CLINICAL OUTCOME OF RIGID BRONCHOSCOPY IN PATIENTS WITH FOREIGN BODY TRACHEOBRONCHIAL INHALATION

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ABSTRACT

Objective: To determine the clinical outcome of Rigid Bronchoscopy in patients with Tracheobronchial Foreign Body inhalation.

Material and Methods: This study was conducted in Otolaryngology department, Khyber teaching hospital, Peshawar of one year duration from January 2018 to December 2019. Total 90 Patients of age 4 months to 14 years on clinical suspicion of foreign body bronchus were included, while patients with history of bronchial asthma, pulmonary tuberculosis and radio opaque foreign body bronchus were excluded.

Results: Among 90 patients 60 (66.66 %) were males and 30 (33.33 %), were female patients. Confirmed foreign body bronchus was found in 80 (88.89%), in which male were 53 and female patients were 27. Foreign body was found more common in 35 (39%) of cases in less than 3 years of age.

Conclusion: Rigid bronchoscopy is gold standard in treating foreign body Tracheobronchial tree.

Keywords: Rigid bronchoscopy, Foreign body, Bronchus

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INTRODUCTION

Foreign body in tracheobronchial tree is a common presenting emergency condition to otolaryngology[1]. Most of the patients need prompt intervention in the form of therapeutic bronchoscopy otherwise delay in proper management, results in mortality[2]. Early clinical diagnosis and in time emergency bronchoscopy can save patients life[3]. Vegetative foreign bodies are radiolucent, the patient usually presents with recurrent chest infections, and it makes delay in proper diagnosis[4]. Research work has shown that incidence of radiolucent foreign body bronchus is 82.6% in suspected cases[5]. Patient's early clinical presentation, with foreign body aspiration, like chocking, cyanosis, and difficulty in breathing can help in diagnosis[6]. On auscultation, decreased air entry and hyperinflation on chest x ray may help in diagnosis[7]. This surgical procedure is not without complications. Experience of the surgeon and anaesthesia team is the requirement of all time for a successful outcome. Children remain uncooperative for flexible bronchoscopy, so they need general anaesthesia for rigid bronchoscopy[8]. Even in good surgical hands the success rate is 80% while in some rare situations, complications can occur[9]. Some time, the patient may need tracheostomy to reduce the dead space and help in ventilation. Complication of the procedure like cardiopulmonary arrest, pneumothorax, and vocal cord injury can occur[10]. Patients on strong clinical suspicion of foreign body aspiration must undergo rigid bronchoscopy. It is both diagnostic and lifesaving, and early intervention greatly reduces morbidity and mortality.

The current study will show the outcome and importance of early rigid bronchoscopy in patients with foreign body inhalation, which has direct impact on mortality and morbidity of these patients. Rigid bronchoscopy is the procedure of choice in pediatric population with foreign body bronchus. Our experience will be shared with other health professional.

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MATERIAL AND METHODS

This retrospective chart review was conducted in the Department of Otorhinolaryngology, Khyber Teaching Hospital, Peshawar from January 2018 to December 2019. A total 90 suspected cases of foreign body aspiration referred from ENT OPD, emergency department, paediatric department and from private hospitals were included. Patients with history of foreign body aspiration, chocking, coughing, cyanosis, difficulty in breathing and reduced air entry on clinical examination were included while patients with history of asthma, tuberculosis, ischemic heart diseases, tracheobronchitis and radio opaque foreign body

bronchus were excluded. Approval from hospital ethical and research committee was taken. Diagnosis of foreign body tracheobronchial tree was based on the clinical and radiological examinations of patient.

Information including name, age, gender and address were recorded in the study Proforma. Data was collected and analyzed in SPSS version 22. Mean ± SD were calculated for continuous variable like age and clinical signs symptoms. Foreign body bronchus was stratified among both sexes and in all age groups. Results were presented in tables.

RESULTS

The results of the study are given in Tables 1, 2 and 3.

Table 1: Distribution of age

Age	No. of Patients %
4 months to 3 years	35 (39%)
3 years to 6 years	20 (22%)
7 years to 9 years	15 (17%)
10 years to 12 years	10 (11%)
13 years and above	10 (11%)

Table 2: The distribution of gender

Gender	Percentages of Patients with Foreign body bronchus	Percentages of Patients with no foreign body bronchus
Male patients	53 (58.89%)	7 (7.78%)
Female patients	27 (30.00%)	3 (3.33%)

Table 2: The distribution of gender

Suspected Patients with foreign body bronchus	foreign body bronchus retrieved	%age
Yes	80	88.89%
No	10	11.11%

DISCUSSION

Foreign body bronchus is quite common in children with different clinical signs and symptoms. In all situations, rigid bronchoscopy is needed as lifesaving procedure. Delay in treatment results in complications and increases mortality[12]. Foreign body, most of the times lodges in right main bronchus, rarely in trachea and left main bronchus. Foreign body bronchus was more common in children [13]. Male patients were more in our study as compare to international literature[14]. The procedure needs highly trained surgeons and anaesthesia team[15]. Diagnosing radiolucent foreign body bronchus always remains a challenge but we can take the help of detail clinical history, examination and imaging facilities[16]. Some systemic diseases, like cardiovascular, lung diseases and oesophgeal conditions can present like foreign body bronchus and must be dealt with great care as team work[17]. Vegetative foreign body bronchus in our study was 88.89% compare to a local study 63.3% [18]. Peanuts, nuts, pulses, and beans were among the most common foreign bodies retrieved with a diverse clinical presentation to emergency department as 68% in a study[19]. Robert CA, and his colleagues has shown foreign body retrieval in 80.5% cases closer to our study[20]. In children we must use rigid bronchoscope due to lack cooperation. In adult patients flexible bronchoscopy is preferable to minimize hospital stay[21]. Good clinical examination and investigation increases accuracy of bronchoscopy as has shown in the study of Divarci E, et al foreign body in 91.3% patients, much nearer to our findings[22]. Delay in proper treatment can further decreases positive results. Clinician can take the help of CT scan but again radiolucent materials need surgical intervention, Gibbons AT, and his colleagues has found foreign body on suspicion in 94.4% cases similar to our findings[23]. To increase the outcome of bronchoscopy pre-operative antibiotics, steroids and nebulization must be administered. Which decreases oedema, inflammation and reduces the rate of complications.[24]

CONCLUSION

The study sums up to show that 80 patients were confirmed with a foreign body in bronchus among the 90 cases with suspected foreign body and this turns up to be 88.89% of the study subjects.

RECOMMENDATIONS

Foreign body bronchial inhalation is a common clinical condition, bronchoscopy must be performed in all suspected patients. To decrease negative results of this procedure it must be supported by relevant investigations.

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Following authors have made substantial contributions to the manuscript as under

Din IU:	Main Idea data collection Manuscript writing
Junid M:	Overall supervision and approval of final version
Khan I:	References
Hafeez M:	Statistical Analysis
Khan AR:	Bibliography

Authors agree to be accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved.