

NOSE STUD SCREW ASPIRATION – A TINY FOREIGN BODY WITH POTENTIALLY HUGE DISASTER: 2 CASES WITH DIFFERENT WAYS OF RETRIEVAL

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ABSTRACT:

Foreign body aspiration refers to accidental inhalation of foreign body into the respiratory tract. More commonly observed in children, foreign body aspiration is less common in adults. Traditionally observed amongst Indian women, nose piercing and jewellery are gaining popularity in various communities for the past decade. Aspiration of tiny nose jewellery such as nose stud screws is a serious and potentially fatal event. Small foreign bodies may dislodge further into the subsegmental bronchus, rendering bronchoscopic retrieval technically challenging. Herein, we report the first 2 cases of nose stud screw aspiration. Both of our patients were asymptomatic. Both foreign bodies were successfully retrieved via bronchoscopy using different tools and methods.

Keywords: Aspiration, Bronchoscopy, Foreign body, Nose stud, Piercings.

INTRODUCTION:

Nose piercing is traditionally a common practice among women of Indian ancestry. The practice of nose piercing has gained significant popularity in various communities worldwide for the past decade. The practice can potentially lead to aspiration of nose jewellery such as screws of nose studs. Aspiration of small foreign bodies can be silent although potentially serious and life-threatening sequelae can happen in long term. Herein, we present 2 patients of Indian ancestry who aspirated screw of nose studs with different methods of retrieval.

CASE REPORT:

Case 1

A 50-year-old lady of Indian descent with diabetes mellitus, hypertension and end-stage kidney

disease was referred for an abnormal chest radiograph. Her chest radiograph was done initially to assess her fluid status post haemodialysis for chronic kidney failure. The chest radiograph revealed a foreign body at the right lower lobe lung field (Figure 1(A) and (B)). She was otherwise asymptomatic and could not recall any episodes of foreign body aspiration. Flexible bronchoscope did not reveal any foreign body in the right segmental bronchi due to contact bleeding secondary to friable bronchial mucosa. Urgent computed tomography revealed a screw shaped foreign body in the posterior basal segment (RB10) of the right lower lobe with segmental collapse (Figure 1(C) and (D)). After a multidisciplinary discussion involving pulmonologists, cardiothoracic surgeons, anaesthetists, patient herself and family members, a decision was made to proceed with foreign body

