Özofagus Yabancı Cisimleri: 117 Vaka

Foreign Bodies in the Esophagus: 117 Cases

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ÖZ

GİRİŞ ve AMAÇ: *Biz bu çalışmamızda; Kliniğimizde Özofagus yabancı cismi(ÖYC) tanısı ile tedavi edilen 117 hastayı retrospektif olarak verlerini değerlendirmeyi amaçladık.*

YÖNTEM ve GEREÇLER: *Mart 2012 - Şubat 2020 tarihleri arasında kliniğimizde ÖYC tanısı alan ve rijit özofagoskopi ve Magill klemp ile müdahale edilen 117 hastanın hastane kayıtları retrospektif olarak incelendi. Olgular yaş, cinsiyet, yabancı cismin özellikleri, yeri, klinik semptomlar ve komplikasyonlar açısından değerlendirildi.*

BULGULAR: *Çalışmamızda 23 olgu 18 yaşında veya daha büyüktü (% 25). Bu gruptaki kişilerin yaş ortalaması 51,9'dur. 94 hasta (% 75) 18 yaşından daha gençti ve ortalama yaş 3,6 idi. Hasta grubunda 18 yaşın altında yutulan yabancı cisimler oldukça değişkendi, ancak % 50'si metal paradan oluşuyordu. 15 yaşın üzerindeki hastalarda, kemik parçaları (% 56) ve sert gıda parçaları (% 30), daha baskındı. Yutma güçlüğü, hipersalvasyon ve boğaz ağrısı gibi semptomları olan hastalar, sert özofagoskopi ve bir magill klemp uygulanarak çıkarıldı*

TARTIŞMA ve SONUÇ: *ÖYC'leri özellikle pediyatrik yaş grubunda görülebilen önemli bir durumdur. Tanı ve tedavide gecikme yaşamı tehdit eden sonuçlara yol açabilir. Rijit özofagoskopi, ÖYC'leri çıkarmak için en çok tercih edilen yöntemdir.*

Anahtar Kelimeler: *Özofagus, yabancı cisim, rijit özofagoskopi*

ABSTRACT

INTRODUCTION: *In this study; We aimed to retrospectively evaluate 117 patients who were intervened with the diagnosis of EFB in our clinic.*

METHODS: *The hospital records of 117 patients who were diagnosed with EFB in our clinic between March 2012 and February 2020, and intervened with rigid esophagoscopy and Magill clamp were examined retrospectively. The cases were examined for age, sex, characteristics and location of the foreign body, clinical symptoms and complications.*

RESULTS: *In our study, 23 cases were 18 years of age or older (25%). The average age of those in this group was 51,9. 94 patients (75%) were younger than 18 years and the mean age was 3.6.Foreign bodies swallowed in the patient group under the age of 18 varied, but 50% of them consisted of metal money. Bone fragments (56%) and hard food pieces (30%) were more predominantly in the patient over 15 years of age. Patients with symptoms such as inability to swallow, hypersalvation, and sore throat were removed by applying rigid esophagoscopy and a magill clamp.*

DISCUSSION AND CONCLUSION: *EFBs are an important condition that may be seen especially in the pediatric age group. Delay in diagnosis and treatment can result in life-threatening outcomes. Rigid esophagoscopy is the most preferred method to remove EFBs.*

Keywords: *Esophagus, foreign body, rigid esophagoscopy*

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INTRODUCTION

Esophageal foreign bodies (EFB) are unfavorable conditions especially seen in children and have serious consequences since the esophagus is located in the mediastinum. The majority of ingested foreign bodies passes through the gastrointestinal system (GIS) without meeting any obstacle, and 80% of them spontaneously reach the anus through the gastro intestinal system and are excreted in stool without the need for any intervention (1,2). Anatomical narrowing of the esophagus create areas where foreign bodies are likely to become entrapped. To prevent possible serious complications, the foreign body should be removed as soon as possible when EFB is detected. In this study, we retrospectively examined 117 cases who applied to our clinic due to an esophagus foreign body between March 2012 and February 2020.

