

An Accidentally Ingested Mandibular Prosthesis was Exempt from Surgery

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Rezumat

Managementul nonoperator în ingestia accidentală de proteză mandibulară

Proteze demontabile ale mandibulei sunt realizate, de obicei, în practica dentară, de rutină, la pacienții vârstnici. Înghițirea accidentală a unui număr variabil de dinți a mai fost raportată în literatura de specialitate. Cu toate acestea, înghițirea în totalitate a unei proteze mobile de o asemenea mărime este o urgență foarte rară. În acest studiu, am raportat un caz de ingestie accidentală a unei proteze parțiale mobile de mandibulă și pasajul său prin tractul gastro-intestinal fără complicații și fără intervenție chirurgicală. Ne-am propus, de asemenea, cu acest caz, să creștem gradul de conștientizare a profesioniștilor din domeniul sănătății, asupra riscului potențial și managementului protezelor dentare înghițite.

Cuvinte cheie: corpi străini, tract gastro-intestinal, proteze ingerate

Abstract

Removable dentures are commonly used in routine dental practice at older ages. Accidental swallowing of various numbers of teeth has been reported in the literature before.

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However, total swallowing of removable mandibular prostheses in this size is a very rare emergency. In this study, we reported a case of accidental ingestion of a partially removable mandibular prosthesis and its final passing through the gastrointestinal (GI) tract without complication without need for surgical intervention. With this case we also aimed to increase the awareness of health professionals of the potential risk and management of swallowing dentures.

Key words: ingested dentures, gastrointestinal tract

Introduction

The most important point for the management of foreign bodies in the gastrointestinal tract (GI) is a requirement for different interventions depending on both the patient's characteristics and the foreign body's features. Although many accidentally swallowed dentures pass through the GI tract spontaneously without morbidity, occasionally they can lead to severe complications in the gastrointestinal tract, and may even cause mortality. Early detection and effective therapeutic managements are very important for swallowed dentures and start in the emergency department, as in the case of other foreign bodies in the gastrointestinal tract. It may sometimes be difficult to make the decision of selecting the patients who are candidates for non-operative procedures or decide for a surgical approach. There are many questions that need to be answered before taking a decision regarding any therapeutic approach: What size is it? Should we try to remove it or allow its passing through the gastrointestinal tract? How long should we observe the appliance? When should we decide to

surgically remove? It is possible to diagnose ingested foreign bodies visible on radiograms and follow-up as well.

In the GI tract the foreign body may be stuck in the esophagus, gastric pylorus or at the ileocecal valve (1). Among them the esophagus is the most common location for foreign body obstructions and accounts for 75% of all impactions (2-7). Ingested foreign objects will stop most commonly in the anatomical or physiological narrowing of the normal esophagus, including the cricopharyngeus muscle of the upper esophageal sphincter, the level of the aortic arch, the level of the left mainstream bronchus, and the lower esophageal sphincter (1,2). Because the cricopharyngeal sphincter is the narrowest point in the GI tract, which is approximately 14 mm in diameter (2) the cervical esophagus is the common site of foreign body impaction. Once a foreign body impacted in the pharynx or esophagus it is unlikely to pass spontaneously, and needs immediate removal.

According to the management of ingested foreign bodies which has been reviewed before by Spitz and Nandi & Ong (9,10) esophageal foreign bodies, except those in the lower third, should be extracted as soon as possible because once impacted, spontaneous passage is rare; this is because, as time passes, edema grips the object even more firmly; and because perforation of the esophagus has a high mortality. Rounded or blunt objects in the lower third of the esophagus should be observed for 12 hours because some of them will pass into the stomach. Although this passage through the stomach may reduce anxiety about surgery and/or urgent manipulation which is performed for sticking foreign bodies in the esophagus there are still controversies about the management of foreign bodies which have reached the stomach without complication. In the present case we met our patient after he had already ingested his partial denture without problem and demonstrated his denture on plain X-ray film. In this report we discussed the option of nonsurgical management of ingested dentures, with a review of the medical literature.

To evaluate the urgency for surgical indication in cases such as GI tract perforation and to localize the foreign body, plain neck, chest, and abdominal radiographs are essential initially. If there is any suspicion of GI tract injury, endoscopic examinations or other radiological examinations with contrast media should be done. Computed tomography may reveal the diagnosis if the denture is not visible on plain radiographs, but Magnetic Resonance examination is contraindicated if the denture has a metallic part. After taking the decision that there was no need for an emergency surgical intervention, the most important issue for follow up of the swallowed dentures is their visibility on plain X-ray.

