Abstract. – Foreign bodies of the upper aerodigestive tract are common problems encountered by the otolaryngologist and general surgeons. While the diagnosis seems straightforward, it is sometimes delayed until after serious complications have occurred. The treatment of choice is endoscopic retrieval under general anesthesia. The procedure should be preceded by the completion of appropriate studies (radiographic and other specifically indicated for the patient) planned and performed by the endoscopy team. Time invested in preparation and planning will usually yield a speedy recovery of the patient. Bran is a natural fiber that undergoes considerable expansion and thickening when hydrated. Due to this property, it has been used in “weight loss” tablets that in the stomach undergo expansion and are expected to cause early satiety. These tablets are usually marketed as over-the-counter (OTC) diet products by a number of pharmaceutical manufacturers. These supplements consisting primarily of dietary fibers, so common and inoffensive-seeming, rarely may have severe side effects, such as sudden esophageal obstruction. We report a case of a bran dietary product impacted in the cervical esophagus in a 45 year old woman, presenting as an emergency complaining of retrosternal discomfort and difficult to swallow or drink. The technique for removal of such object is also reported.

Key Words: Esophageal foreign body, Bran, Esophageal obstruction, OTC drugs for weight loss, Dysphagia.

Introduction

Foreign body ingestion and aspiration may affect persons of any age, but the vast majority of these accidents occur in children under the age of five. It is estimated that 1500 deaths related to the ingestion of foreign materials and 3000 deaths due to complications of foreign material aspiration occur annually1.

The problem of foreign body ingestion and aspiration is not new, but significant dilemmas in the diagnosis and treatment of this problem remain despite of medical progress. Since C. Jackson described endoscopic techniques for the removal of foreign bodies in 1936, this has remained the safest and most trusted method of treatment.

In adults, food is by far the most common foreign body of the aerodigestive tract2,3. Young children exploring their environments with their mouths are at risk for the ingestion and aspiration of small non-food objects4.

The signs and symptoms of foreign body ingestion or aspiration may be different and often very not-specific. In most instances, patients are able to relate to a history of ingestion or aspiration, but pediatric patients are often unable to give such information due to their too young age. When any patient have history of ingested foreign body, investigation is mandatory regardless of the age or apparent absence of signs and symptoms5.

Clinics

Esophageal foreign bodies may cause a lot of symptoms ranging from complete esophageal obstruction with overflow of secretions and aspiration, to mild odynophagia or dysphagia. These symptoms are caused by the compression of the tracheal wall by large objects lodged in the esophagus. Esophageal foreign bodies are most frequently located at the level of the cricopharyngeus muscle, the narrowest portion of the esophagus6,7.

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In patients suspected of having ingested or aspirated foreign object, plain two dimensions radiographs of the neck and chest must be taken for pre-operational diagnosis and evaluation. Often, for radiopaque foreign body a radiogram should be taken in the greatest diameter of the object helping in defining the anatomy prior to retrieval. If the history of ingestion of a foreign body which is likely to be radiopaque is given but it is not noted on films of the neck and chest, a radiogram of the abdomen may reveal its progression into the stomach or beyond.

Barium studies should be used with great caution when there is suspicion of a not-radiopaque foreign body of the esophagus because complete obstruction may result in aspiration of the contrast material. In addition, residual contrast in the esophagus may delay the endoscopic procedures and obscure the findings. These studies should only be performed when the suspicion of esophageal foreign body is low and then only a minimal amount of contrast material administered. CT scanning and MRI are rarely useful in the evaluation of foreign bodies in the aerodigestive tract, but may be indicated in the event that the object is not found during endoscopic examination and migration from the airway or esophagus is suspected.

During the time, many treatments for airway and esophageal foreign bodies have been proposed but rigid endoscopy has proven to be the safest and most efficient therapy. Flexible endoscopes have burdens utility and represent the best method for retrieving objects which have passed into the stomach and halted in progression, but limited by the types of instruments available to grasp the foreign body. Some surgeons have reported success in the retrieval of smooth foreign bodies of the esophagus using catheters with inflatable balloons under fluoroscopic guidance. This treatment is limited by rather strict indications and run the risk of dislodging the foreign body into the airway. Others have used smaller catheters in conjunction with rigid endoscopy and fluoroscopy control for the retrieval of distal airway foreign bodies.

**Case Report**

We report the case of G.F., a 45 years old woman, housewife, which referred to the First Aid Centre of her city hospital for acute dysphagia raised after the ingestion of 2 capsules of a dietary bran product before the lunch. At Emergency Room (ER) she referred retrosternal pain, difficult in swallowing and drinking, and “air hungry” sensation. An ear, nose and throat (ENT) consultation was performed and the patient was discharged after hyoscine butylbromide (Buscopan®) 1 fl infusion and EGDS prescription. A few hours later the patient newly referred to the same First Aid Center and a new ENT consultation was performed. Due to the persistence of the clinical symptoms of esophageal obstruction, although in absence of clinical signs, the patient undergone to direct Rx plan of the upper aerodigestive tract that was negative. Therefore, a contrast esophagogram was performed after water-soluble medium ingestion. This second film demonstrated the esophageal obstruction by a pair of radiotransparent soft masses in the area of the upper esophagus (Figures 1, 2 and 3). The patient was hospitalized in General Surgery and transferred to ENT Division after a few time. The patient undergone to
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ECG and thoracic Rx, which resulted both negative as well as the new ENT physical exam. The day after, because of the persistence of dysphagia, hypersialorrhea and thoracic pain, an EGDS was performed under conscious sedation with a flexible endoscope. Because of the gum-like consistency of the masses, during the endoscopic procedures was decided to push down those. Thereafter the complete clinical resolution was obtained and the patient was discharged within a few hours.

Discussion

When the diagnosis of foreign body ingestion or aspiration is secured, or the history and investigations are highly suggestive of foreign body accident, preparations should be made for endoscopic retrieval under general anesthesia. The vast majority of foreign bodies that reach the ER for examination have passed the acute phase and not always need to be regarded as emergencies. The procedures should be attempted after the completion of the appropriate studies, the assembly of experienced personnel, the location and arrangement of the proper equipment, and proper preparation of the patient.

Exceptions are these situations requiring adequate time for careful preparation: (1) actual or potential airway obstruction; (2) aspiration of dried beans or peas; (3) ingestion of disc batteries with esophageal lodging; (4) signs or symptoms of esophageal perforation.

The endoscopist should then spend adequate time selecting the appropriate instrument with which to grasp the object and reply this multiple times with a “come and go” movement. Alternatively several instruments should also be prepared and tried should unexpected circumstances
arise. All of the instruments should be inspected to assure that they are in proper working order, minimizing the risk of equipment failure.

Once adequate preparation has been completed and potential complications reviewed, the patient is brought to the operating suite. For esophageal foreign bodies, routine general anesthesia is induced and the patient has endotracheal intubation as this allows maximum airway protection. If the foreign body is high lodged in the esophagus, the shorter cervical esophagoscope may be used.

Complications encountered with foreign bodies of the upper aerodigestive tract are usually related to anaesthetic complications or those occurring from long-standing, undiagnosed foreign bodies. These includes stridor, wheezing, pneumonia and lung abscess for foreign bodies in the airway, while perforation of the esophagus with subsequent mediastinitis and erosion into vascular structures may result from indwelling esophageal foreign bodies. Complications directly related to the procedures includes pneumothorax, pneumomediastinum, laryngospasm, and subglottic oedema. Occasionally, endoscopic examination may be unrewarding despite obvious presence of foreign body on radiography. This may occur due to the hiding of the foreign body in to mucosal fold in endoscope progression, obscuring the object from view and preventing its tactile detection. Withdrawal of the brush and reinsertion will usually reveal the foreign body location. Negative endoscopy may also be related to the migration of the object into the aerodigestive tract necessitating further radiographic studies such as CT scanning or MRI in order to better define its position. In such situations, removal of the object may require thoracotomy. Post operative follow up is usually straightforward and antibiotics or corticosteroids are necessary only for the treatment of complications. Most patients, as the reported one, are able to be discharged the day following the procedures if the lungs sounds clear and the patients are afebrile. In conclusion, bran diet pills, one of the most popular forms of weight control, because of the risk of major adverse effects should be used only with extreme caution, as well as any medication.

References