MATERIAL AND METHODS

The hospital records of 117 patients who were diagnosed with EFB in our clinic between March 2012 and February 2020, and intervened with rigid esophagoscopy and Magill clamp were examined retrospectively. The cases were examined for age, sex, characteristics and location of the foreign body, hospital admission time, clinical symptoms and complications.

All of the patients are the patients who were referred to us from the emergency service and other clinics. Firstly, a detailed history was taken to obtain information on the ingested body. All the cases underwent postero-anterior (PA) and bilateral chest x-ray including the cervical region. All the procedures were performed under general anesthesia. A part of foreign bodies in the first narrowing being the narrowest portion of the esophagus were removed using Magill clamp under direct vision with a laryngoscope. Rigid esophagoscopy and forceps were used for the foreign objects in the first narrowing of the esophagus, which could not be removed with a Magill clamp and were located more distally in the esophagus. The foreign bodies which were located in the lower esophagus and could not be removed were pushed to the stomach. All the foreign bodies pushed to the stomach were followed up by the pediatric surgery and general surgery clinics. In these cases, the foreign body was seen to be excreted by defecation without the need for any additional surgical intervention. All of the cases were kept under observation for at least 24 hours.

Ethics Committee Approval

Approval was obtained from the ethics committee of Necmettin Erbakan University Meram Medical School for the study.

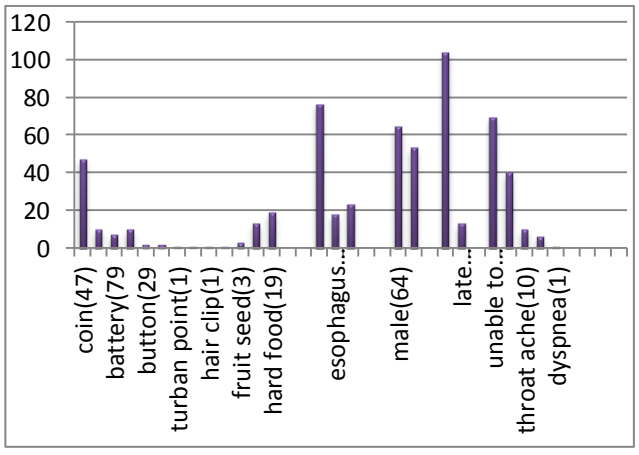
Statistical analysis

Statistical analysis was performed using PASW for Windows version 17.0 software (SPSS Inc., Chicago, IL, USA). Descriptive data were presented in mean ± standard deviation, median (min-max) or number and frequency.

RESULTS

64 (54%) of the patients were men, 53 (46%) were women. The youngest one was 4 months old and the oldest one was 90 years old. 23 cases were aged 18 and older (25%). The average age of this group was 55,82 ± 16,37 years old. 94 (75%) patients were under the age of 18 and their mean age was 4.85 ± 8.84 years old. In the patient group under 18 years old, the ingested foreign bodies varied, however, 50% of them were coin. In the cases older than 18 years old, the foreign bodies were mostly bones (56%) and pieces of solid food (30%).

The foreign bodies removed from our patients were as follows: coin (47) (picture 1), safety pin (10) (picture 2), battery (7), toy pieces (10), button (2), earring (2) (picture 3), turban pin (1), screw (1) (picture 4), hairpin (1) (picture 5), fishbone (1), plum seed (2), apricot seed (1), bone piece (13) and pieces of solid food (19). (Graph 1).



Graph 1: Foreign bodies extracted from our patients are shown in the graphic

The clinical findings of the patients were aglutition (69 patients), hypersalivation (40 patients), sore throat (10 patients) and hemoptysis (6 patients). A 6-month old case had serious dyspnea due to the presence of organic food (fried hardened potato) compressing the trachea. These symptoms could be present simultaneously.

