

Asymptomatic inhaled foreign body

A bullet in the lung for 2 years

Muhammad U. Salim, MBBS, FCPS, Asif Asghar, FCPS, FCPS, Irum Tareen, MBBS, FCPS, Muhammad Azhar, MBBS, FCPS.

ABSTRACT

ومن النادر جدا أن يكون جسم غريب كبير في الرئتين دون أي مضاعفات أو أعراض لمدة 2 سنة . وكان في سن المراهقة المذكور الذين تتراوح أعمارهم بين مع نوبات من نفث الدم البسيط لمدة 4 أسابيع تاريخ تطلع رصاصة 2 منذ سنوات . والمثير للدهشة انه لا يزال غير متناظرة لمضاعفات في الرئة لمدة 2 سنة . تمت إزالة الرصاصة من قبل بضع الصدر الأيمن و غير إسفين التشريحية تدبب استئصال . وقال انه يتبع الانتعاش هادئ . هيئة الخارجية يستنشق على الرغم من أن كبير يمكن أن تبقى بدون أعراض لفترة طويلة وخاصة إذا كان قد هاجر إلى المحيط .

It is very rare to have a big foreign body in the lungs without any complications or symptoms for 2 years. A 14-year-old male with episodes of minor hemoptysis for 4 weeks had a history of inhalation of a bullet 2 years earlier. He had asymptomatic for lung complications for 2 years. The bullet was removed by right thoracotomy and non-anatomical wedge stapled resection, and he followed an uneventful recovery. An aspirated foreign body although big can remain asymptomatic for a long time, especially if it has migrated to the periphery.

Saudi Med J 2016; Vol. 37 (10): 1136-1139

doi: 10.15537/smj.2016.10.16046

From the Department of Respiratory Medicine (Salim), Jinnah Postgraduate Medical Centre, the Department of Thoracic Surgery (Asghar, Tareen, Azhar), The Pakistan Navy Ship, Shifa International Hospitals, Karachi, Pakistan.

Received 23rd May 2016. Accepted 7th August 2016.

Address correspondence and reprint request to: Dr. Muhammad U. Salim, Department of Respiratory Medicine, Jinnah Postgraduate Medical Centre, Karachi, Pakistan. E-mail: Dowite_1588@yahoo.com

Latency of a foreign body (FB) in the thoracic cavity is something not common.¹ Generally, the etiologies for the presence of such FBs include traumatic intention, accidental, or iatrogenic.² Foreign bodies of airways are known for acute and chronic complications related to partial obstruction leading to choking, or secondary pathologies of the lungs including variable degrees of respiratory distress, atelectasis, chronic coughing, recurrent pneumonia, and even death.³ Foreign body aspiration (FBA) can be completely asymptomatic.⁴ The objective of the study is to act as instructive example with the record of clinical interactions, which help us to frame the investigations undertaken in order to determine a diagnosis and the course of treatment the patient underwent as a result for more rigorously designed clinical studies.

Case Report. A 14-year-old male with episodes of minor hemoptysis for 2 weeks. He neither got admitted nor had any respiratory ailment. According to his father, he inhaled a bullet 2 years ago, but since then had remained asymptomatic, and no intervention was carried out.

His chest roentgenogram showed a FB in the right lung, and the lateral view of his chest roentgenogram indicated an aspirated bullet in the extreme periphery at the right lung base (Figure 1). Confirmation was carried out by CT of the chest with intravenous contrast, and showed a bullet showing a streak artifact in the posterior basal region of the right lower lobe in the peripheral 2 cm zone of the lung (Figure 2). The scan also showed dilated sub-segmental bronchus with no evidence of bronchiectasis, or cavitation. The remaining lung fields appear to be normal in the scan, which indicates the absence of any other pathological reason for causing hemoptysis in the patient. Bronchoscopic examination was not carried out due to the association of FB, leading to localized bronchiectasis, was quite obvious on the CT scan. Bronchoscopic examination was not expected to add any information to the clinical

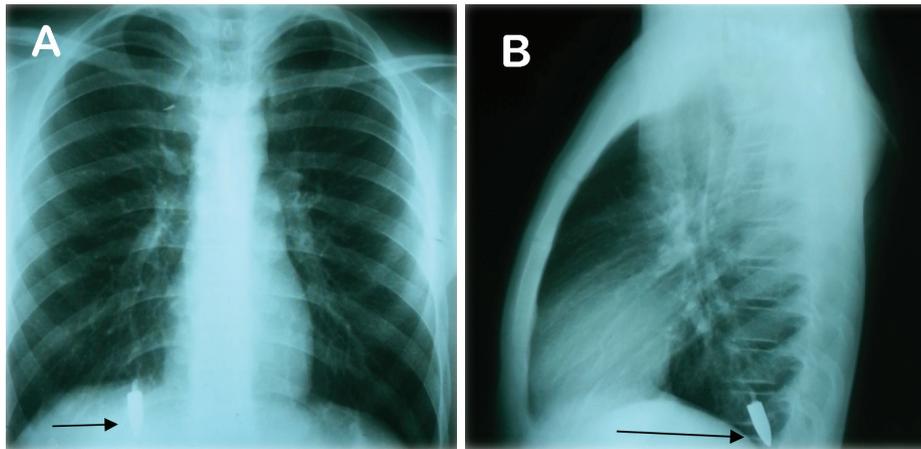


Figure 1 - Chest film showing the bullet A) lying in the lower zone of the right lung and B) the lateral view located peripherally.

