

JOURNAL OF CLINICAL AND DIAGNOSTIC RESEARCH

How to cite this article:

GOYAL D K. THE STUDY OF 50 CASES OF THE FOREIGN BODY OF THE TRACHEOBRONCHIAL TREE. Journal of Clinical and Diagnostic Research [serial online] 2010 December[cited: 2010 December 10]; 4:3344-3347.

Available from

http://www.jcdr.in/article_fulltext.asp?issn=0973-709x&year=2010&volume=4&issue=6&page=3344-3347&issn=0973-709x&id=xxx

ORIGINAL ARTICLE

The Study Of 50 Cases Of The Foreign Body Of The Tracheobronchial Tree

GOYAL D K*

ABSTRACT

Background and Aim: The lower respiratory tract extends from the vocal cords to the bronchus. Any type of foreign body can accidentally lodge at this site and it can become a life endangering emergency. This study was done in the region of Bikaner, Rajasthan, where the people are involved in the farming of peanuts and watermelon, and their children are prone to the inhalation and the lodging of peanuts and the seeds of watermelon in the respiratory tract. The adults and the elderly are used to chewing supari and they keep supari in their mouth while sleeping. So, they are prone to the inhalation and the lodging of supari in the respiratory tract.

Material and Methods: This is a prospective study which has been done on 50 cases of foreign body lodging in the respiratory tract. The patients who had symptoms of respiratory distress, stridor, the intercoastal retraction of the muscles and a history of choking, underwent clinical examination of the chest for unequal air entry. Chest X-ray and rigid bronchoscopy were done in these patients. These patients were classified according to their age incidence, gender, rural/ urban status and the type of foreign body and its location.

Results: The minimum age of the patients was 1.5 years and the maximum age was 75 years. 78% patients were males and 22% patients were females, while 83% patients were from rural areas and 17% were from urban areas. The most common type of foreign bodies which were lodged, were peanuts, followed by supari, watermelon seeds, stones and balloons. The commonest location of lodging was the right bronchus.

Discussion: The bronchus is the commonest location for foreign body lodging in Bikaner due to the life style of the people in that place. The people of this region grow peanuts in their farms and their children are prone to choking by the lodging of peanuts in their bronchus. The adults and the elderly are used to chewing supari and they keep supari in mouth during sleeping.

Keywords: foreign body, bronchus, tracheobronchial tree

*Assistant Prof. ENT department, GGS medical college, Faridkot

Introduction

The upper respiratory tract is involved in food intake and respiration. During deglutination, the larynx prevents the entry of food particles into the trachea, whose sole function is respiration. Any accidental entry of a foreign body into the

trachea can cause a choking sensation and a cough reflex can remove it. But in small children, the habit of eating while playing can cause the inhalation of foreign bodies and in adults, this happens due to bad habits like keeping the supari in the mouth while sleeping.

If the foreign body gets lodged in the larynx, the trachea or the main bronchus, it can cause complete anoxia which can cause the death of the patient in three minutes before the patients can reach the hospital. But in most of the cases, the foreign body gets impacted in one side of bronchus. These types of patients have complaints of cough, dyspnoea, respiratory distress and the intercoastal retraction of the muscles. On examination, these types of patients are found to have unequal air entry. The chest x-ray shows the collapse of the lung. These types of patients have to undergo rigid bronchoscopy and the removal of the foreign bodies have to be done. This procedure is life saving and there is complete resolution of symptoms.

Material and Method

This study was a prospective study of 50 cases of suspected foreign bodies in the bronchi of the patients. They underwent rigid bronchoscopy and their results were analyzed according to the type of foreign body, age incidence, the side of the bronchus, gender and rural/urban status. The equipments which are required for rigid bronchoscopy are bronchoscopes of various sizes from 4mm to 8mm, peanut forceps, cup forceps and suction of various sizes, light sources and fibro-optic cables.

