Case Report

Whistle lower-better late than never

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ABSTRACT

16 years old boy with childhood history of chronic respiratory symptoms requiring several admissions presented with recent worsening of symptoms. Chest x-ray showed left lower lobe collapse and flexible bronchoscopy revealed stenosis of left main bronchus. Foreign body was seen beyond the stenosis, which was removed after dilatation of narrowed bronchus under general anesthesia using rigid bronchoscopy. Patient's father gave a history of aspiration of whistle 14 years ago, which had then been removed. Patient is now free of symptoms after removal of foreign body.

KEY WORDS: Cryo extraction, retained foreign body, rigid bronchoscopy

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INTRODUCTION

Foreign bodies fascinate the most laid back of interventional pulmonologists. Presentations vary, complications differ and yet, management remains the same, which is removal. Nothing galvanizes the team as when the code for a foreign body (FB) is communicated, especially if the case is a kid where such situation is usually encountered. Presentation is acute in vegetable foreign body aspiration, especially in kids of age group 1-3 years, with new onset wheeze, breathlessness or fever. It tends to be less dramatic in non-organic foreign bodies unless there is lung collapse or involvement of trachea. Occasionally non-organic FB can be retained for years with bizarre presentation, which can be mistaken for endobronchial tumors or bronchiectasis. Such FB is a cause for a significant heartburn to both the patient and treating physician as unless it is removed it causes chronic symptoms and leads to irreversible damage. The case of interest is one such with the diagnosis missed for over 14 years.

CASE REPORT

A 16-year-old male was diagnosed with bronchial asthma since childhood, had recurrent hospital admissions with exacerbations. Patient reported a recent worsening of symptoms for the last year for which he was evaluated and chest radiology revealed left lower lobe collapse. He was taken up for a bronchoscopy, which revealed a web-like stenosis of distal left main stem bronchus with a residual lumen of about 4 mm [Figure 1] and in view of small residual lumen an ultrathin pediatric bronchoscope (Olympus BF type 3c160) was used. Bronchoscope could be negotiated past the stenotic segment and to our surprise found a freely mobile object moving between upper and lower lobes with each breath [Figure 2]. Patient was questioned after the procedure regarding history of aspiration and he denied recollecting any incident. Whistle was blown when the patient's father said that the patient had aspirated a whistle or part of one when he was about 2 years of age. He had a violent bout of cough for which he was evaluated and suspected whistle was removed. Now with the diagnosis clear, patient was taken up for rigid bronchoscopy, intubated with size 6 ventilating tracheobronchosope and bevel was positioned at distal left main bronchus. Flexible bronchoscope was introduced through this conduit and Mercedes Benz like

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peripheral cuts given using eletrocautery knife to the web like stenosis [Figure 3]. Serial balloons introduced across the stenotic segment and gradually dilated up to 10 mm, bronchoscope negotiated beyond to visualize the foreign body. The FB was extracted using cryoprobe introduced through the channel of flexible bronchoscope [Figures 4 and 5]. Patient was extubated on table and has been symptom-free ever since. The FB turned out to be a piece of plastic probably part of the whistle aspirated 14 years back [Figure 6].