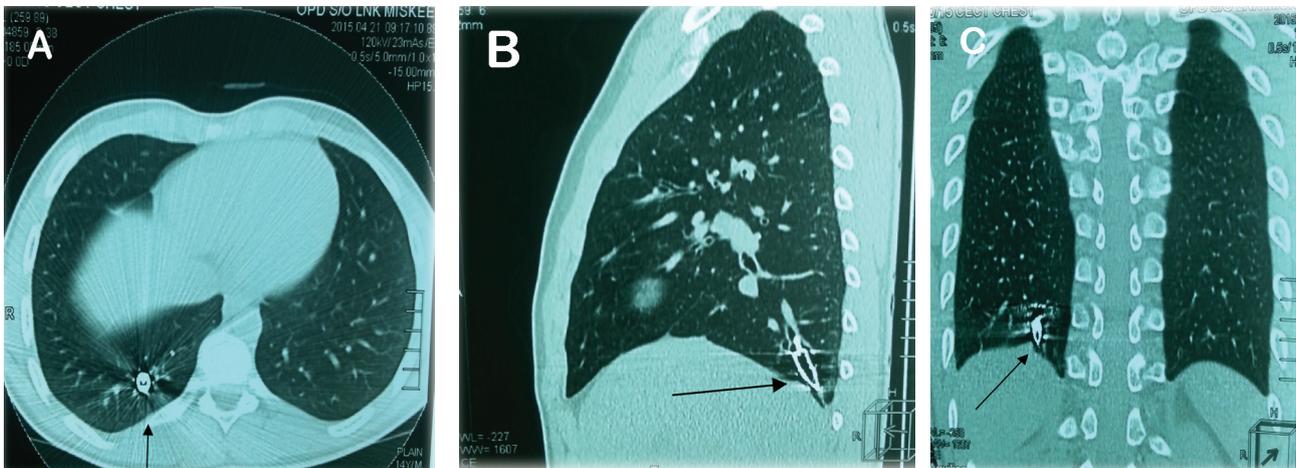


Figure 2 - Computerized tomography scan showing the A) deeply located bullet in right periphery of the lung, B) streak artifact, and C) the dilated subsegmental bronchus with no evidence of bronchiectasis or cavitation

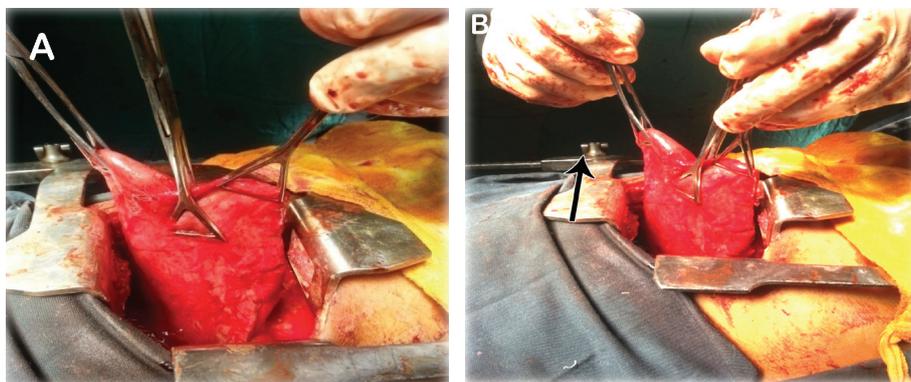


Figure 3 - Intraoperative photographs showing the A) collapsed right lung with bullet inside and B) the bullet in the lung using the Duval forceps (arrow).

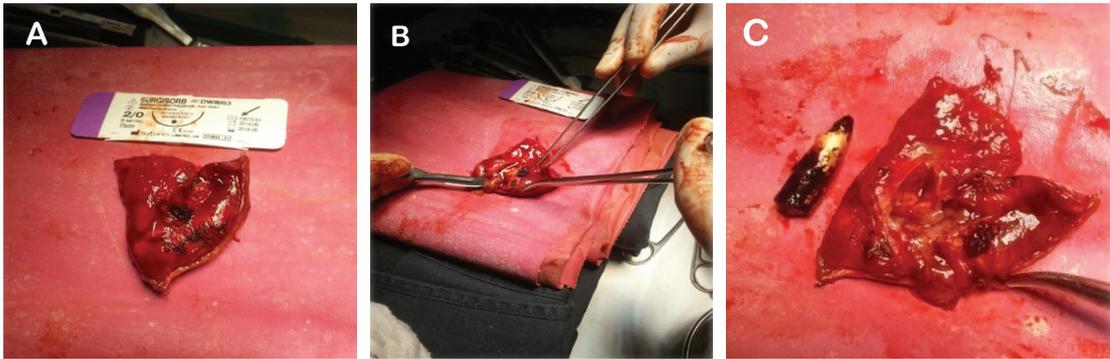


Figure 4 - Photographs showing the A) resected part of right lung, B) incising the part for bullet retrieval, C) and the retrieved bullet and excised part of the lung.