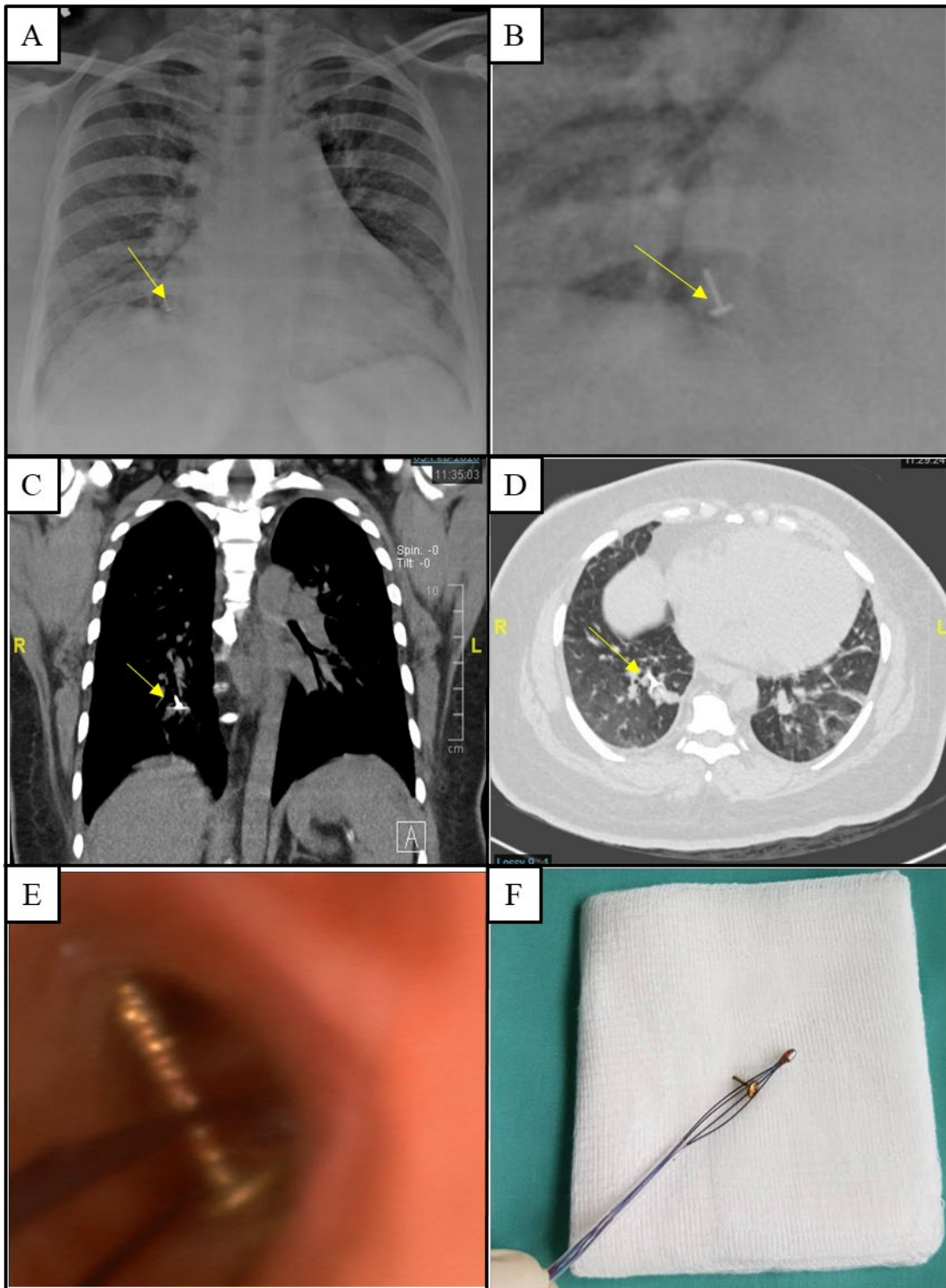


Figure 1: Chest radiograph, Computer tomography, bronchoscopy image, and image of the foreign body. (A) Chest radiograph showing small radio-opaque foreign body in the right lower lobe (yellow arrow). (B) Magnified image of the foreign body in the chest radiograph (yellow arrow). (C) Contrasted computed tomography of thorax (mediastinal window) in coronal view revealed a screw shaped foreign body in the posterior basal segment (RB10) of right lower lobe (yellow arrow). (D) Contrasted computed tomography of thorax (lung window) in axial view showing the foreign body located at posterior basal segment (RB10) of right lower lobe with segmental collapse (yellow arrow). (E) Foreign body embedded into bronchial mucosa, surrounded by granulation tissue. (F) Successful retrieval of screw of nose stud using retrieval basket.

removal under rigid bronchoscopy and fluorography guidance. Due to the distal location of foreign body, we utilised a thin bronchoscope (aScope™ 4 Broncho, Ambu, Ballerup, Denmark; outer diameter 3.8cm, working channel 1.2cm) to aid in localization of the foreign body. A metallic foreign body- specifically a nose stud screw, was discovered in the lateral segment of right lower lobe (RB9) and was embedded into bronchial mucosa, surrounded by granulation tissues (Figure 1(E)). The nose stud screw was carefully retrieved by using a retrieval basket after initial unsuccessful attempts to remove it via grasping forceps (Figure 1(F)). Fluorography post procedure showed no residual foreign body. There were no immediate complications and she was discharged well on the next day.

Case 2

A 38-year-old Indian lady with schizophrenia was referred for incidental finding of a foreign body in the right perihilar region on chest radiograph. Her chest radiograph was initially done to rule out physical injuries as she complained of chest discomfort after a fall while in the ward. She could not recall any foreign body aspiration episodes. Computed tomography confirmed the foreign body in the right main bronchus (Figure 2(A) and (B)). Initial attempts to remove the foreign body was unsuccessful via flexible bronchoscope as she was uncooperative despite on sedation. After a multidisciplinary discussion, a decision was made to proceed with rigid bronchoscopy under general anaesthesia. A golden nose stud screw was discovered at the opening of medial segment (RB5) of right middle lobe. The nose stud screw was gently removed by using a rigid forceps under direct visualisation. She was successfully extubated on the same day and discharged well a day later.

DISCUSSION:

Foreign body aspiration is most commonly observed in children less than 4 years old, but can happen in adults, especially among those with neurological disorders [1-3]. The following groups of adults are at increased risks of foreign body aspiration, namely: (1) adults who undergo oropharyngeal procedures, (2) patients intoxicated with sedatives or alcohol, (3) patients with underlying neurological or psychiatric disorders,

(4) adults who are subjected to oropharyngeal procedures and (5) adults with various nasal or oral appliances [3].

