CASE REPORT

Haemoptysis in an intravenous drug user: injection needle impacted in the left main bronchus

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SUMMARY

We report a case of a 35-year-old man who presented with 4-week history of haemoptysis, with a history of intravenous drug use. There was no other significant medical or surgical history and no recollection of any foreign body aspiration. Chest X-ray and CT scan showed 40 mm long needle in left main bronchus, partly lying outside the bronchus into the mediastinum. Flexible and rigid bronchoscopes proved to be unsuccessful in retrieving the needle. We proceeded with left posterolateral thoracotomy and the left main bronchus was explored to take out this 21-gauge (green) injection needle. The distal half of the needle with the sharp end was lying in the mediastinum piercing through the bronchial wall. Surgery was uneventful with good postoperative recovery and the patient was discharged 4 days later.

INVESTIGATIONS

All blood results were within normal range including the coagulation screen. On the chest X-ray a dense linear object was identified within the left main bronchus in posteroanterior and lateral views (figure 1A, B). A chest CT confirmed the presence of this dense linear object within the left main bronchus approximately 2 cm distal to its origin. The object measures 40 mm in length and 3 mm in width in the left main bronchus, extending through its wall into the mediastinum (figure 2A–C). No mediastinal, hilar or axillary lymphadenopathy was seen on CT scan.

TREATMENT

Flexible bronchoscopy proved negative to show anything. On rigid bronchoscopy, the FB was not

BACKGROUND

Aspiration of foreign body (FB) into the tracheobronchial tree can occur in all age groups. This condition is more common in children and the elderly but relatively uncommon in adults unless having an underlying condition such as mental retardation, a neurological disorder, alcohol or sedative abuse.¹ FB aspiration is often a serious medical condition demanding timely recognition and prompt action as delayed diagnosis and subsequent delayed treatment is associated with serious and sometimes fatal complications.² This tracheobronchial FB can be very difficult to remove depending on the type and location of the FB.

CASE PRESENTATION

A 35-year-old man presented with a 4-week history of haemoptysis. The patient had a history of intravenous drug use for the past 10 years but had no other medical or surgical problem. He also had no recollection of any event of FB aspiration in the recent past. Examination was unremarkable with no signs and symptoms of respiratory or any other disease. Haemoptysis was mild in nature as there was presence of blood every time patient spat.

Regarding substance abuse history which was confirmed from a national drug treatment centre, the patient was on and off drugs (heroin, cannabis and benzodiazepines) for the past 10 years. Heroin was the main drug he used to take intravenously. He was admitted and treated twice in a national drug treatment centre for detoxification successfully and was placed on methadone maintenance programme. Unfortunately on both occasions he went into relapse after some time due to some social and family issues.

Figure 1 Chest X-ray of the posteroanterior (A) and left lateral (B) views showing the needle in left main bronchus.

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Figure 2 CT scan: (A) the pilot image showing the needle partly in the left main bronchus while partly outside in the mediastinum. In the coronal (B) and axial (C) views, needle can be seen through the wall of the left main bronchus.

visible easily as this was deeply lodged into the bronchial wall and was covered with granulation tissue. It was attempted twice to remove this needle with rigid bronchoscope but technically proved to be unsuccessful. So we proceeded with left posterolateral thoracotomy and the chest was opened through fifth intercostal space. Left main bronchus was explored to remove this needle. This was 40 mm long, 21-gauge (green) injection needle as shown in (figure 3) taken at the time of surgery. The proximal part of the needle was within the bronchus while the sharp distal end was in the mediastinum lying in proximity to the main pulmonary artery. The left main bronchus was stitched back with absorbable sutures. The chest was closed in standard fashion with two drains, one in the apex and the other in the base and connected to 20 cm water suction. The chest drains

Figure 3 A 40 mm long Green (21 gauge) injection needle removed from the left main bronchus. Picture taken at the time of surgery.

were removed on the following day after confirmation of no air leak.

OUTCOME AND FOLLOW-UP

The postoperative course was unremarkable and the patient was discharged home without any sequelae 4 days later.

DISCUSSION

FB aspiration into the airway is a common and serious problem. A variety of different foreign bodies such as food, tablets, medical apparatuses, dental prosthesis and others have been reported in adults.² The symptoms of FB aspiration range from coughing, wheezing, dyspnoea, haemoptysis to choking. Early diagnosis of an aspirated tracheobronchial FB is essential, and delay in treatment may be dangerous and fatal. Late complications of aspirated FBs are reported to be bronchial stenosis, recurrent pneumonia, lung abscess formation and bronchiectasis, which may result in lung destruction. Injury to surrounding structures due to migration, which leads to pneumothorax, haemothorax, bronchopleural fistulae, massive haemoptysis, etc, is another possible late complication. These complications do not always happen, but once developed, they tend to be serious and intractable. Therefore airway foreign bodies shortly after aspiration should be removed as soon as possible. However, they may remain undetected for years causing trivial and non-specific symptoms.

In most cases the diagnosis is confirmed by chest X-ray. CT of the chest may be valuable in identifying small aspirated objects, non-radio-opaque FB as well as the exact size and location of the object. Bronchoscopy is frequently diagnostic and therapeutic in majority of the cases but surgery constitutes the final, definitive option in technically difficult cases.³

There have been reports of aspiration of head scarf pins in young women and turban pins in men in some ethnic groups.⁴ As in all these cases of sharp objects aspiration there is definitive history and presentation is quicker to seek medical help. In our case the patient has no recollection of any incident about aspiration of any FB, assuming the patient must have been heavily intoxicated at the time of incident. This case is unusual and interesting, there are reports available in literature about central embolisation of broken needles in intravenous drug users,^{5 6} but to our knowledge, aspiration of an intact injection needle is rarely documented.

In conclusion, an accurate history and a high index of suspicion are determining factors leading to a diagnosis of

tracheobronchial FBs, but patients and physicians often neglect the importance of detailing the remote history of FB aspiration. Our patient did not mention any episode of aspiration and FB aspiration was not in differential diagnosis, until the needle became obvious on chest X-ray and CT scan.

Learning points

- ▶ Foreign body aspiration can occur without any past recollection of aspiration episode especially with a history of drug or alcohol abuse and should be in differentials with haemoptysis.
- ▶ Foreign body aspirations are well tolerated in adults for long durations until becoming symptomatic.
- ▶ Majority of the foreign bodies can be taken out easily by flexible or rigid bronchoscopy but surgery constitutes the definitive option in technically challenging cases.

Contributors The authors were directly involved in the patient care and helped in writing and formatting the final version of the article.

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REFERENCES

- 1 Adnan Y, Esen A, Ebru D, *et al.* Occult bronchial body aspiration in adults: analysis of four cases. *Respirology* 2004;9:561–3.
- 2 Baharloo F, Veyckemans F, Francis C, *et al.* Tracheobronchial foreign bodies: presentation and management in children and adults. *Chest* 1999;115:1357–62.
- 3 Hasdiraz L, Bicer C, Bilgin M, *et al.* Turban pin aspiration: non-asphyxiating tracheobronchial foreign body in young Islamic women. *Thorac Cardiovasc Surg* 2006;54:273–5.
- 4 Al-Sarraf N, Jamal-Eddine H, Khaja F, *et al.* Headscarf pin tracheobronchial aspiration: a distinct clinical entity. *Interact Cardiovasc Thorac Surg* 2009;9:187–90.
- 5 Norfolk GA, Gray SF. Intravenous drug users and broken needles—a hidden risk? *Addiction* 2003;98:1163–6.
- 6 Moussa O, Mittapalli D, Suttie S. Needle embolisation to the right ventricle: multiple complications in a complex patient. *Eur J Vasc Endovasc Surg* 2013;45:97.

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