Results:

Out of the 50 cases, 30 cases (60%) were of peanut lodging, 10 (20%) cases were of supari lodging, 6 (12%) cases were of watermelon seed lodging and 1 (2%) case each of balloon, gram and stone lodging and growth. In 38 (76%) cases, the foreign body was lying in the right bronchus, in 10 (20%) cases, it was lying on the left side and in 1 (2%) case each, it was lying in the trachea and the larynx. 48 (96%) patients were children in the age group of 1.5-10 years and 2 (4%) were of the elderly age group above 70 years. 43 (86%) cases are males and 39 (78%) cases are rural cases.

Discussion:

In our study on 50 cases of foreign body lodging, the maximum number (60%) of patients had peanut as the foreign body. In most of the

cases, the foreign body lay in the right bronchus (76%). 96% of the cases were in the age group of 1.5-10 years. Most (86%) of the patients were males and most were from rural areas (78%). This finding is consistent with those from the study conducted by Gulati S P. Groundnut was found to be the commonest type of foreign body which was lodged in the tracheobronchial tree in Northern India [1]. Burten E M et al in their study in USA, noted that 2/3 of the patients were males, which is comparable to the results of the present study [2]. Tokar B et al (Turkey) also observed that the most common type of foreign body which was lodged in the tracheobronchial tree was of vegetable origin i.e seeds or peanuts like in the present study [3]. As in this study, Ibrahim Sersar S et al also observed in a study in Egypt, that a majority of the patients were in the age group of 3-10 years and mostly, the foreign body which was lodged was of vegetable origin [4]. Mohamad AA studied 20 cases of foreign body lodging in the tracheobronchial tree at Mali and reported that 90% of the patients were children. In 75% cases, the foreign body was of vegetable origin, which was comparable to the results of our study. But the male patients in his study were only 55%, which was in contrary to those found in the present study (86%) [5]. Asif M et al, did a study on 81 patients of foreign body lodging in the tracheobronchial tree and reported that most often, groundnuts were found to be the foreign bodies which were lodged (55.6%) and the age incidence for this was found to be 93.8% in the group of 1-15 years [6]. These results were comparable to those found in our study. Mahafza T and Khader Y studied 524 cases of foreign body lodging in the tracheobronchial tree and found that the most common site for foreign body impaction was the right bronchus (60.9%) and that the male to female ratio was 3:2, which was in contrast to that found in our study. The right bronchus was found to be involved in 76% of the cases and 86% of these were males [7]. Fennira H et al studied 31 cases of foreign body lodging in the tracheobronchial tree and reported that 74% of those were males and that in 55% of the cases, the right bronchus was the site of lodging [8]. Cataneo AZ studied 164 cases of foreign body

lodging and found that 57% of those were males and that 84% were under the age of 15 years [9].

Conclusions

On the basis of the tracheobronchial anatomy, an inhaled foreign body is more likely to enter the right bronchial tree than in the left, in children of all ages. However, the variability in the position of the carina with respect to the mid-trachea may explain why this right-sided preference is less marked in children as compared to adults [10]. To prevent delayed diagnosis, characteristic symptoms, signs and radiological findings of FBA should be checked in all suspected cases. As the clinical and radiological findings of FBA in the delayed cases may mimic other disorders, the clinician must be aware of the likelihood of FBA. Regardless of the radiological findings, bronchoscopy should be considered in patients with an appropriate history [4]. Foreign body inhalation is one of the life threatening emergencies. It may happen at any age: however, most of these accidents occur in children, especially in those below the age of five years. Foreign body inhalation is more common in male patients, mostly below five years of age. Choking is the commonest symptom and decreased air entry on auscultation is the typical examination finding. Peanuts have been found to be the commonest type of foreign body [6]. We conclude that a negative history, clinical examination and chest x-ray do not necessarily exclude aspirated foreign body material. Bronchoscopy is the most effective diagnostic and therapeutic modality which can be used to prevent the complications which are related to neglected foreign body aspiration. In addition to children, teenagers and adolescents are also not immune to this problem. We recommend an early referral to an appropriate hospital on suspicion of any lodging or if the symptoms persist. However, preventive measures remain the best means of protecting these children [11]. In our opinion, rigid bronchoscopy is a relatively safe procedure and it should be carried out in children whenever symptoms like persistent cough, chest infection or stridor persist despite proper antibiotic therapy [12]. We emphasize the necessity to promote preventive measures by informing all parents and physicians on the risks of foreign