In the patients aged 18 and older, the foreign bodies were mostly organic foreign bodies such as pieces of solid meat, and the rate of admission to hospital within 24 hours was 18%. In patients under 18 years old, the most commonly ingested foreign body was coin (50%). The rate of admission to hospital within the first 24 hours was 87%. Among all the cases, the esophagus foreign body was detected in the first narrowing of the esophagus in 65% of the patients (76 patients), in the second narrowing of the esophagus in 15% of the patients (18 patients) and in the third narrowing of the esophagus in 20% of the patients (23 patients).

In 4 cases, the foreign body located in the first narrowing of the esophagus was removed with Magill clamp, while, in other cases, it was removed using forceps. In 2 cases with the foreign body located in the distal esophagus, the foreign body was pushed to the stomach because its removal was considered risky. Hyperemia was observed in the esophageal mucosa in 3 cases that ingested a battery, and mild hemorrhage was detected in the mucosa in 3 cases that ingested bonefish and safety pin. No cases of procedure-related perforation and complications occurred. The patients with mucosal hemorrhage and hyperemia discontinued oral intake for 1 week and received medical treatment. They continued oral intake following being checked with esophageal passage radiography.

DISCUSSION

The esophagus is a muscular tubular structure that extends from the 6th cervical vertebra to 11th thoracic vertebra (3). The length of the esophagus that plays a role in the passage of foods to the stomach is approximately 40-42 cm in men and 35-37 cm in women from the incisors to the cardio-esophageal junction 3). The esophagus, which can be often divided into 3 parts; cervical esophagus, thoracic (mediastinal) Esophagus and abdominal Esophagus has 3 anatomical narrowing (3).

EFBs are different from other foreign bodies of the gastrointestinal system. Esophageal foreign bodies constitute 25-38% of foreign bodies in the gastrointestinal system(4). Esophageal peristalsis is not strong enough to prevent a foreign body from getting entrapped (5).

EFBs are often seen in the anatomical narrowing of the esophagus. The first narrowing is the part behind the cricoid cartilage at the level of the cricopharyngeus muscle. It is called as cricopharyngeal or pharyngoesophageal narrowing, which is the narrowest part of the esophagus. 70% of EFBs are seen at this part (6). In our study,65% (76 patients) of EFBs were detected in the first narrowing of the esophagus. The second narrowing is located where the aortic arch and the left main bronchus cross the esophagus, while the third narrowing is located at where the esophagus passes through the hiatus in the diaphragm. The incidence rates of foreign bodies in the second and third narrowing were reported to be close to each other (7). In our study, the incidence rates of EFBs in the 2nd and 3rd narrowing were found 15% (18 patients) and 20% (23 patients), respectively.

The EFB cases are often in the pediatric age group. This is because they bring foreign bodies into their mouths to recognize the objects and to play, their chewing skills are not completely developed and the objects are too large to be ingested (8). Some publications report that the incidence rate of EFBs is the highest especially in children between 6 months old and 6 years old (9), while some publications point out boys under 4 years old and between 1 and 3 years old (10). A study conducted by the American Association of Poison Control Centers reported that more than 75% of esophagus foreign body ingestion occurred in children under 5 years old (11). In our study, the patients aged 18 and under account for 75% (94 patients) of the cases, and the average age of this group was 3.6.

Contrary to the knowledge that EFB is less common in adults, Nandi et al. reported that in an esophagus foreign body series of 2,394 cases, 85.6% of the patients were adult and 14.4% of them was children (12). It was also reported that, in some series, 90% of foreign body cases were adult, and, in other series, 80% of the cases were under 15 years old (13).

Esophagus foreign bodies in adults are often associated with psychiatric illness, mental retardation or conditions that cause loss of consciousness and alcohol-related disorders (14). Some publications reported that EFBs are more common in men (2,15). In our study, 54% of the cases (64 patients) were men and 46% of the cases (53 patients) were women.

EFBs may vary greatly, and any type of foreign body is seen. The most commonly ingested foreign bodies include coin, pieces of food with and without bone, needle, battery, screw, toy pieces (picture 3) and button (16). Some publications reported that batteries account for 2% of EFBs (17). Even, it was reported that they are the second most commonly ingested EFBs following coins (18). When batteries are ingested, they create an alkaline medium, lead to mercury poisoning and apply pressure, causing damage to the esophagus. It may cause mediastinitis and tracheoesophageal fistula.

