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Repeated Long Esophageal Foreign Bodies Ingestion: A Case Report

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Abstract

An unusual case of repeated very long foreign bodies within esophagus removed endoscopically without general anesthesia is reported. A 24-years-old male was sent to emergency room due to foreign body of esophagus. Chest roentgenogram showed a long toothbrush. It was removed smoothly with a polypectomy sanre. Unfortunately, just one week later, he swallowed other very long foreign bodies. They were metallic chopsticks. These were more difficult to be removed due to very smooth surface. We put the examiner's fingers into the patient's mouth and pulled the chopsticks gradually. Although most gastrointestinal tract foreign bodies will pass spontaneously, 10 to 20% require non-operative intervention and 1% requires surgery. Long foreign bodies should be removed especially due to possibility of severe complications.（J Intern Med Taiwan 2009; 20: 550-554）

Key Words：Esophagus, Foreign body

Introduction

Gastrointestinal tract foreign bodies are not uncommon. Most of them pass through the gastrointestinal tract without difficulty, but impacted foreign bodies can cause perforation & other complications[1] Long foreign bodies are difficult to remove endoscopically because of problems related to orientation and grasping. There are only a few reports of endoscopic removal of long foreign bodies, such as spoons[2]. In this case report, we describe an unusual case in which repeated long foreign bodies impacted within the esophagus, and were removed successfully by endoscopy without general anesthesia.

Case Report

A twenty-four years old male suffered from foreign body ingestion on 2nd of August 2006. He was initially sent to a local hospital. Foreign bodies within the esophagus were discovered by chest roentgenogram, and he was referred to the emergency room of Jen-Ai General Hospital in the afternoon.

The patient denied history of any systemic disease or major operation. But autism was diagnosed since 12 years ago. He did not have a habit of cigarette smoking or alcohol drinking. On arrival at emergency room, the patient appeared normal. He was conscious, lucid, and cooperative.

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Vital signs were: blood pressure 110/72 mmHg, pulse rate 112/min, respiratory rate 18/min and temperature 37.5℃. His sclera was not icteric and conjunctiva was not pale. Chest examination showed clear breathing sounds over both lung fields. Auscultation of the heart showed a regular heartbeat without murmur. No tenderness of the abdomen was present. Laboratory data showed that white blood cell count was 7200/ μL without left shifting, hematocrit 38%, hemoglobin 12.5 g/dL, sodium 135 mmole/L, potassium 4.5 mmole/L, blood urea nitrogen 20 mg/dL, creatinine 1.0 mg/dL, AST 20 IU/L, ALT 18 IU/L, alkaline phosphatase 220 IU/L and total bilirubin 1.0 mg/dL. The chest roentgenogram showed a foreign body within the esophagus. (Figure 1) The electrocardiogram showed normal sinus rhythm.

Due to the finding of a very long esophageal foreign body, he was then sent to our endoscopy room at 4:30 pm. We explained the condition and possible adverse effects to the patient and the family. They agreed to receive endoscopic examination and possible treatment, and the endoscopic examination started at 4:40 pm. The patient received local anesthesia with spraying medicine containing xylocaine. A toothbrush was noted within the esophagus and was removed successfully by a polypectomy snare. He was then discharged from the emergency room at 5:10 pm. Unfortunately, the patient ate noodles at noon on 23th August 2006 and he swallowed a pair of metallic chopsticks later. He was sent to our emergency room directly at about 4 o'clock on the same day. On the second arrival at ER, the vital signs were stable without cardiopulmonary distress. The patient was conscious, and no striator nor wheezing breathing sounds were noted. After chest and abdominal roengtenogram examinations, pair of metallic chopsticks within esophagus & upper stomach was noted.(Figure 2)