Case Report

We report the case of a 54 year old man who had accidentally swallowed his removable mandibular prosthesis while he was having dinner. He immediately came to the emergency department, was completely asymptomatic and his clinical findings and laboratory examinations were completely normal,

while a plain supine abdominal x-ray confirmed the presence of a foreign body supporting denture opacity in the left upper quadrant. We immediately performed a radiologic esophageal examination with water soluble contrast agent after this event and did not find any esophageal leakage. He was admitted for observation and 24 hours following admission he did not have any complaints. So, the prosthesis was allowed to pass through the gastrointestinal tract under close monitoring. During the first three days of follow-up, although radiologic examination was normal, as a precaution of possible overlooked esophageal injury, oral intake was stopped and intravenous fluid was given to the patient. A series of abdominal radiographies over several days showed changing position of the prosthesis and demonstrated its proper proceeding through the GI tract (Fig. 1). The prosthesis subsequently passed through the pylorus and caecum and reached the rectum and eventually discharged from the rectum without complications on the 5th day after the event (Fig. 2). Rectal examination of the patient was normal. His clinical findings and laboratory examinations were completely normal again after 10 days.

Discussion

Ingested foreign bodies represent a common clinical problem. The majority of alimentary foreign bodies arise from accidental ingestions. Most of them (80% to 90%) pass through the gastrointestinal tract uneventfully, even dangerous objects such as blades will pass safely through the gastrointestinal tract, but others may cause obstruction or perforation depending on their morphology and size (1,2) The incidence of foreign bodies requiring operative removal varies from 1% to 14% (2,3). However, while passing through the GI tract some serious complications including intestinal perforation, obstruction, and hemorrhage may occur (5-8). So, close observation for signs of perforation, hemorrhage, and/or obstruction is mandatory.

The nature of the foreign body is also important in its detection and management. Imaging is the most useful in



Figure 1. Radiological esophageal examination with water soluble contrast agent



Figure 2. The picture of the swallowed prostheses after discharge

diagnosis and management of such cases. It is important for the object to be visible on radiograms, for both diagnosis and follow-up. Metal or bony material are easily seen on radiography but the detection of plastic, wood or glass is almost always a dilemma (5,11). Thin, sharp foreign bodies (e.g., fish bones, other meat bones, toothpicks) carry a higher risk of developing significant complications such as bleeding, perforation and even death (5-8,12). The treatment recommendation for sharp and toxic objects is for them to be removed while they are still in the stomach. Concerning metals, after ingestion, the acid of the stomach may react chemically with the metal and result in mucosal inflammation, ulceration, and perforation or lead to corrosive toxicity (e.g., battery). Age is also an important factor that affects the treatment choice. It particularly recommends removal of such objects in children under the age of two years, due to a high risk of duodenal perforation.

The most important point is choosing the best approach, meaning the less invasive and the safest for the patient. In many cases endoscopic removal is the initial treatment of choice (2-4,6) but when surgical approaches are necessary, laparotomy, laparoscopy, toracotomy or toracoscopy are reasonable approaches in selected cases (2,12-15). During retrieval of ingested foreign bodies via esophagoscopy laceration of the esophagus and subsequent mediastinitis, pneumothorax, and pneumopericardium may occur. Although the endoscopic removal of various objects from the stomach is performed successfully, the potential hazards of this technique have to receive much more attention (4,5,8). Some devices have been described for safe endoscopic extraction such as clasps, and sheaths (14).

Operative removal is indicated if the object fails to progress for 10-12 days (2,13). Foreign bodies in the intestine may be treated conservatively unless complications develop or spontaneous passage does not occur (15-17). A foreign body impaction can be suspected, if it showed no progression on radiography in longer than 24 hours. Accidental swallowing of various sizes and numbers of denture has been reported in the literature before (18-20). However, totally swallowing a removable mandibular prosthesis in this size is a very rare

emergency. Out of a considerably large scale of treatment options, non-operative follow-up was a reasonable decision for this case. The fact that the dental prosthesis was visible on X-ray supported our decision to check the proceeding in GI tract properly, and the belief that eventually he could discharge the dental prosthesis spontaneously without any intervention.

In conclusion, it is to be highlighted that one should not decide any surgical procedures urgently in the emergency room, because in some cases "waiting and close monitoring" may solve the problem without complication, even for a large foreign body like the one in this case. The most important thing is selecting the patients who are candidates for non-operative procedures, either endoscopic removal or observation with close monitoring as mentioned above. All clinicians, dentists and nursing staff must be aware of the problems encountered in the case of such patients who wear removable dental prostheses. Proper adaptation of fixed or removable partial prostheses should be carefully examined by the dentist regularly.

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