Research Paper Medical Science

# Travel of a Dental Filling

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**ABSTRACT**

*Management of foreign body aspiration is a discipline unto itself and cases should be referred to highly specialized centers with sophisticated setup. Pulmonology referral is needed to diagnose the underlying cause and for potential removal of the foreign body. Here we reported the successful management of foreign body aspiration using rigid bronchoscopy in a young patient who was sent to our emergency service with prediagnosis of dental filling aspiration.*

**Keywords : Dental filling, aspiration, bronchoscopy**

## INTRODUCTION

Aspiration of a foreign body (FB) into the tracheobronchial tree is uncommon in adults, and adult patients frequently have an underlying condition, such as a dental procedure resulting in aspiration, a neurological disorder, or alcohol or sedative abuse (Yılmaz, Akkaya, Damadoglu & Gungor, 2004). It can be very difficult to remove depending on the location and type of FB, the experience of bronchoscopist, and the availability of appropriate instruments (Umapathy, Panesar, Whitehead & Taylor, 1999). In this report we presented the successful removal of a dental filling from the bronchial tree with rigid bronchoscopy.

## CASE REPORT

A 22-year-old girl who had aspirated a filling during treatment at a dental clinic was sent to our emergency service with prediagnosis of dental filling aspiration. The only symptom after aspiration was cough and her chest examination was unremarkable. Postero-anterior chest and lateal neck radiographies showed a small, approximately 1 cm, radiopaque object in the right hilar lung region (Figure 1A and 1B). Her blood count and biochemical analysis were normal. The patient was taken to operating room immediately and rigid bronchoscopy was performed under general anesthesia. Rigid bronchoscopy showed aspirated dental filling below the intermedier bronchus at the entry of right lower lobe (Figure 2) and subsequently it was successfully removed by forceps (Figure 3). The patient was examined in intensive care unit for 24 hours and no complications were observed after the procedure. There was an excellent outcome following removal of aspirated filling and the patient was discharged by antibiotherapy the next day.

## DISCUSSION

Foreign body aspiration (FBA) into the airway frequently occurs in children but it is very rare in adults (Takenaka et al, 2011; Mohamad, Mohamad & Ismail, 2010). Cough reflex in response to foreign bodies in the airway is thought to be the most likely reason for the low incidence of aspiration (Lu & Aronowitz, 2010). In a 10-year retrospective review, Tiwana, Morton and Tiwana (2004) reported only 36 cases of aspiration or ingestion occurring in over 1 million patient visits. Only one of these cases was tooth aspiration.

Signs and symptoms of adult FBA are most often nonspecific. Because of this misdiagnosis and delay in diagnosis frequently occur (Rafanan & Mehta, 2001).

Medical history is the key for the diagnosis of FBA. Choking followed by an acute episode of coughing is the most common presentation of FBA (Even et al, 2005). Black, Choi, Syme, Johnson and Matlak (1984) described symptom triad—coughing, choking and wheeze in 91% of patients presented with FBA. In our case patient's medical history supported the aspiration of dental filling. Cough was the only symptom after aspiration and her physical examination was normal.

Findings on radiographic imaging include visualization of a radiopaque FB, atelectasis, postobstructive changes, mediastinal shift, and pneumomediastinum (Swanson, 2004). In our patient X-ray of postero-anterior chest and lateral neck showed a small, approximately 1 cm, radiopaque object in the right hilar lung region. In the presence of a high clinical suspicion even with normal imaging studies, bronchoscopy should be performed for a thorough evaluation of the airways. Bronchoscopic extraction of airway FBs can be safely accomplished with both the rigid as well as the flexible bronchoscope in adults and children. Rigid bronchoscopy allows for control of the airway and provides excellent visualization with a variety of ancillary instruments available (Swanson, 2004).

In our case according to patient's anamnesis, clinical and radiographic examination rigid bronchoscopy was performed in order to remove aspirated filling.

In a study of Monoj and Ranjan, rigid bronchoscopy under general anaesthesia was performed in 94 cases of suspected FBA and the most common site of lodgment was the right bronchus (Mukherjee & Paul, 2011). In our patient aspirated filling was lodged in the right bronchial tree too.

