usually happens when the foreign body completely breach the esophageal wall, leading escape of air and/or fluid into the mediastinum and the pleura. This was not the case for our patient, as an esophagoscopy only revealed mucosa lesions which are not sufficient for passage of air or fluid to the mediastinum.

However, the differential diagnosis for hydropneumothorax in the pediatric age group are wide, ranging from infectious causes(pneumonia, Tuberculosis), traumatic causes(iatrogenic perforations), malignant causes, in most of these etiologies there are clinical clues that may orient to diagnosis, for example infectious

causes may present with, fever, cough chest pain etc. iatrogenic causes, will have a history of an invasive medical procedure recently like placement of central line or esophageal endoscopy. Malignant causes may be given away by presence of B symptoms. Our case was a patient who presented with esophageal foreign body with no evidence of a pleuro-esophageal breach, no symptoms, whose diagnosis was only made while performing imaging to assess the location of the foreign body.

4. Conclusion

Hydro-pneumothorax is a medical condition presents with symptoms, but in some rare case could be asymptomatic and could only be discovered fortuitously while doing chest imaging for unrelated reasons. We presented one of such rare cases, where our patient presented in the context of having swallowed a foreign body, and chest radiographs discovered a moderate amount of a left hydro-pneumothorax. Patient was managed with thoracic drainage and antibiotics and was discharged after five days of hospitalization in good state. Patient was given weekly follow-up.

Conflicts of Interest

The authors declare no conflict of interest in relation to this article.

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