Case Reports

An Unusual Technique for the Removal of Peripheral Retained Foreign Body from a Paediatric Bronchial Tree

A. A. Ashoor


استنشق مجلس ولاعة سماير غازية بواسطة طفل سعودي واجنس في الفرع الفرعى الخلاقي بالجرى الموالي
للفص الرئوى السفلى الأيمن.
لقد تم استخراجه بواسطة استعمال ماسك مرن تحت مراقبة جهاز أشعة مختصر. سوف يتعرض المقال إلى
وصف الحالة والطريقة التي اتبعت لاستعاد الجسم الغريب.

The nozzle of a gas lighter which was aspirated and lodged in the posterior basilar segment of the right lower lobe bronchus of a Saudi child, was removed using a flexible forceps under the guidance of fluoroscopy.

In children, foreign body aspiration still is and will continue to be the cause either of chest infection or of acute respiratory distress.1,2 The removal of such foreign bodies still presents a challenge for the ENT surgeon. Multiple factors may affect the proper management of such a child. These factors may include those before hospitalization such as delay in transferral and admission of the patient, or those after hospitalization of the patient such as the absence of an experienced endoscopist and anaesthetist, or the lack of suitable instruments. For proper and safe removal of a foreign body from a tracheo-bronchial tree of a child, four main requirements should be made available; first, an experienced endoscopist and anaesthetist; second, a complete set of instruments specifically designed for such a procedure; third, a well-defined working plan and fourth, well organized team work between the endoscopist, anaesthetist and assisting nurse.2

We report a patient in whom the nozzle of a gas lighter was aspirated into the right main bronchus. This foreign body could not be removed by the conventional means of paediatric grasping forceps and telescopesc. For this particular case we used urology 3 French flexible biopsy forceps under the guidance of fluoroscopy.

Case Report

A 6-year-old Saudi boy aspirated the nozzle of a gas lighter, and presented to Al-Qatif Hospital Emergency Room with cough and wheezing breath sounds. An attempt to remove the foreign body by conventional means only resulted in pushing it deeper into the bronchus. Following this trial, the patient was transferred to our institute. A chest X-ray revealed the foreign body to be lodged in the posterior basilar segment of the right lower lobe bronchus. Attempts to visualize and remove the foreign body failed. Some days later using a flexible biopsy forceps under guidance of fluoroscopy the foreign body was removed with no further difficulty and the patient was saved a major surgical procedure (Figs 1, 2, 3).

Procedure

Under general anaesthesia a suitably sized paediatric rigid ventilating bronchoscope was passed into the proximal segment of the right lower lobe bronchus. Then a suitable size telescope was passed through the bronchoscope to identify and localize the foreign body.

The right lower lobe and its segmental bronchus was inspected thoroughly, but the foreign body could not be visualized. The mucosa was oedematous, swollen, congested and covered with mucous secretion. Therefore, the procedure was terminated and patient was started on a systemic antibiotic, hydrocortisone and active chest physiotherapy.

Department of Otorhinolaryngology, King Faisal University, PO Box 2114, Dammam 31451, Saudi Arabia

ABDUL AZIZ ASHOOR FACHARZT MD, Professor and Chairman

Date submitted: 16.04.90.
Date accepted: 30.09.90.
A chest X-ray performed prior to the procedure to be described next showed that the foreign body still remained in the same place.

Five days later under general anaesthesia, using rigid paediatric ventilating bronchoscope and telescope, the entrance to the right posterior basilar segment bronchus was identified, then the telescope was removed and under guidance of fluoroscopy a 3 French flexible urology biopsy forceps was pushed through the posterior basilar segment bronchus of the right lower lobe to come into contact with the foreign body. After many trials (namely manoeuvring, grasping and slipping of the foreign body under fluoroscopy) the foreign body was grasped at its grooved tip and the whole system (foreign body, forceps and bronchoscope) was removed as one unit. The bronchoscope was reintroduced to check for any trauma caused either by the foreign body or by the procedure. The patient was discharged the following day in good condition.

Discussion

With advances in endoscopic techniques and the improvement in instrumentation and general anaesthesia, successful extraction of aspirated foreign bodies from the tracheobronchial trees of children has become the rule and not the exception and hence the morbidity and mortality have been reduced to a minimum.

The location, size and consistency of the inhaled foreign body usually dictate the technique and instrumentation which should be used to remove the foreign body. These include forceps, basket, Fogarty catheter, Foley catheter or a conservative approach. If all these methods fail, then thoracotomy with bronchotomy or even segmental pulmonary resection are the final choice.
However, there is no doubt that the safest technique used to remove the foreign body with the least trauma and complication to the child is by direct visualization by the endoscopist using different tools.2 Despite modern improvements peripherally impacted foreign bodies may not be accessible to direct visual localization and manipulation and are still difficult to retrieve. Their removal presents the greatest risk of injury to the tracheo-bronchial tree. In these cases localization and removal of such foreign bodies can be done under the direction of fluoroscopy.10 Using this technique in the present patient it was possible to remove the foreign body with minimal difficulty, saving the patient the risk of open thoracotomy and bronchotomy. It is strongly advised that the use of fluoroscopy without and with contrast media should be used for the visualization of inaccessible foreign bodies and for the localization of non-radio-opaque foreign bodies.10

Acknowledgement
I would like to extend my thanks and appreciation to Dr. Gassan Rifai, Chairman of the Urology Department, Security Forces Hospital, Riyadh for his advice and assistance.

References