

## 'Turban' Pin Aspiration: Three Case Report

### Turban İğnesi Aspirasyonu: Üç Olgu Sunumu

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#### Abstract

Aspiration of foreign bodies into the tracheobronchial system is a serious clinical condition which may be fatal and needs to be treated urgently. Case reports about aspiration of pins related to wearing 'turbans' (religious headscarfs) in Muslim countries are present in the literature. This report includes three cases of women with aspiration of 'turban' pins and evaluates the diagnosis and treatment of foreign body aspiration into the tracheobronchial system in the light of recent literature. (*JAEM 2010; 9: 152-4*)

**Key words:** Aspiration of needle, emergency department, turban, urgent bronchoscopy

Received: 25.03.2009

Accepted: 04.01.2010

#### Özet

Trakeobronşiyal sisteme yabancı cisim aspirasyonu ciddi ve ölümlü sonuçlanabilen ve acil girişim gerektiren klinik bir durumdur. Literatürde Müslüman ülkelerde turban kullanımı ile ilişkili iğne aspirasyonu olgu bildirimleri yer almaktadır. Bu yazıda acil servisimize iğne yutması şikâyeti ile başvuran turban kullanan üç kadın olgu sunumu anlatılmakta, trakeobronşiyal sisteme yabancı cisim aspirasyonu için tanı ve tedavi seçenekleri güncel literatür ışığında gözden geçirilmektedir. (*JAEM 2010; 9: 152-4*)

**Anahtar kelimeler:** Acil servis, acil bronkoskopi, iğne aspirasyonu, turban

Alındığı Tarih: 25.03.2009

Kabul Tarihi: 04.01.2010

#### Introduction

Aspiration of a foreign body involves inhaling a substance into the upper or lower respiratory tract through the mouth or nose during respiration (1). Aspiration of foreign bodies is observed particularly during childhood. Hence, more than 75% of these cases occur between 0-3 years of ages (1-5). The objects aspirated are closely related to age, sex, occupation, socioeconomic status and cultural background (2,3). Objects most commonly aspirated are small sized snacks (peanuts, hazel-nuts, corn, sunflower seeds etc.), organic materials such as fruit and vegetable pieces, and inorganic materials like needles (pins, 'turban' pins) and hairpins (2-4).

Aspiration of pins case reports related to wearing 'turbans' in Muslim countries are present in the literature (4, 5). Women generally tend to hold plain pins or pins with beads attached between their teeth while covering their heads with 'turbans'. Aspiration of pins into the tracheobronchial system occurs as a result of breathing deeply during a sudden coughing attack, or speaking and laughing while holding pins between their teeth.

In this report, three cases of aspiration of 'turban' pins admitted to our emergency department between January 1st and December 31st, 2007 are presented.

#### Case Report

Aspiration of 'turban' pins cases referred to our emergency department involved 19, 24 and 36 year-old-women. Patients had aspirated turban pins with beads while trying to talk and keep pins in their mouths at the same time. All three patients had cough and dyspnea on admission. Vital signs were within normal limits at the time of admission. No significant abnormality was detected. All patients were admitted to the emergency department early in the post-aspiration period. Radio-opaque foreign materials were visualized with posteroanterior and lateral chest x-rays (Figure 1 and 2). All the patients had thoracic surgery department consultation for urgent bronchoscopy and then were hospitalized for further examination and treatment. All foreign materials were extracted with the help of rigid bronchoscopy and forceps under general anesthesia in the operating room. There was no complication after bronchoscopy and all patients were discharged after 24 hours of observation. There was no complaint or complication during the follow-up in ambulatory care.

#### Discussion

Aspiration of foreign bodies into the tracheobronchial system is regarded as a serious clinical condition which may be fatal and needs

