



ORIGINAL ARTICLE

Complications in Children From Foreign Bodies in the Airway[☆]



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KEYWORDS

Foreign body;
Airway;
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Abstract

Introduction and objectives: Foreign body aspiration in childhood is a common and potentially serious problem. Complications may be the result of the aspiration episode itself, delayed diagnosis or treatment. We describe our experience in a paediatric hospital in Argentina.

Methods: We retrospectively evaluated 56 patients with complications due to foreign body aspiration recorded in the Susy Safe Project between January 2010 and November 2013. The clinical variables analysed were sex, age at time of aspiration, foreign body location and type, time elapsed from the event until object removal, extraction technique, complications, need for hospitalisation and circumstances of the event.

Results: 58.9% of the cases described occurred in males, with high presence of adults (76.8%) at the time of aspiration. The incidence was slightly higher in children older than 3 years. In 37 cases (66.1%), the foreign body was located in bronchus; sunflower seeds and ballpoint caps were the most common foreign objects. Only in 10 cases (17.9%) was the object extracted within 24 hours of the event. The most common complications were pneumonia (18 cases), granuloma (15 cases) and mucosal erosion (9 cases). Hospitalisation was necessary for 41 patients.

Conclusion: Early diagnosis and immediate control through specialised teams are essential to ensure proper treatment, usually endoscopic, without risk of complications.

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PALABRAS CLAVE

Cuerpo extraño;
Vía aérea;
Niños;
Complicaciones

Complicaciones debido a la aspiración de cuerpos extraños en niños

Resumen

Introducción y objetivos: La aspiración de cuerpos extraños en niños es un problema frecuente y potencialmente grave. Las complicaciones pueden ser consecuencia tanto del propio episodio

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aspirativo como del retraso en el diagnóstico o de la terapéutica empleada. Describimos nuestra experiencia en un hospital pediátrico de Argentina.

Métodos: Se evaluaron de forma retrospectiva 56 niños con complicaciones por cuerpo extraño en la vía aérea registrados en el Proyecto Susy Safe entre enero de 2010 y noviembre de 2013. Las variables analizadas fueron el sexo, la edad en el momento de la aspiración, la localización y el tipo de cuerpo extraño, el tiempo transcurrido desde el evento hasta la extracción del objeto, la técnica de extracción, las complicaciones, la necesidad de hospitalización y las circunstancias del evento.

Resultados: El 58,9% de las complicaciones ocurrieron en varones, con alta presencia de adultos (76,8%) en el momento del accidente. La incidencia fue levemente mayor en mayores de 3 años. En 37 casos (66,1%) el cuerpo extraño se localizó en bronquio, siendo los más frecuentes las semillas de girasol y las partes de bolígrafo. Solo en 10 casos (17,9%) se extrajo el objeto dentro de las 24 h del evento. Las complicaciones más comunes fueron la neumonía (18 casos), el granuloma (15 casos) y la erosión mucosa (9 casos). Fueron hospitalizados 41 pacientes.

Conclusión: Un diagnóstico precoz y un control inmediato a través de un equipo especializado son indispensables para garantizar un tratamiento apropiado sin riesgo de complicación.

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Introduction

The aspiration of foreign bodies (FB) is a major and preventable cause of morbidity and mortality in infants. Early diagnosis and treatment are essential due to the risk of mortality in an acute episode and the complications derived from the FB remaining in the airway. The complications may be the result of the aspirative episode itself, the type of FB, the delay in diagnosis or the treatment used.

Clinical presentation may be similar to different diseases, delaying accurate diagnosis. Physical examination and X-rays may be misleadingly negative following the critical event, with the result that a high degree of suspicion and appropriate anamnesis are necessary for diagnosis. It is essential to think and probe into the possible existence of a FB even though much time has elapsed after the event or even if it is not remembered or acknowledged by family members.¹ A history of FB aspiration requires endoscopic assessment, even if symptoms are inconclusive.

We will describe the complications which an FB in the airway of a child may lead to. We will highlight the importance of education and making parents aware of the vital risk of aspiration and also making doctors aware of the importance of an accurate diagnosis to reduce the complications arising from delay in the removal of the FB.

Method

Retrospective analysis was conducted on 120 children with FB in their airways attended by the Servicio de Endoscopia Respiratoria (centre of reference for infant airways) and registered in the *Proyecto Susy Safe*² between January 2010 and November 2013, of whom 56 (46.7%) presented with complications.

Complications included all pathological conditions due to the episode of aspiration itself, delay in diagnosis or attempt to extract the FB.¹

The analysed variables in the children who presented with complications were gender, age at the time of aspiration, location and type of FB, time elapsed since the event up to the extraction of the object, the extraction technique, complications, the need for hospitalisation and the circumstances of the event (presence of an adult and activity of the child during the same). The data recorded in Proyecto Susy Safe (www.susysafe.org) was used for the analysis.

In all cases a detailed anamnesis was made in all cases and a physical examination, and in patients who did not require an emergency endoscopy, X-rays: chest and/or cervical X-ray in anterior–posterior and lateral projection (116 cases). A fibre optic laryngoscopy was performed on the 3 cases with suspected laryngeal FB to establish a firm diagnosis.

Four patients had been indicated for previous endoscopies in other institutions without successful extraction of the FB.

Standard pre-operative preparation was made in the emergency cases.

Rigid endoscopy was carried out under general inhalatory anaesthesia with spontaneous respiration in the operating theatre. It was conducted indistinctly by the doctors on call, with no complications being observed during the procedure. Intravenous dexametasone (0.4–1 mg/kg) was administered to reduce potential oedema of the airway caused by the medical implements used. The implements used were rigid 0° 4 mm lenses, laryngoscopes and bronchoscopes of different sizes, fenestrated forceps, rotation forceps and other types. In one case a flexible bronchoscope was used because the FB was located in the periphery of the lung.

After extraction of the FB, and prior to concluding the procedure, the airway was re-examined to inspect the mucous membrane, aspire trapped secretions and rule out the presence of fragments or other FBs.

Antibiotics (ampicillin–sulbactam 50 mg/kg/day intravenously or amoxicillin–clavulanic acid 40 mg/kg/day orally, for 7 days) and corticoids (dexamethasone 0.5–1 mg/kg/day

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