He was sent to our endoscopy room at 5:20

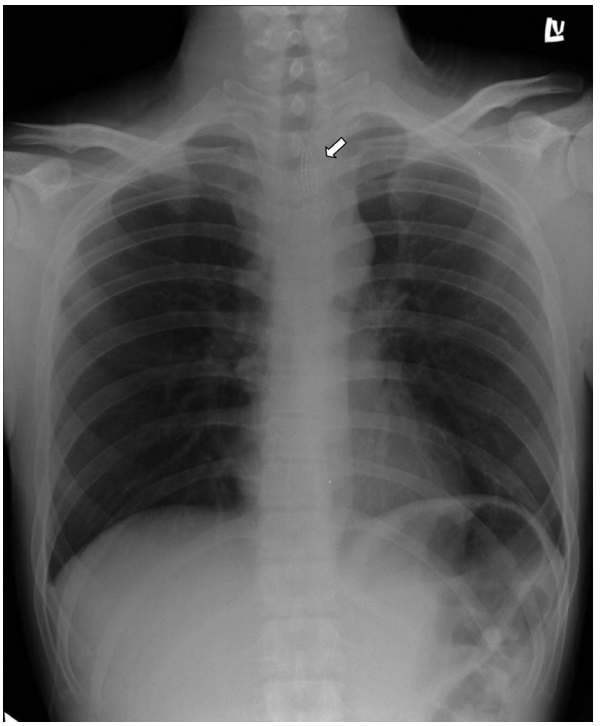

Fig.1. Plain chest radiograph showing a foreign body within the esophagus.

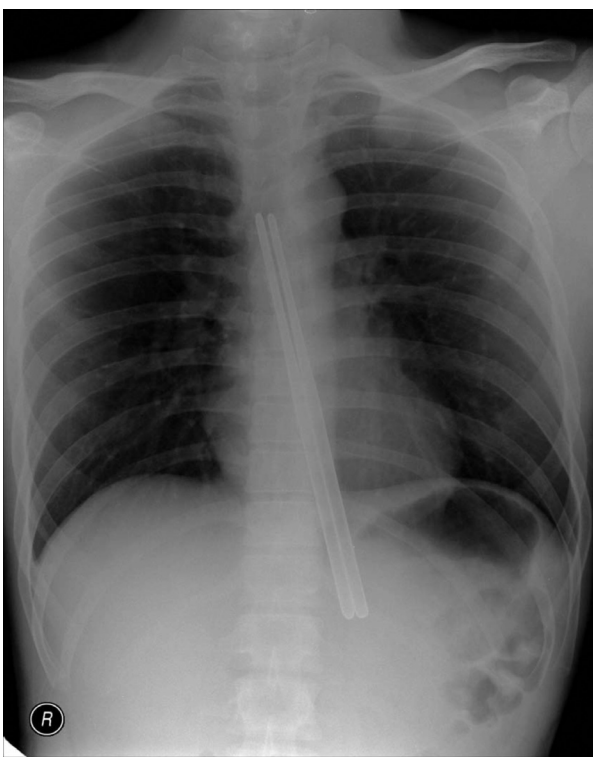

Fig.2. Plain chest radiograph showing pair of metallic chopsticks within esophagus and upper stomach.

pm. We started the endoscopic examination immediately and tried to remove the chopsticks by polypectomy snare. We used the snare to grasp the chopstick & gently withdraw it. Unfortunately, the tip of one chopstick was pulled to push the top of the throat. Although the tip could be touched by the examiner's hand, it was falling down into the esophagus due to the very smooth surface of the chopstick. Then we tried the same procedure again. During the second trial when the upper tip of one metallic chopstick touching the throat, we removed the mouthbite and put the examiner's fingers into the mouth of the patient. Then we pulled one of the chopsticks gradually with the patient extending his neck backward. On the third trial, we removed another chopstick by using same method. The patient was observed at emergency room for another hour. Then he was discharged from ER with stable condition.

Discussion

Foreign bodies are classified as true foreign bodies that are naturally foreign to the gastrointestinal tract and food-related foreign bodies. True foreign bodies can be classified as sharp or dull, pointed or blunt, and toxic or non-toxic[1]. Eighty to ninety percents of gastrointestinal tract foreign bodies will pass spontaneously, although ten to twenty percents require non-operative intervention and one percent need surgery[3,4].

