

*Case report***Delayed chicken bone removal from the esophagus**

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SUMMARY

Foreign body (FB) ingestion is frequently encountered in clinical practice. Only 10-20% of all cases need endoscopic removal. However, complications may occur and can be fatal, especially regarding sharp FB. Emergency endoscopy is the method of choice for both diagnosis and removal of any impacted FB. We report a case of a 53-year-old female who was admitted to our hospital for chicken bone ingestion a week ago. During that time she had been examined at another hospital and the X-ray misinterpreted as normal. When she was referred to our hospital, an emergency flexible endoscopy was performed, and an impacted chicken bone was removed from the upper esophagus, revealing deep ulcers on the esophageal wall. We present radiographic, CT, and endoscopic findings and conclude that in adults, emergency upper GI endoscopy is a quick, easy to perform, reliable and safe method for diagnosing and handling FB ingestion, even in difficult and neglected cases.

Key words: foreign body, bone impaction, flexible endoscopy, esophagoscopy

INTRODUCTION

Ingestion of foreign bodies (FB) is common, mainly in pediatric age groups, edentulous adults, prisoners, psychiatric patients, and alcoholics¹. However, every person, especially old aged people, are potential candidates for foreign body ingestion, mainly fish or chicken bones. Foreign body impaction in the esophagus is quite common when they are sharp, and their removal must be done within 24 hours, otherwise complications can be fatal².

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Nowadays, in adults, flexible endoscopy seems to be the appropriate method for sharp FB removal, with very few complications.

We present a case of a delayed chicken bone removal from the esophagus of a 53-year-old female, endoscopic findings prior and after endoscopic removal and a review of the literature on the role of emergency endoscopy in the handling of patients with foreign body ingestion.

CASE REPORT

We present a case of a 53 year old woman who accidentally swallowed a chicken bone a week ago. At that time, she was referred to the emergency room of another hospital. She experienced sensation of foreign body, neck pain, dysphagia, odynophagia and drooling. Oral examination and indirect laryngoscopy were negative. Plain films of the neck and chest, were misinterpreted as normal, although the bone was visible (Figure 1). Anti-inflammatory drugs were prescribed and the woman was discharged.

Five days later, as fever was added to her already deteriorated symptoms, the patient visited her GP, who re-examined the X-rays and asked for a Computed Tomography. CT revealed impaction of a bone between the 5th cervical and the 1st thoracic vertebrae (Figure 2). Immediately, the patient was referred to the emergency services of our hospital. Oral examination followed by indirect laryngoscopy was negative. The patient immediately underwent upper GI endoscopy under conscious sedation and the FB was removed with polypectomy snare (Figure 3). Deep ulcers appeared on both sides of the esophageal wall after bone removal (Figure 4). The patient was hospitalized for one week under close surveillance. Antibiotics and proton pump inhibitors were administered intravenously in order to control the local inflammation and ulceration and the patient took nothing by mouth except sucralfate. Two days later, the pa-



Figure 1.

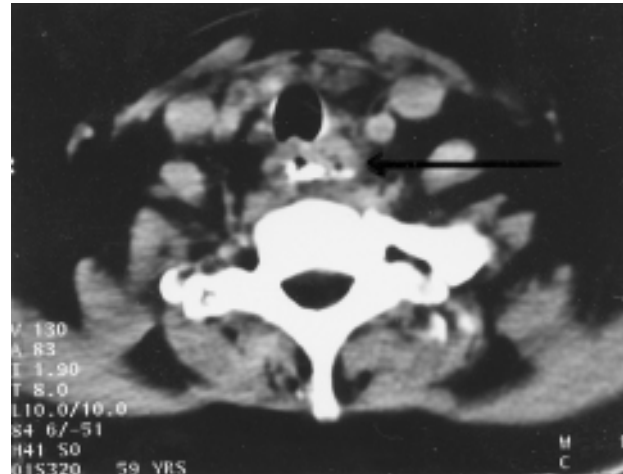


Figure 2.