workup. Following consent for thoracotomy and wedge resection, a right posterolateral thoracotomy was performed at the seventh intercostal space with one lung ventilation using double lumen endotracheal tube under general anesthesia. The lower lobe had extensive adhesions with the diaphragm, which were lysed, and the FB was palpated in the posterior basal segment of the lung. The affected area was secured by duval forceps (Figure 3). Figure 4A shows non-anatomical wedge resection of the lung, within 1.5 cm from FB, carried out using 2 linear staplers (auto suture DST 80, 4.8 size).

Figures 4B & 4C the resected piece of the lung was then incised to retain the aspirated bullet. Postoperatively, airtight stapling was confirmed by saline dip test. He followed an uneventful recovery with extubation of the chest tube on the fourth postoperative day, and was discharged.

Discussion. Removal of an impacted FB from the lung is a great challenge for the thoracic surgeon especially if it is deeply located. In adults, the FBs are wedged distally mostly in the right lower lobe. Unlike this case, most FB inhalations are caused by cough, sputum, hemoptysis, and choking; and if dwell chronically can cause structural changes in the involved lung. The patient in this case was totally asymptomatic as he aspirated the bullet 2 years ago, and had no any respiratory symptoms. He took a medical advice when he started complaining of hemoptysis 4 weeks after. The radiographic findings showed the bullet located in the peripheral lower lobe of the right lung, but there was

no finding of chronic suppuration. In such cases, FBs from the pleural cavity can be extracted either through thoracotomy, or video assisted thoracoscopic surgery (VATS)² which gives the surgeon excellent exposure for removal of the object under direct vision.⁵ In this case, we choose an open thoracotomy due to the anticipated adhesions of the lower lobe with the diaphragm and peripheral posterior location of the FB. In an uncomplicated late presenting case, the decision was toward lung conservation in the form of stapled wedge resection as the lung parenchyma was healthy except an area immediately adjacent to the bullet, namely, a dilated sub-segmental peripheral bronchus telltale of the bullet track.

Most of the old inhaled, or aspirated FBs give rise to bronchiectasis and lung abscess, and mostly are not able to reach the respiratory bronchioles especially the narrow ones. Kürklü et al⁶ reported that although a patient was asymptomatic after FB aspiration, bronchiectasis was still observed. Steffensen et al's⁷ study identified pleural effusion apart from obstructive emphysema, necrotizing pneumonia, and organizing pneumonia as the sequelae of FB aspiration. In another study, it was stated that a patient inhaled a rubber bullet, which was extracted after one year, but had episode of pneumonia, radiographically developed multiple areas of bronchiectasis and consolidations. After 2 months of extraction of the FB, the HRCT chest showed normal parenchyma of the lung.⁸

Our patient case was observed for postoperative complications, but remained well before discharge from hospital. We conclude that an incidental finding of an asymptomatic FB on chest x-ray does not necessarily mean that it is located in a recess of pleural space. It can be a silent lodged FB of the lung especially if located in the peripheral zones.

Disclosure. Authors have no conflict of interests, and the work was not supported or funded by any drug company.

References

1. Thakur A, Kaur K, Jain G, Singhal SK, Dureja J, Taxak S. Retrieval of surgical blade by open thoracotomy – A case report of an iatrogenic complication, *Egyptian Journal of Anaesthesia* 2014; 30: 447-449.
2. Weissberg D, Weissberg-Kasav D. Foreign bodies in pleura and chest wall. *Ann Thorac Surg* 2008; 86: 958-961.
3. Travassos Júnior RR, Barbas SV, Fernandes JM, Mendes MJ, Fiks IN, Ribeiro CS, et al. [Foreign-body aspiration in adults]. *Rev Hosp Clin Fac Med Sao Paulo* 1991; 46: 193-195. Portuguese
4. Laks Y, Barzilay Z. Foreign body aspiration in childhood. *Pediatr Emerg Care* 1988; 4: 102-106.
5. Burack JH, Amulraj EA, O'Neill P, Brevetti G, Lowery RC. Thoracoscopic removal of a knife impaled in the chest. *J Thorac Cardiovasc Surg* 2005; 130: 1213-1214.
6. Kürklü EU, Williams MA, Le Roux BT. Bronchiectasis consequent upon foreign body retention. *Thorax* 1973; 28: 601-602.
7. Steffensen I, Faurschou P. Haemorrhagic pleural effusion several months after inhalation of a foreign body. *Eur Respir J* 1993; 6: 141-143.
8. Bertolani MF, Marotti F, Bergamini BM, Pellegrino M, Balli R, Calandra Buonauro PL. Extraction of a rubber bullet from a bronchus after 1 year: complete resolution of chronic pulmonary damage. *Chest* 1999; 115: 1210-1213.