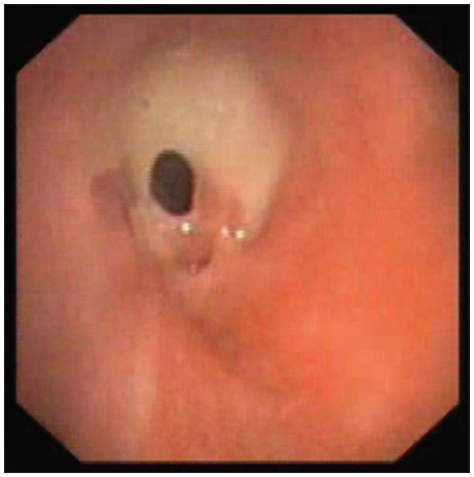

Figure 1: Stenosis at distal left main stem bronchus

Figure 2: Foreign body beyond stenosis

Figure 3: Electrocautery knife to make radial incisions

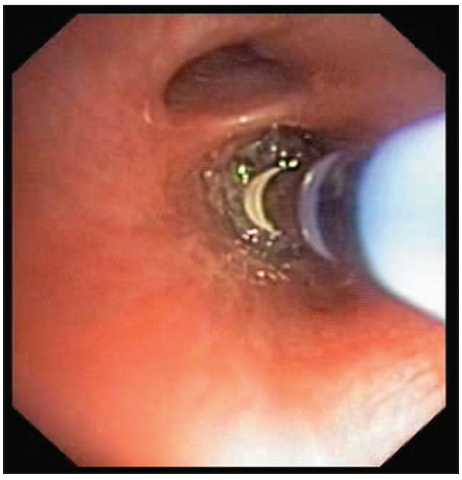

Figure 4: Cryo-extraction of foreign body from bronchus

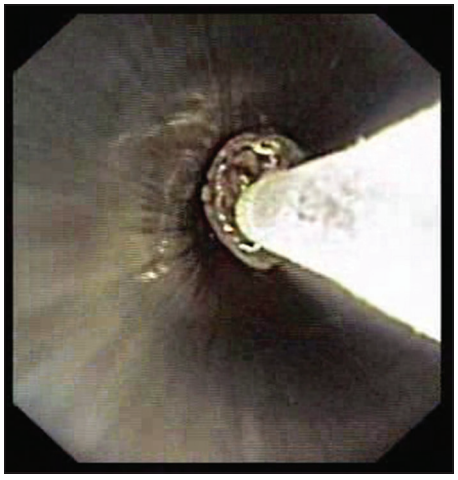

Figure 5: Foreign body being taken into rigid barrel

Figure 6: Plastic foreign body after removal

DISCUSSION

Retained non-organic foreign bodies are great masqueraders presenting with non-specific symptoms and high propensity of being missed unless index of suspicion is high. The longest duration of retained FB in English literature is 39 years, a case of wooden chip reported from Japan.[1] History of FB is the first clue to making a diagnosis but is unfortunately forthcoming only in few of the cases that too in retrospect.[2] Evaluation should be undertaken even if FB was removed previously and patient has symptoms as part of it could have been retained as it was in our case. Symptoms range from none to chronic cough, wheezing, hemoptysis and recurrent episodes of chest infections. In our country several patients end up receiving courses of anti-tubercular therapy.[3] Profile of symptoms are generally non specific but documented episodes restricted to one side or lobe warrant evaluation for endobronchial lesions. Chest X-ray is the next step in assessing these patients; it has a high sensitivity for detecting metallic foreign bodies and can also reveal subtle signs like lobar collapse or hyperinflation. Chest X-ray has been shown to reveal the FB as opacity in only 14-20% among both adults and pediatric population.[4,5] Radiology can miss FB of plastic or wood origin. This has been the case in all reports of retained FB of over 10 years in English literature including ours. Flexible bronchoscopy should be undertaken if radiology reveals or suspects FB; also in cases of unexplained longstanding non-specific symptoms with negative radiology and no alternate diagnosis.[6] Luminal appearance of FB after years of residence is rarely clear, especially if one is unsure of what they are looking for. Granulation tissue can be exuberant and mimic tumor in appearance, attempts to biopsy it can result in significant bleeding which can further compromise vision.[2] Stenosis of bronchus like the one seen in our patient is a relatively uncommon complication seen in about 8% of cases as against 62.9-76.5% incidence of granulations in two large series.[4,7] Even among patients with stenosis only minority require management of the same and in our case was required due to presence of tight stricture in the main stem bronchus.

There is consensus regarding rigid bronchoscopy for management of FB in pediatric patients as these patients are sicker, hypoxemic, cannot cooperate, have poor reserve and flexible bronchoscope lacks robust instruments for retrieval due to small working channel. Further, flexible bronchoscopy is useful in only confirming the presence of FB in stable pediatric patients, thus avoiding a negative rigid bronchoscopy.[5] Flexible versus rigid bronchoscopy for management in adults is a long-standing argument with various operators having different points of view. Success reported for flexible bronchoscopy ranges from 68 to 96.5% in various studies.[4,7] Rigid bronchoscopy is the preferred modality for either long-standing FB or in case of failed attempt with flexible bronchoscope. Long-standing FB is also notorious for failure of rigid bronchoscopy due to excessive granulation, which then requires bronchotomy and/or lobectomy for retrieval.[8] In our case rigid bronchoscopy was done in view of long-standing FB and presence of web-like stenosis that required dilatation.

CONCLUSIONS

Long-standing FB is a challenge both to diagnose and manage, needs a high index of suspicion and low threshold for detailed evaluation. Management requires personnel with adequate experience and availability of appropriate instruments both flexible as well as rigid. There should be seamless switch over to rigid if flexible is not successful in recovery of FB. Removal leads to immediate relief of symptoms even when undertaken long after aspiration.

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Conflicts of interest
There are no conflicts of interest.

REFERENCES

1. Kogure Y, Oki M, Saka H. Endobronchial foreign body removed by rigid bronchoscopy after 39 years. Interact Cardiovasc Thorac Surg 2010;11:866-8.
2. Linton JS. Long-standing intrabronchial foreign bodies. Thorax 1957;12:164-70.
3. Aggarwal SK, Sinha SK, Ratan SK, Dhua A, Sethi GR. Complications of long-standing foreign body in the airway and their outcomes after endoscopic management: An experience of 20 cases. J Laparoendosc Adv Surg Tech A 2015;25:81-7.
4. Debeljak A, Sorli J, Music E, Kecelj P. Bronchoscopic removal of foreign bodies in adults: Experience with 62 patients from 1974-1998. Eur Respir J 1999;14:792-5.
5. Martinot A, Closset M, Marquette CH, Hue V, Deschildre A, Ramon P, *et al*. Indications for flexible versus rigid bronchoscopy in children with suspected foreign-body aspiration. Am J Respir Crit Care Med 1997;155:1676-9.
6. Righini CA, Morel N, Karkas A, Reyt E, Ferretti K, Pin I, *et al*. What is the diagnostic value of flexible bronchoscopy in the initial investigation of children with suspected foreign body aspiration? Int J Pediatr Otorhinolaryngol 2007;71:1383-90.
7. Dong YC, Zhou GW, Bai C, Huang HD, Sun QY, Huang Y, *et al*. Removal of tracheobronchial foreign bodies in adults using a flexible bronchoscope: Experience with 200 cases in China. Intern Med 2012;51:2515-9.
8. al-Majed SA, Ashour M, al-Mobeireek AF, al-Hajjaj MS, Alzeer AH, al-Kattan K. Overlooked inhaled foreign bodies: Late sequelae and the likelihood of recovery. Respir Med 1997;91:293-6.