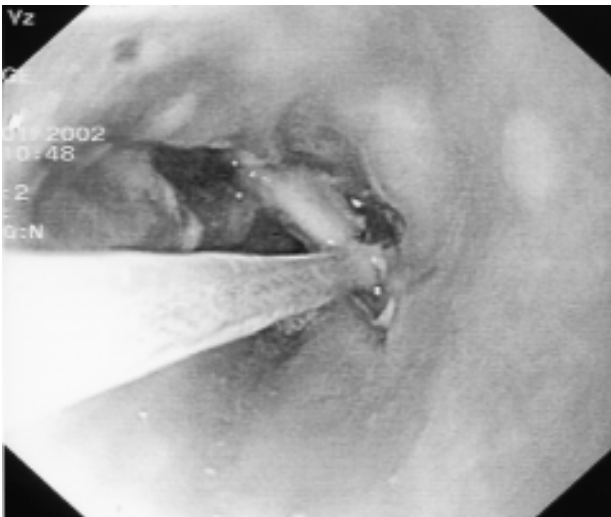


Figure 3.



Figure 4.

tient was feeling better and was afebrile. In a new endoscopy performed a week later ulcerations were still present. The patient was given a prescription of 40mg of omeprazole daily and was discharged. A month later a new endoscopy revealed complete recovery of the esophageal ulcerations.

DISCUSSION

The vast majority of swallowed foreign bodies (80-90%) will pass spontaneously through the gastrointestinal tract in 7-10 days without causing any complication, leaving approximately 10-20% that will have to be removed endoscopically and about 1%, will require surgery.³ Sharp foreign body impaction, that in the esophagus, mainly fish or chicken bones, is a dangerous and

difficult situation to handle. Bone removal should be performed within than 24 hours, otherwise the complications can be fatal⁷. Impacted FB in the esophagus can easily cause mucosal ulceration, inflammation or even infection in the neighbouring tissues. Fatal complications, such as perforation and subsequent mediastinitis, para- or retroesophageal abscess and empyema can also occur. Aorto-esophageal fistula is a rare complication.^{4,5}

Correct diagnosis is the first step for proceeding to the proper treatment of such difficult conditions. Physical examination and plain films of the neck and chest are the standard examinations to perform in diagnosing foreign body ingestion. However, X-rays prove to be unsatisfactory in diagnosis when fish or thin chicken bones

are involved. Evans et al⁶ report a 25,3% sensitivity and a positive predictive value 72,7% for the detection of impacted fish bones. Derowe and Ophir⁷ note 24% false-positive and 40% false-negative plain films. Other studies prove that plain films have a low yield in detecting foreign bodies, especially sharp ones, in the esophagus.^{4,8,9}

Barium swallow studies are important to evaluate non-radio-opaque material that may be lodged within the esophagus, the presence of strictures, diverticulae, or congenital anomalies of the esophagus. However, this examination has three disadvantages. First, the barium studies have a rate of false-negative or false-positive findings that ranges between 6.5 to 30%⁴. Second, the risk of aspiration is always present, and third the barium covers FB, thus jeopardizing subsequent Endoscopy.¹⁰

Computed tomography is very effective in detecting esophageal bone impaction, with a sensitivity of 100%, a specificity of 93,7%, and a positive predictive value of 96,7%.³ Moreover, CT can show the existence and location of bones, and visualize the damage of secondarily-induced inflammatory changes in the neighbouring structures,⁹ as happened in our case.

Our patient had a whole week's delay, and only luck can explain why perforations did not occur. Rigid and flexible endoscopy are both safe and effective in removing esophageal foreign bodies.^{1-3,10,11} Nowadays, in adults, it seems that flexible endoscopy is preferred, as it is successful in the majority of patients (76% to 98%), allows thorough examination of the esophagus, stomach and duodenum, does not usually require general anesthesia, and is less expensive.¹¹

The technique for removing FB is one: approach the FB with the endoscope and remove it with the use of a polypectomy snare, a biopsy forceps or a basket.

The technique for removing a neglected case of impacted FB is the same. The delay just increases the risk of perforation. The hands of an expert play a major role in successful FB removal.

Although it seems that CT scan can effectively diagnose esophagus FB impaction, flexible endoscopy

remains the method of choice in patients complaining of symptoms related to FB ingestion, for both a proper diagnosis for the impaction of any FB in the esophagus and a therapeutic removal of the FB at the same time as the diagnostic endoscopy. Additionally, in neglected, difficult, and complicated cases, flexible endoscopy is the only conservative, non-operative method for handling impacted FB removal.

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