Commonly aspirated foreign bodies include organic materials such as bones, seeds, nuts as well as inorganic materials such as coins and pins [4]. Larger foreign bodies tend to lodge at the trachea or main bronchi (especially at the right main bronchus) [1, 2, 4]. This is due to the fact that the right main bronchus is wider and follows a more vertical trajectory compared to a more horizontal orientation of the left main bronchus, making it easier for foreign bodies to lodge at the right side instead of the left due to gravity. Patients with foreign body inhalation can present with symptoms such as cough, shortness of breath and haemoptysis. Occasionally, some can present acutely with asphyxia. Clinical presentations are usually acute onset following aspiration, but sometimes can be undetected for several years until imaging such as chest radiograph is done [5]. In contrast, small foreign bodies such as screw of nose stud as illustrated above did not give any symptom to the patients. In both of our cases, the foreign bodies were found incidentally by chest radiograph done for other reasons.

Airway foreign bodies should be regarded as a medical emergency. Foreign body in the airways and its evolution can cause bronchial stenosis, abscess, atelectasis, pneumonia and bronchiectasis [4, 6]. Various methods of foreign body retrieval utilizing flexible or rigid bronchoscopy have been described in literature [1, 2, 4, 7]. In both of our cases, we resort to using rigid bronchoscopy as flexible bronchoscopy were unsuccessful in retrieval of nose stud screws. We were unable to locate the foreign body in the distal location in the first case due to contact bleeding. In the second case, the patient was uncooperative. Performing rigid bronchoscopy under general anaesthesia for such conditions provide better control of the airway as well as allowing utilization of various tools such as grasping forceps and retrieval baskets. It also prevents dislodgement of foreign body while passing narrow portions of the airway, such as through vocal cord and epiglottis.

Removing small foreign bodies such as nose studs or nose stud screws can be challenging as they can easily dislodge to distal airways and in areas not visualized by flexible bronchoscopy. In the first

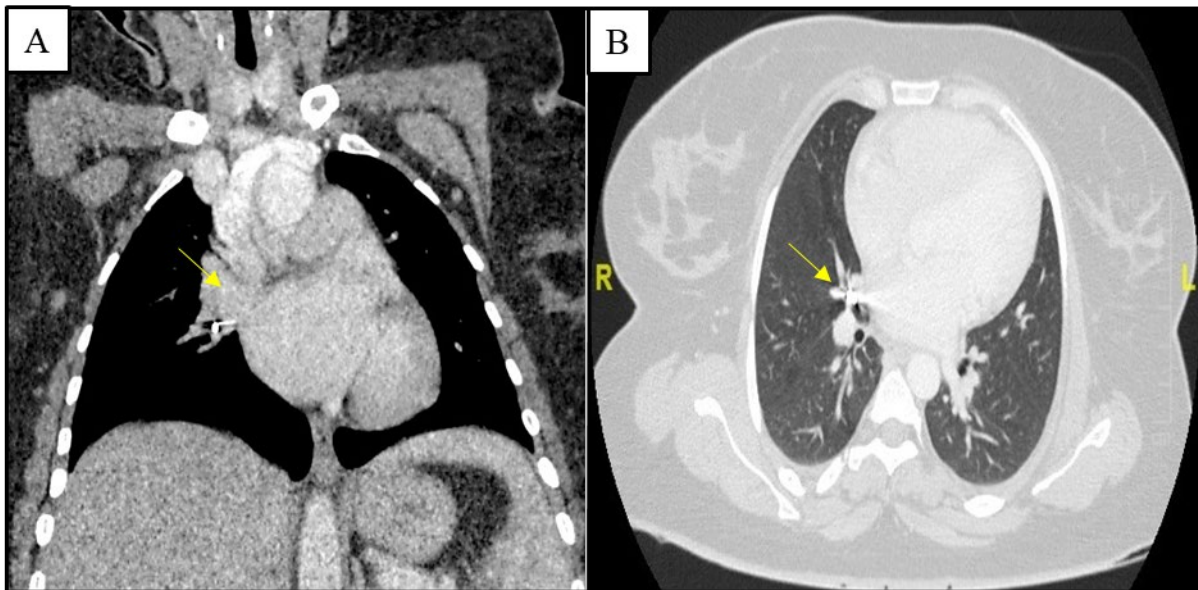


Figure 2: Computer tomography image and image of foreign body. (A) Contrasted computed tomography of thorax (mediastinal window) in coronal view demonstrating foreign body in the right main bronchus. (B) Contrasted computed tomography of thorax (lung window) in axial view demonstrating foreign body in right main bronchus.

case, we were only able to visualize the foreign body when using a thin scope. We managed to retrieve the small foreign body only via retrieval basket. If all bronchoscopy methods fail to retrieve the foreign body, patient would need to go through surgical procedure such as segmentectomy of the lung to remove the foreign body. If foreign body is located near the main bronchus, retrieval is usually straight forward with rigid bronchoscope and rigid forceps.