Upon the literature, early diagnosis is very important in FBAs, because inflammatory granulation due to long-term impaction of FBs makes its removal difficult (Takenaka et al, 2011). In our case early diagnosis is made so the removal of the aspirated filling was not difficult. We wanted to report this case because aspiration of a filling is an extremely rare but potentially serious complication during dental procedures.

**CONFLICT of INTEREST**
**None declared.**

**Figure 1A: Postero-anterior chest radiography showing radiopaque object in the right hilar lung region**


**Figure 1B: Lateal neck radiography showing aspirated foreign body**

**Figure 2: Bronchoscopic image of aspirated dental filling at the entry of right lower lobe**

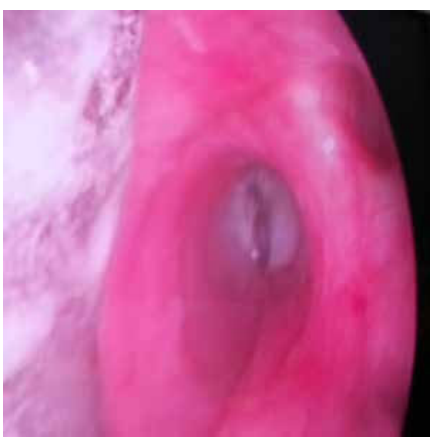

**Figure 3: Aspirated filling after removal by rigid bronchoscopy**

## REFERENCES

Black, R.E., Choi, K.J., Syme, W.C., Johnson, D.G., Matlak, M.E. (1984). Bronchoscopic removal of aspirated foreign bodies in children. Am J Surg, 148 (6), 778–781. doi:10.1016/j.jpedsurg.2005.03.049. | Even, L., Heno, N., Talmon, Y., Samet, E., Zonis, Z., Kugelman, A. (2005). Diagnostic evaluation of foreign body aspiration in children: a prospective study. J Pediatr Surg, 40 (7), 1122-1127. doi:10.1016/j.jpedsurg.2005.03.049. | Lu, A., Aronowitz, P. (2010). Better if left under pillow. J Gen Intern Med, 25 (8), 873. doi: 10.1007/s11606-010-1353-6. | Mohamad, I., Mohamad, H., Ismail, H. (2010). Bilateral pulmonary aspiration of teeth and the migration of a foreign body from one main bronchus to another. Med J Malaysia, 65 (4), 309-310. | Mukherjee, M., Paul, R. (2011). Foreign body aspiration: demographic trends and foreign bodies posing a risk. Indian J Otolaryngol Head Neck Surg, 63 (4), 313–316. doi:10.1007/s12070-011-0227-5. | Rafanan, A.L., Mehta, A.C. (2001). Adult airway foreign body removal. What's new? Clin Chest Med, 22 (2), 319-330. | Swanson, K.L. (2004). Airway foreign bodies: what's new? Semin Respir Crit Care Med, 25 (4), 405-411. doi: 10.1055/s-2004-832713. | Takenaka, M., Hanagiri, T., Ono, K., Oka, S., Kuwata, T., Baba, T., et al. (2011). Management of patients with bronchial foreign bodies. J UOEH, 33 (2), 157-161. | Tiwana, K. K., Morton, T., Tiwana, P.S. (2004). Aspiration and ingestion in dental practice: a 10-year institutional review. J Am Dent Assoc, 135 (9), 1287-1291. | Umapathy, N., Panesar, J., Whitehead, B. F., Taylor, J. F. (1999). Removal of a foreign body (artificial tooth) from the bronchial tree--a new method. J Laryngol Otol, 113 (9), 851-853. doi: 10.2169/internalmedicine.47.1173. | Yılmaz, A., Akkaya, E., Damadoglu, E., Gungor, S. (2004). Occult bronchial foreign body aspiration in adults: analysis of four cases. Respirology, 9 (4), 561-563. doi: 10.1111/j.1440-1843.2004.00621.x.