In our study, foreign objects such as coin, pieces of meat with bone, pieces of food without bone, safety pin, earring, toy pieces and screw were removed. In the literature, several studies reported the removed esophagus foreign body was coin (20,21). A study performed by Nandi et al. in Honk Kong reported that 84% of the removed foreign body were bone of which 60% were fishbone (12). This was attributed the fact that the cases, all being Chinese, eat fish with chopsticks.

The most common EFBs in adults were reported to be organic foreign objects (meat, bone, tooth, dental prosthesis, etc.) (21). In our study, this rate was found to be 82% in patients over 18 years old.
EFBs can appear asymptomatically but often along with symptoms of dysphagia, sticky sensation in the throat, hypersalivation, odynophagia, increased secretion and esophageal obstruction (5,22). Some publications reported that the most commonly reported symptoms were difficulty swallowing (38-42%), retrosternal pain (23.9%) and sticky sensation in the throat (20.5%) (3). In our study, the most common symptom was difficulty swallowing, which was seen in 59% of the patients (69 patients).

Early diagnosis and treatment of EFB is very important to prevent possible serious complications. For diagnosis, posterior-anterior and lateral radiographs including neck, chest and stomach regions should be taken following history taking and physical examination. Bilateral cervical radiographs are important since EFBs are mostly seen in the pharyngoesophageal junction in the 1st narrowing of the esophagus. Thus, radiopaque bodies can be easily detected. It was reported that the detection rate of foreign bodies with plain radiography was about 88% (1). However, the absence of a foreign body in direct radiography does not exclude the diagnosis. Any patients with suspected EFB should undergo esophagoscopy even without radiological findings (5).

Treatment of EFBs should not be delayed. A long length of stay of EFB in the esophagus, and the foreign body being a corrosive agent such as a battery or a sharp object may lead to life-threatening complications such as esophageal perforation, mediastinitis, sepsis, retropharyngeal abscess, trachea-esophageal fistulas. The currently preferred method for EFB is rigid esophagoscopy. The success rate of rigid esophagoscopy is 86% (23). There are publications reported that glucagon and calcium channel blockers are used to decrease lower esophageal sphincter pressure in case of foreign bodies in the lower esophagus(24). Foley catheter was used for EFBs for the first time in the 1966s (25). This method is used to push foreign bodies to the stomach as well as to remove them(26). In particular, surgical treatment intervention is required in 1-18% of cases that ingested a sharp-edged object (26).

We performed rigid esophagoscopy under general anesthesia for the cases of EFB. No surgical treatment was required for any of our patients.

EFBs may cause various complications. Various resources reported a complication rate of 12.6% in adults and 4.6% in children (27). The same resources reported that the most common complication in children is pulmonary complications, while the most common complication in adults is a retropharyngeal abscess (27).

Timely intervention is very important to prevent any complications. The complication rate was reported to be 1-5% in cases where the removal of EFBs have been delayed (5,28). When an EFB such as battery remains in the esophagus for a long time, the esophagus is damaged. It was shown that a battery getting entrapped in the esophagus caused mucosal damage within approximately one hour and affected all the layers of the esophagus after twelve hours (29). Likewise, EFBs damaging to the

layers of the esophagus may cause complications such as mediastinitis, retropharyngeal abscess, tracheoesophageal fistula (5,28). There is a risk of esophageal rupture of 0.1-1.9% in rigid esophagoscopy performed under the treatment (5). Migration of the EFB outside the lumen and pseudo esophageal diverticula (30) are rare complications. In our study, mucosal hemorrhage and minimal damage were detected in 3 cases, without any other complications. It should be also noted that there may be an underlying tumoral lesion especially in adult patients, which may cause obstruction.

CONCLUSION

EFBs are an important condition that may be seen especially in the pediatric age group. Delay in diagnosis and treatment can result in life-threatening outcomes. Rigid esophagoscopy is the most preferred method to remove EFBs.

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