As both of our patients were asymptomatic, this raises the question on whether a conservative approach would be acceptable. Nagano et. al. described a patient presenting with massive haemoptysis after a prolonged period of relative quiescence due to a long-standing small foreign body. That patient unfortunately required a left lower lobectomy for foreign body retrieval and for control of haemoptysis[8]. Wu et. al. on the other hand reported a case of foreign body causing bronchiectasis, causing recurrent infection and haemoptysis [9]. We believe that timely diagnosis and prompt removal of foreign body is vital to avoid such complications.

While aspiration of scarf pins among Muslim girls and ladies who wear hijab, called the “hijab syndrome” have been extensively reported [10, 11], there is a paucity of publications regarding “nose-stud syndrome” among Indian communities. To the best of our knowledge, this is

the first case report delineating aspiration of screw of nose studs and their retrieval methods. The incidence and burden of nose stud aspiration remains unknown, and is likely underreported and underrecognized, as patients can remain asymptomatic. Unlike the hijab syndrome, which is largely confined to hijab wearers, the implication of “nose stud syndrome” could potentially be even bigger. Nose piercing and jewellery is traditionally a common practice amongst women of Indian ancestry, bearing both cultural and religious significance. In the past decade however, body piercing and jewellery has increased in popularity in both Western and Eastern communities. Various parts of the body including the tongue, lips, nose, navel or even genitals may be pierced. The nose can be pierced through nasal septum or in fleshy nares before applying nasal jewellery. Apart from aspiration of nasal jewellery, other complications include infection, nasal hematoma, perichondritis, bleeding and necrosis of cartilaginous nasal walls can occur as a result of nasal piercings and jewellery [12].

CONCLUSION:

In conclusion, foreign body aspiration can still occur in adults despite being uncommon. Aspiration of small objects such as nose studs can go unnoticed as patients might be asymptomatic.

Removal of retained foreign bodies requires bronchoscopy for both diagnosis and treatment. Surgery is reserved for cases with extensive pulmonary damage or in an event where bronchoscopy fails to retrieve foreign bodies. Finally, we hope that our case report can help to increase awareness and understanding of potential dangers of nose piercing.

STATEMENT OF ETHICS:

Informed consent was obtained from the patient for the publication of this work.

CONFLICTS OF INTEREST:

The authors have no potential conflicts of interest to disclose.

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DATA AVAILABILITY STATEMENTS:

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REFERENCES

1. Sehgal IS, Dhooria S, Ram B et. al. Foreign body inhalation in the adult population: Experience of 25,998 bronchoscopies and systematic review of the literature. *Respir. Care.* 2015;60(10):1438-1448.
2. Debeljak A, Sorli J, Music E et. al. Bronchoscopic removal of foreign bodies in adults: Experience with 62 patients from 1974–1998. *Eur Respir J.* 1999;14(4):792.
3. Jaggi S, Kumar A, Garg K et. al. Foreign body aspiration: An unusual presentation and outcome. *J Clin Diagn Res.* 2017;11(9): OD08-OD09.
4. Dikensoy O, Usalan C, Filiz A. Foreign body aspiration: clinical utility of flexible bronchoscopy. *Postgrad Med J.* 2002; 78(921):399-403.
5. Lin L, Lv L, Wang Y et. al. The clinical features of foreign body aspiration into the lower airway in geriatric patients. *Clin Interv Aging.* 2014; 9:1613-1618.
6. Oliveira CF, Almeida JF, Troster EJ et. al. Complications of tracheobronchial foreign body aspiration in children: Report of 5 cases and review of the literature. *Rev. Hosp. Clín.* 2002;57(3):108-111.
7. Kogure Y, Oki M, Saka H. Endobronchial foreign body removed by rigid bronchoscopy after 39 years. *Interact Cardiovasc Thorac Surg.* 2010;11(6):866-868.
8. Nagano H, Maeda A, Kato T et. al. Massive haemoptysis caused by a long-standing foreign body in the airway. *Respirol. Case Rep.* 2020;8(7):e00647.
9. Wu XL, Wu L, Chen ZM. Unusual bronchial foreign bodies with localized bronchiectasis in five children. *Case Rep Med.* 2019:1-8.
10. Baram A, Kakamad FH, Bakir DA. Scarf pin-related hijab syndrome: A new name for an unusual type of foreign body aspiration. *The J Int Med Res.* 2017;45(6):2078–2084.
11. Othman S, Kakamad FH, Salih RQ et. al. Hijab Syndrome; a neglected but serious health problem in Muslim communities: A systematic review. *Edorium J Public Health.* 2018;5:1-5.
12. Meltzer DI. Complications of body piercing. *Am Fam Physician.* 2005;72(10):2029-2034