



Case Report

Endoscopic Retrieval of a Jujube Pit Impacted In the Small Intestine: A Case Report

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Abstract

Impaction of foreign bodies is a common emergency in the field of gastroenterology. The jujube pits impaction can usually be seen in real-clinic. The most common impaction location of jujube pits was the esophagus, prepyloric region, and duodenum. Here we reported a 60-year-old female complaint of lower abdominal pain with jujube pit impaction. By double-balloon enteroscopy (DBE), the jujube pit was found in the small intestine, located at the middle jejunum. The jujube pit, sized 1.0*3.0 cm, was retrieved by a grasping forceps, and a retrieving net.

Keywords: Foreign body; Jujube pit; Enteroscopy; Case report

Introduction

Ingestion of true foreign bodies (i.e., fish bone) is commonly seen in clinical practice. [1] Some ingested foreign bodies were able to pass spontaneously. However, a small proportion may get stuck in the gastrointestinal (GI) tract and require interventional therapy. Impacted foreign bodies can ultimately lead to complications involving perforation, obstruction, fistula formation, etc., which may be lethal. [2] It is reported that approximately 10%-20% of foreign-body-impacted cases require endoscopic intervention, and about 1% require surgical procedures. [3] Once the impaction of foreign bodies is suspected, further examinations and interventions are essential as soon as possible.

Impaction of sharp-pointed objects like jujube pits, needles, bone, etc., were considered high-risk, which may be life-threatening, and it was recommended to receive interventional procedures immediately. The timing of intervention is 6 hours for

foreign bodies impacted in the esophagus and 24 hours for those in the stomach or intestine. [4] The most commonly reported location for pits impaction is the esophagus, followed by the stomach and duodenum, pits impacted in the small intestine were rarely reported. [5] In addition, removing the jujube pits from the GI tract is still challenging as the pits present two sharp-pointed edges. Here, we reported a 60-year-old female with a specific history of eating jujubes and lower abdominal pain. We found this jujube pit located at the middle jejunum and retrieved it using a grasping forceps and a retrieving net.

Case Presentation

A 60-year-old female was admitted to the gastroenterology department for severe lower abdominal pain. She recalled eating porridge with jujubes two days ago. About 2 hours later, acute lower abdominal pain appeared and gradually turned to colic and persisted. The pain was slightly relieved after defecation. There was no melena, nausea, vomiting, acid reflux, abdominal

distension, and no symptoms of chest tightness, palpitation, chills, and fever. The patient was transferred to our department one day after receiving infusion treatment in another clinic center without significant improvement.

Her temperature was 36.2°C, her blood pressure 145/87mmHg, and her pulse was 78 beats per minute. On the initial physical examination, no obvious positive signs were found. The patient underwent computed tomography (CT), which revealed slight thickening of the small intestinal wall in the pelvis with surrounding inflammatory exudation. A bullet-like high-density opacification in the intestinal canal was observed. (Figure 1) Combined with the patient's apparent history of foreign body swallowing, it can be preliminarily judged that the foreign body was embedded in the digestive tract.



Figure 1: A bullet-like high-density opacification in the intestinal canal was observed by CT.

We performed tracheal intubation and intravenous anesthesia and applied double-balloon enteroscopy (DBE, EN-530T, Fujifilm, and Tokyo, Japan) for examination. We found a jujube pit located at the middle jejunum with the sharp point sticking into the intestine wall. (Figure 2) Ulcers of varying sizes and irregular shapes were observed around the jujube pit. A grasping forceps was used to pull the pit out of the intestine wall. Then we applied a retrieval net and safely removed the pit from the intestine. (Figure 3) The patient felt well after awakening from anesthesia, and two days after the DBE procedure, the patient could eat liquid food without other discomforts.



Figure 2: Ulcers of varying sizes and irregular shapes were observed around the jujube pit.



Figure 3: The retrieval net safely removed the pit from the intestine.

Discussion

Ingestion of jujube pits is more common in clinical practice, and some of them can pass through the GI tract without any complications, but a small proportion can cause severe complications, which may be fatal. [6] The esophagus is the most common site of jujube pit impaction, especially at the physiological strictures. If esophageal perforation occurs at the second physiological stricture of the esophagus, it may cause inflammatory stimulation and even aorta puncture, thus causing life-threatening. [7] Song reported 191 patients with ingestion of jujube pits; 88.5% of patients showed impaction in the esophagus, 10.5% in the prepyloric region, and 1% in the duodenal bulb. A total of 185 patients had pits removed with alligator jaw forceps [5].

With the peristalsis of the GI tract, a small proportion of the jujube pits was seen embedded in the lower GI tract, which is narrow and thin, and may easily get damaged. Suppose the foreign body is stimulated in the small intestine for a long time. In that case, it will cause complications such as perforation, incomplete obstruction, and peritonitis, affecting the life and health of patients. [8] If the endoscopic procedure fails, the foreign body can only be removed by surgical operations, and even the affected intestine segment needs to be removed. Ma reported a case of jujube pit caused sigmoid perforation; the pit was successfully removed by colonoscopy. [9] Taguchi T reported a case with fish bone perforation, and unfortunately, the patient got a segment of the small intestine resected [10].

Here we reported a case with jujube pit impaction within 48 hours. The impaction was confirmed through the specific history of eating jujubes and the examination result of the CT scan. We performed DBE immediately and pulled the pit out of the intestinal wall using grasping forceps. Then we applied a retrieval net to encase the pit and prevent secondary injury. In the process of retrieval, we inflated the balloon at the front end of the endoscope, so as to separate the pit from the intestinal wall as far as possible to reduce damage. To the best of our knowledge, this is the first English case report of the successful endoscopic removal of a jujube pit in the small intestine using DBE.

Guo stated the method of the endoscopic basket was more suitable for cases of jujube pit ingestion and had a higher extraction success than the foreign body forceps. [11] We also found it difficult and inappropriate to extract the pit using forceps because of the pit's smooth surface and safety considerations. The retrieval net we applied was also sufficient and reliable.

Author contributions: **Zehua Dong:** contributed to the conception of the work and manuscript preparation. **Xiaoquan Zeng:** performed the data curation and wrote the original draft. **Anning Yin:** contributed to the conception of the study and resources and supervision. **Honggang Yu:** contributed to the conception of the study, funding acquisition, resources and supervision.

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