It was inhaled not swallowed-Neglected 5 month foreign body airway

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Abstract:
A delayed detection of foreign body airway implicated high morbidity. The longer duration of the foreign body in the lung can lead to a more sinister complication. A radiolucent foreign body, non organic foreign body and unwitnessed foreign body ingestion contribute significantly to the delay in the diagnosis of foreign body aspiration. We report a case of an undiagnosed radio opaque foreign body in the right bronchus for five months in a 8-year-old child, which the onset of foreign body ingestion was witnessed by parents. Eventually he presented with pneumonia and atelectasis.

Keyword: foreign body aspiration; tracheobronchial foreign body; long-term complications

Introduction
Foreign body aspiration (FBA) is relatively less common in school-aged children. Majority (64%) of patients with airway foreign body (FB) were between one and three years of age with decreasing frequency in older age group¹. Late diagnosis of FBA were defined as occurring beyond three days between the time of aspiration of the foreign body, or onset of symptoms, and correct diagnosis. The incidence of major complications was 95% in cases with a delay in diagnosis of over 30 days after aspirating the foreign bodies². We report a case of an 8-year-old child with FBA, from retrospective history he is positive for suspected foreign body ingestion for five months, presented with pneumonia and atelectasis.

Case report
An 8-year-old boy presented to the paediatrician with productive cough and fever for one 1 week duration. Three days prior to presentation, the parents took the child to a general practitioner with similar complaints for which the child was started on a course of antibiotic and analgesics, but the symptoms seems not improved.

Upon examination, the child was not toxic looking but febrile and mildly tachycardic. He was not in respiratory distress and no wheezing heard. Lung auscultation revealed a reduced breath sound over basal area of right lung with no lung crepitation noted. Other systematic examination reveals normal finding.

Chest x-ray showed a radiopaque foreign body seen at the right perihilar region. Triangular opacity seen at right lower zone with loss of right cardiophrenic angle. The right hemidiaphragm is elevated with rib

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crowding at the right lower zone (Figure 1).
Further history from parents uncovered that they
witnessed the child accidentally ingested a ‘metal
pin’ five months ago while playing. Immediately
after the ingestion, he had bouts of cough which
resolved abruptly. No treatment was sorted as they
were confident that the ‘metal pin’ would have been
ingested and most probably had passed out in the
stool as the child had been symptom free since then.
Rigid bronchoscopy was performed and a foreign
body (Figure 2) was successfully removed from the
right secondary bronchus. Intraoperatively, there was
granulation tissue and purulent discharge surrounding
the foreign body. Post removal of the foreign body,
the child showed good improvement with intravenous
antibiotic and was discharged home well after five days.

Discussion
Children under the age of three years made up about
90% of the total number of cases of FBA. In normal
children more than three years old, delay in diagnosis
appears to result from a failure to give serious
consideration to the diagnosis as the suspicion may
be absent especially among the school-age-children2.
FBA can be fatal if it results in acute respiratory
distress or if it remains unrecognised for a long time.
Extraction of chronic FB cans be difficult due to
intense reaction of the mucous membrane.
Undiagnosed, retained FB may also cause serious
complications like pneumonia, bronchiectasis, or
atelectasis. The longer it takes to diagnose FBA,
the higher the morbidity. Significant incidence of
complications was reported in cases that took longer
than four weeks in diagnosing FBA. 60.7% presented
with complications that included pneumonia,
bronchiectasis, atelectasis, bronchoesophageal
fistula and subcutaneous emphysema3.
There are patients who develop complications such as
persistent cough and wheezing up to four weeks after
removal of foreign body. The complication rate was
as high as 60% in children who were diagnosed with
FBA after 30 days had elapsed and bronchiectasis
was a major complication in 25% of these patients4.
Duration and characteristics of FB affect symptoms
and the outcome especially in delayed cases. Delayed
arrivals and referrals followed by bronchoscopy
resulted in a higher morbidity rate. The occurrence
of FB inhalation may be followed by a symptom-free
period. The FB remains unperceived and this leads to
misdiagnosis5.
FBA was incorrectly diagnosed and treated as
pneumonia in 27% of cases in one study. This in turn
prolonged the diagnosis of FBA by a mean of 49
days than in patients with a correct initial diagnosis,
even though a history of choking was often present6.
A non organic non obstructing foreign body can be
sub clinical for a period of time until there is mucosal
reaction and secondary infection took place. FBA
can also mimic other disease processes, leading to
a misdiagnosis of pneumonia, croup, asthma, or
bronchitis. Especially in a radiolucent foreign body.
The common clinical symptoms are cough, dyspnea,
wheezing, fever, and stridor. Chronic cough,
recurrent or persistent pneumonia, unexplained
fever, lung abscess, and general malaise are common
presentations of chronic airway FB7.
Parental negligence is the most important factor
among those that caused a delay in diagnosis of
FBA. Approximately 50% of FBs were not detected

Figure 1: Foreign body at right perihilar region with right
lower lobe atelectasis

Figure 2: Thumbtack removed from right secondary bronchus
for more than 3 days, usually because the initial choking episode was not witnessed, because there were no symptoms and signs after the choking episode, or because the parents lacked medical knowledge. In some cases, parents did not notice the aspiration. They seek medical attention only when some complications such as pneumonia, bronchitis, and fever had been developed like in this case. 

**Conclusion**

In conclusion, parental awareness is important. A witnessed foreign body ingestion which is followed by choking episodes must not to be taken lightly and it needs medical attention. A simple chest x-ray will easily detect a radio opaque foreign body. A non organic, non obstructing foreign body may not gives any early symptom that can lead to delay in diagnosis and subsequently high morbidity. Early bronchoscopy and foreign body removal could prevent unwanted complications during and even after the removal of foreign body.

**Ethical clearance:** This case report was approved ethically from ethics committee of Universiti Sains Malaysia Health Campus, 16150 Kota Bharu, Kelantan, Malaysia.

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