body aspiration. Early diagnosis can save much trouble in children [8]. In addition to providing more information and education on the prevention of laryngotracheal and bronchial foreign bodies, better management requires the better training of the medical personnel and the improvement of the technical facilities [13]. In general, small, round crunchy foods pose a risk of choking. Since prevention is the most essential key to deal with these types of injuries, more efforts in the public education of the caregivers is warranted. Foreign body aspiration is difficult to diagnose in children. Misdiagnosis as asthma and respiratory infection can delay the treatment, which may cause intrabronchial granuloma [14]. We therefore suggest early bronchoscopy in all suspicious cases. Parents should be cautious when giving peanuts and watermelon seeds to their children.

References

- [1] Gulati SP, Kumar A, Sachdeva A, Arora S. Groundnut as the commonest foreign body of tracheobronchial tree in winter in Northern India. An analysis of fourteen cases. *Indian J Med Sci* 2003 June; 57(6):244-8.
- [2] Burton EM, Brick WG, Hall JD, Riggi W Jr, Houston CS. Tracheobronchial foreign body aspiration in children. *South Med J*. 1996 Feb; 89(2): 195-8.
- [3] Tokar B, Ozkan R, Iihan H. Tracheobronchial foreign bodies in children: importance of accurate history and plain chest radiography in delayed presentation. *Clin Radiol*. 2004 Jul;59(7):609-15.
- [4] Ibrahim Sersar S, Hamza UA, AbdelHameed WA, AbulMaaty RA, Gowaeli NN, Moussa SA, AlMorsi SM, Hafez MM. Inhaled foreign bodies: management according to early or late presentation. *Eur J Cardiothorac Sug*. 2005 Sep;28(3):369-74.
- [5] Mohamed AA. Laryngo-tracheobronchial foreign bodies. Apropos of 20 cases. *Bull Soc pathol Exot*. 1993;86(5):369-71.
- [6] Asif M, Shah SA, Khan F, Ghani R. Analysis of tracheobronchial foreign with respect to sex, age, type and presentation. *J Ayub Med Coll Abbotabad*; 2007 Jan-Mar;19(1):13-5.
- [7] Maafza T, Khader Y. Aspirated tracheobronchial foreign bodies: a Jordanian experience. *Ear Nose Throat J*. 2007 Feb; 86(2):107-10.
- [8] Fennira H, Ben slimene D, Bourguiba M, Mahouachi R, Drira I, Chtourou A, Smaoui N, Kilani T, Ben Kheder A. Tracheobronchial foreign bodies. Diagnostic and therapeutic aspects in children. *Tunis Med*. 2004 Sep;82(9):817-26.

- [9] Cataneo AJ, Cataneo DC, Ruij RL Jr. management of tracheobronchial foreign body in children. *Pediatr Surg Int.* 2008 Feb;24(2):151-6. Epub 2007 Nov 6.
- [10] Tahir N, Ramsden WH, Stringer MD. Tracheobronchial anatomy and the distribution of inhaled foreign bodies in children. *Eur J Pediatr.* 2009 Mar;168(3):289-95. Epub 2008 May 24.
- [11] Siddiqui MA, Banjar AH, Al-Najjar SM, Al-Fattani MM, Aly MF. Frequency of foreign bodies in children and adolescents. *Saudi Med J.* 2000 Apr;21(4):368-71.
- [12] Ben Amer JH, Kareemullah C, Ben Amer MH, Shembish A. Tracheobronchial foreign bodies in children. *Saudi Med J.* 2000 Jul;21(7):672-4.
- [13] Quoba K, Diara C, Dao MO, Quedraogo I, Sanou I, Cisse R. Laryngo-tracheo-bronchial foreign bodies in children at the University Hospital Center of Ouagadougou (analysis of 96 cases). *Med Trop9Mars).* 2002;62(6):611-4
- [14] Chik KK, Miu TY, Chan CW. Foreign body aspiration in Hong Kong Chinese children. *Hong Kong Med J.* 2009 Feb;15(1):6-11.