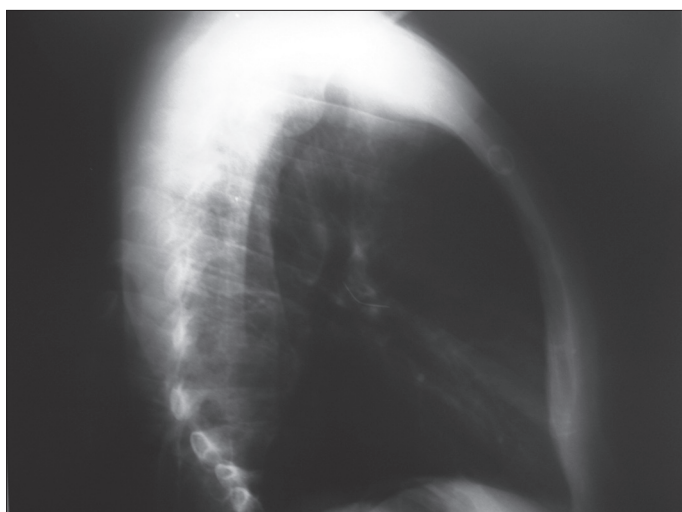
to be treated urgently (3, 4). The most important milestones of diagnosis are good medical history taking, physical examination, and correct localization with the help of imaging procedures (2, 3).

The main complaint of the patients is of a sudden severe choking cough attack due to the irritation of the foreign body in the tracheo-bronchial system (1, 3, 5). Coughing loses its severity and characteristics after the foreign body is localized in the bronchial tree (3). Patients may be asymptomatic at presentation, as observed in our cases, or with rales, fever, hemoptysis or dyspnea (1-5).

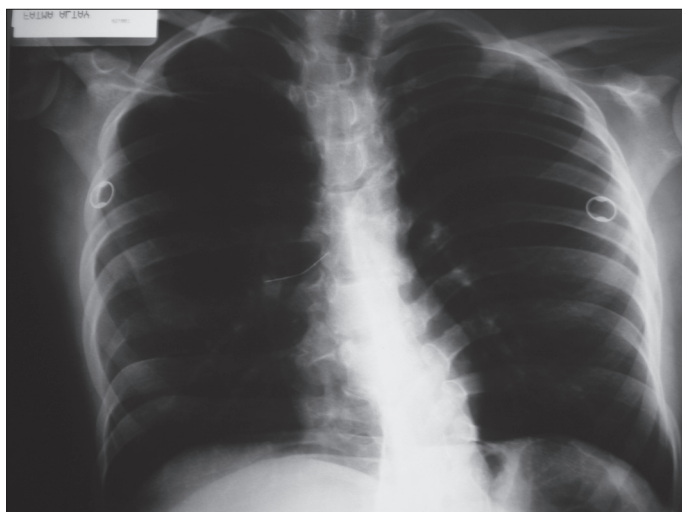
Physical examination findings vary depending on the location of the aspirated material in the tracheobronchial system, time spent after the aspiration incident and characteristics of the material (2). Physical examinations of the patients are generally found to be normal, as in our cases, but materials lodged at the laryngeal or subglottic level may cause noisy breathing, reduced amplitude and changes in vocal speech sound. Materials localized more distal to the tracheo-bronchial tree may create stridor, wheezing, cyanosis, retraction, unilateral or bilateral reduction of the auscultation sounds, rhonchus and high fever. Recurrent infections in selected cases may cause rales and vulgarity of breathing sounds. Foreign materials which cause total occlusion may result in sudden death (1).

All cases suspected of foreign body aspiration into the tracheo-bronchial system should have direct chest X-rays taken in order to visualize the material and for localization. A negative radiologic evaluation should not exclude foreign material diagnosis (2-4). Due to the anatomic architecture of the bronchial system, foreign materials lodge more often in the right main bronchus and its branches (2, 3, 5). Radio-opaque inorganic materials can easily be localized with posteroanterior and lateral chest X-rays, as in our cases. However, some special imaging techniques are needed to localize organic materials, which are frequently radiolucent on direct X-rays (1). Inspiration - expiration chest X-rays, lateral decubitus chest X-rays and fluoroscopy screenings may be helpful for visualization of secondary signs, which are not seen in routine imaging studies. Secondary signs that are most frequently encountered are mediastinal shift, obstructive emphysema, atelectasis, bronchiectasis and pneumonia (3, 4). Computed tomography is not a routinely used technique, but may show the volume reduction and bronchiectasis in the related lobe or segment (1).

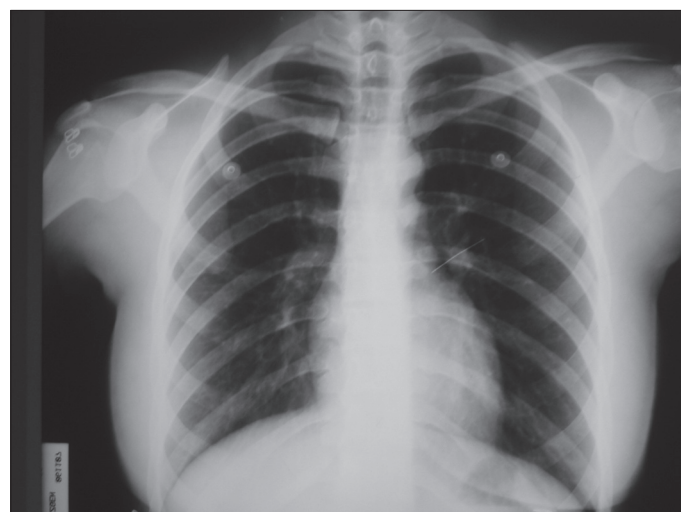
Bronchoscopy is indicated in all cases of foreign body aspiration history or suspicion even if there are no radiological or clinical signs



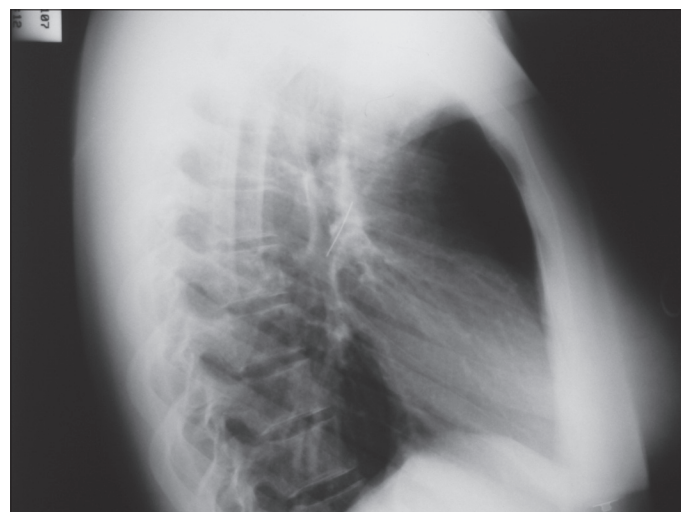
**Figure 1.** Posteroanterior view of the chest X-ray of Patient 1. The needle at the entrance of middle bronchi of right lung.



**Figure 2.** Lateral view of the chest X-ray of Patient 1. The needle at the entrance of middle bronchi of right lung



**Figure 3.** Posteroanterior view of the chest X-ray of Patient 2. The needle at the entrance of upper bronchi of left lung



**Figure 4.** Lateral view of the chest X-ray of Patient 2. The needle at the entrance of upper bronchi of left lung

and symptoms (2). Rigid bronchoscopy is the gold standard for extraction of detected foreign materials (1, 2, 4). However, flexible bronchoscopy should be considered as the first choice of investigation for cases of foreign body aspiration suspicion, and rigid bronchoscopy should be planned for extraction of the material afterwards (1,5). Flexible bronchoscopy is used to extract distally localized foreign materials. If foreign material is located in the subglottic area, laryngoscopy and appropriate forceps may be useful for extraction (1).

Surgical removal is the last choice of treatment and rarely needed. Thoracotomy and bronchotomy rates are reported as 2.5% (1). If the material is located too distally and cannot be extracted with the help of bronchoscopy, or handling with forceps is impossible, pulmonary resection can be planned with thoracotomy and bronchotomy (1, 5). On the other hand, the most important characteristic of organic materials is swelling secondary to water absorption. As a result, it becomes fragile and may easily be broken into pieces. This kind of initially asymptomatic foreign body may subsequently cause serious complaints or total occlusion and needs to be surgically removed (1).

## Conclusion

Aspiration of 'turban' pins cases is frequently observed in Muslim women wearing 'turbans'. Prevention of 'turban' pin aspiration can be achieved by producing bigger size pins that cannot pass through the

pharynx. Whenever tracheobronchial aspiration of foreign bodies occurs, early diagnosis and total extraction of the aspirated material without fragmentation is vital.

## Acknowledgement

Special thanks to Gülbin Ş. Aygencel (MD, Ass. Prof. of Internal Medicine) and Devrim Sorrell for their help in the English edition.

## Conflict of Interest

No conflict of interest is declared by the authors.

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