Presentation of esophageal foreign bodies may range from acute esophageal obstruction to asymptomatic impaction in the distal esophagus[1]. History is the most important part of the initial diagnostic evaluation. Adults and older children can usually give a history, but younger children and the mentally retarded may be unable to give such a history. Although the foreign bodies in the present case were very long, the patient did not present significant symptoms.

Adherence to the general principles of foreign body removal and proper preparation result in successful removal rate of as high as 98.8%, with minimal or no complications[1].

Indications for removal depend on the type of foreign bodies and whether or not it impacts in the esophagus. Sharp, pointed, and elongated foreign bodies are associated with a higher incidence of perforation- as high as 35% in one series- and should be removed. Even if an elongated foreign body has passed through the esophagus, it becomes trapped by the retroperitoneally fixed angles of the duodenum and eventually results in perforation[1]. Murat recommended removal of all foreign bodies longer than 6 cm in children and longer than 13 cm in adults[1]. Some doctors remove all long & sharp foreign bodies from the esophagus & stomach due to a greater propensity to become impacted and to cause perforation[1]. The foreign bodies in this report are longer than the above criteria. The first foreign body (toothbrush) was about 18 cm in length and the second & third foreign bodies (chopsticks) were even longer and about 19 cm in length. These extra long foreign bodies must be removed either endoscopically or surgically due to possibility of dismal complications.

Endoscopic instruments that could be used include alligator and rat-toothed forceps, snares, and baskets. Duplication of the foreign body could be manipulated with the available instrument to determine which one is best suited to grasp and manipulate it[1].

Elongated foreign bodies such as toothbrushes, toothpicks, and bones are the most common foreign bodies in the stomach that require surgery for their removal[5].

A firm grasp is required before withdrawal is attempted; otherwise, the foreign body may become dislodged at points of anatomic narrowing such as the cricopharyngeus and the hypophayrnx. Elongated foreign bodies such as wires or pens should be grasped with a snare close to the cephalad

end of the subject so that it can align itself with the long axis of the esophagus during withdrawal[1]. Toothbrush could be grasped from the brush side but the metallic chopsticks were very difficult to grasp because of the very smooth surface. In the present case, we could grasp the toothbrush firmly but could grasp the chopsticks only loosely. So the chopstick slid down when it was pulled upward through the hypopharynx. Fortunately, we could remove the chopstick slowly by putting examiner's hand into the mouth of the patient.

Recurrent episodes of foreign body ingestion may occur, especially in prisoners, psychiatric patient, and patients with peptic stricture. Previous papers reported the recurrence rate from 2.7% to 10%[6]. As many as 2,533 foreign bodies have been recorded in the stomach of a single patient[7]. The vast majority of foreign bodies were seen in the pediatric age groups, followed by edentulous adults, prisoners, and the psychiatric patients[8]. The present patient swallowed very long foreign bodies on the successive two weeks. This may be traced to the history that the patient was fond of long objects since his childhood according to the statement of his family. The patient in this report was a victim of autism but had no other history of psychiatric disorder. He appears normal, and most importantly, he was cooperative during the examination, thus allowing us to perform the removal procedure with just local anesthesia.

Once foreign body extraction has been accomplished, one should always consider a perforation of esophagus. In the follow -up period, one should diligently watch for signs and symptoms of perforation, such as fever, tachycardia, shortness of breath, chest pain, abdominal pain, and crepitation in the neck[6]. The abrasion produced by a bone cause the same symptoms as impaction of the foreign body itself[9]. The patient did not present further symptoms after several months and fortunately he did not swallow other long foreign body again into his gastrointestinal tract.

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食道反覆吞入狹長異物：一病例報告

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摘　要

食道內反覆吞入非常狹長的異物並不常見，我們將報告在無全身麻醉下經由內視鏡予以移除之病例。一名24歲男性被發現食道異物而送至急診，胸部X光顯示爲一支牙刷，經由息肉切除套環予以移除。但一週後同一病人又吞入了一雙金屬環保筷，因其表面非常光滑較不易抓緊，我們利用套環配合檢查者的手指予以移除。雖然大部分腸胃道異物會自行排除，仍有10-20%需要非手術方法及1%需要手術方式予以移除，而狹長的異物因爲產生併發症的機會很大而特別須要予以處理。