Bronchoscopy in Asymptomatic Children; Our Experience.

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Abstract: Foreign body inhalation is an emergency and its diagnosis is of utmost importance as there are risks associated with its surgical management. Also if the foreign body is not removed due to any cause, it can lead to various complications including death of the child. This study was done to find out whether bronchoscopy should be done in asymptomatic children whose parents are suspicious of a foreign body inhalation; with the child apparently showing no signs and symptoms. Forty four children, with alleged history of foreign body inhalation (symptomatic as well asymptomatic) that came to our department were included in this study over a period of two year from March 2014 to March 2016. Thirty five children were symptomatic whereas 9 were asymptomatic and among them 8 underwent bronchoscopy (after proper counseling and consent that was taken from their parents).

All children with suspected history of foreign body inhalation must be properly evaluated and bronchoscopy must be done to avoid both short and long term consequences of retained foreign body in the tracheobronchial system.

Keywords: Bronchoscopy, foreign body inhalation, tracheobronchial system.

1. Introduction

Foreign body inhalation is considered a medical emergency [1,2,3,4] as the parents or care takers who bring the child to hospital are terrified that the baby is going to die due to airway obstruction. Removal of foreign body from tracheobronchial system [4,5,6,7,8] requires expertise and a high degree of cooperation between the operating surgeon and the anesthetist. [9] In children foreign body inhalation is common as they have the tendency to put things in their mouth. Also the reflexes in them are poorly developed. Foreign body inhalation has grave consequences if not treated on time. Complications associated with foreign body inhalation include lung abscess, atelectasis, consolidation, collapse, tracheobrachial perforation, pneumonia and death. Most common objects that are inhaled include nuts, vegetable pieces, seeds, corn, peas small metallic and non metallic round objects. [3,4,5,6,9,10] Aspirated foreign bodies lodge most commonly in the main bronchus and lower lobe of the right lung.

2. Aims

This study was aimed to find out whether bronchoscopy has any role in asymptomatic [11] children suspected of having foreign body inhalation without suggestive clinical or radiological (chest x-ray only) findings.

3. Material and methods

This study was conducted in Government Medical College Srinagar SMHS in the Department of Otorhinolaryngology over a period of two year from March 2014 to March 2016. A total of 44 patients were included in this study most of them being under three years of age and youngest one was 9 months old. Among them 35 cases were having positive clinical and radiological findings and rest 9 cases were asymptomatic [11] having only high parental suspiciousness (coughing, choking etc.) Majority of the patients were males (n=31) rest being females (n=13). [1,2,8] Proper consent was taken from the parents of all the children included in this study with proper information about nature of surgery and outcome. All the children were carefully examined and admitted in our department. Proper history was taken from the caretakers/parents. Clinical examination was done and chest x ray ordered in all patients included in this study. The case was properly discussed with the parents of 9 asymptomatic children and all necessary information revealed to them regarding this condition. One child whose parents refused any
surgical intervention in him was excluded from this study. Hence a total of 8 cases were studied.

4. Results

A total of 44 cases were included in this study. These were divided into two groups, one group comprised of children who were symptomatic (n=35) clinically along with radiological evidence (x-ray chest) or either of the two. All the patients underwent rigid bronchoscopy and foreign body was found in 21 cases with one case requiring tele-bronchoscopy. [12] The other group comprised of 9 children who were asymptomatic clinically as well as radiologically with only strong parental suspicion regarding foreign body inhalation along with history of choking episodes and respiratory distress being present in a few cases. One case whose parents did not consent for any surgical intervention was excluded from the study. All the patients in the second group were taken for bronchoscopy after proper consent of parents/care takers and after properly discussing the clinical condition, its consequences the nature of the surgical procedure and its outcome. [12,13] Five children among the second group had foreign body that was picked up with rigid bronchoscopy [8,14] and tele bronchoscopy [8,14] In children in whom foreign body was not visualized by rigid bronchoscopy or who were negative for rigid bronchoscopy inhaled tele bronchoscopy [8,14] and oesophagoscopy [8,14] were done to be sure that no foreign body was missed. One child whose parents were highly anxious underwent CT chest. No foreign body was found in him.

<table>
<thead>
<tr>
<th>Group distribution</th>
<th>Total children included in this study</th>
<th>Operative outcome (rigid bronchoscopy)</th>
<th>% age of operative outcome (bronchoscopy)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Group 1</td>
<td>Symptomatic children both clinically or radiologically (chest x-ray only) or by either of one</td>
<td>35</td>
<td>All bronchoscopy (rigid foreign body was present)</td>
</tr>
<tr>
<td>Group 2</td>
<td>Asymptomatic children but strong parental suspicion ss. Clinically and radiologically asymptomatic (no signs and symptoms)</td>
<td>8</td>
<td>Scases were bronchoscopy positive and 3 were negative for bronchoscopy</td>
</tr>
</tbody>
</table>

5. Discussion

Although foreign body inhalation is less common than various other otorhinolaryngological emergencies but this poses a real challenge for an ENT specialist and an anesthetist due to the risk associated with surgical procedure as well as the complications associated with the foreign body. Foreign body inhalation has been reported most commonly in children belonging to the age group of 1 to 4 years [1,3,4,5,6,11] None of the children included in this study was less than 6 months of age. Foreign bodies most commonly recovered included nuts, peas, corn, wheat, small rubber toys and various metallic and nonmetallic objects [3,4,5,6,9,10]

Children in group 1 who were symptomatic for foreign body inhalation underwent rigid bronchoscopy and foreign body was recovered from their tracheobronchial system. The second group comprising of 8 asymptomatic children with no clinical or radiological signs and symptoms of foreign body inhalation only having strong parental or care takers suspicion of foreign body inhalation were included in group 2. These underwent rigid bronchoscopy [12,13] and tele-bronchoscopy (only few cases). In 5 of the 8 children bronchoscopy revealed the presence foreign body. Thus children who present with strong history and parental suspicion of foreign body inhalation must be evaluated properly and its better to do diagnostic bronchoscopy, [12,13] to rule out the presence of foreign body in them. However other diagnostic modalities like CT chest [1,10,12,15] etc. can also be used as an alternative to surgical procedure in asymptomatic children. However as CT chest is not available everywhere and the cost associated with it along with radiation effects to children; diagnostic bronchoscopy [12,13] is a feasible alternative that can be done in all children to avoid long term complications associated with neglected inhaled foreign body.

6. References


