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A Case of a Foreign Body "Fish Bone" Penetrated the Appendix

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1. Abstract

Fish bone induce the perforated appendicitis is a very rare condition, that requires diagnosis and surgery as soon as possible. We report the unusual case of a 42-year-old male patient, had suddenly felt an abdominal pain at the right iliac fossa gradually increased about 8 hours before hospitalization. The physical examination showed local tenderness in the right lower quadrant. In the ultrasound, it was found out that the peripheral fat stranding at right iliac fossa and appendix was difficult to detect the appendix. The CT scan showed a dilate appendix with peripheral fat stranding, with a foreign body suspected of being a toothpick or fish bone perforate the appendix. The patient underwent laparoscopic surgery and confirmed to be a foreign body "fish bone" penetrated the appendix.

2. Introduction

The appendix is the smallest and most functionally irrelevant segment of the gastrointestinal (GI) tract. The appendix arises from the posteromedial aspect of the cecum at the junction of the three taeniae coli. The diseases of the appendix are diverse and abundant, almost similar to those of the gastrointestinal tract. However, due to anatomical characteristics, the diseases of the appendix, especially acute appendicitis, is the case that requires an emergency surgery, in which the foreign body in the appendix is one of the most common cases. Rarely also requires urgent diagnosis and treatment.

The foreign body in gastrointestinal is mostly found in the stomach, small intestine, and large intestine, while the rate of the foreign body in the appendix is very low, in which caused appendicitis is lower, about 0.0005% [1], [2]. Usually about 80 to 90% of foreign bodies pass out of the gastrointestinal tract on their own, 10 to 20% require nonsurgical intervention, and less than 1% require surgery [3], some record said that about 16% of cases require surgery to remove the appendix [4], conservative treatment is reasonable for most cases of gastrointestinal foreign body. However, if the foreign bodies are into the appendix, especially foreign bodies with sharp edges, they rarely get out because the appendix has little peristalsis, as a result, they will cause appendicitis and the most serious complication is the foreign body perforate of the appendix. Recently, a few cases of such complications have been mentioned in the literature [5, 6].

We would like to report a case of a foreign body "fish bone" penetrated the appendix at Quang Tri Provincial General Hospital, which was diagnosed preoperatively based on clinical examination, laboratory, and imaging technics, then confirmed by surgical results.

3. Case Report

A 42-year-old male patient, had suddenly felt an abdominal pain at the right iliac fossa gradually increased about 8 hours before hospitalization. The physical examination showed local tenderness in the right lower quadrant. With suspected acute appendicitis should be referred abdominal ultrasonography. During an abdominal ultrasound, the patient's right iliac fossa was very painful, making it difficult to examine the appendix. Subsequent ultrasound only showed a peripheral fat stranding at right iliac fossa, the appendix was difficult to detect. Thus, a contrast-enhanced CT scan was performed, and it revealed evidence of acute appendicitis. On CT

image, dilated appendix with diameter about 9.2-13.5mm, mild edematous wall, fluid-filled lumen. A foreign body inside the lumen with length 38mm, suspected of being a toothpick or fish bone perforated appendix, surrounding with peripheral fat stranding at right iliac fossa (Figure 1 and 2).

Blood test results: white blood cell count (WBC): 14.21x10G/l; neutrophils (NEU): 11.55x10G/l (81.3%). Combined with the results of clinical, CT imaging, and laboratory examination, the patient was confirming acute appendicitis due to a foreign object perforating the appendix. The patient underwent a laparoscopy procedure, laparoscopic image showed that foreign body is a fish bone induce perforated appendicitis. The appendix inflammated, and a lot of turbid fluid around (Figure 3), and image of a foreign body "fish bone" of 5cm in length (Figure 4).

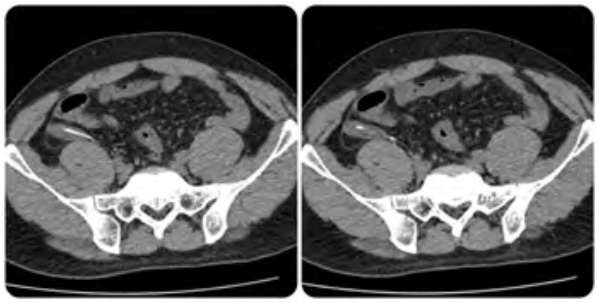

Figure 1: Axial image of the appendix shows the appendix is large, with a foreign body perforating the appendix.

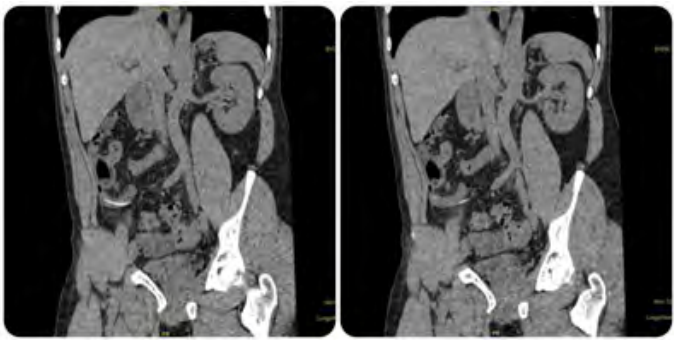

Figure 2: Coronal image through the appendix with a foreign body long penetrating the appendix.

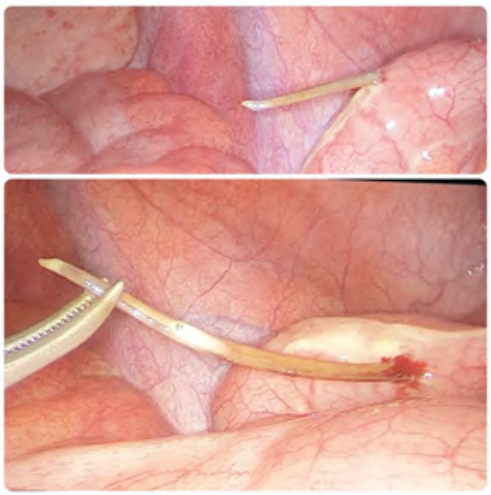

Figure 3: Laparoscopic image of a foreign body "fish bone" induce perforated appendicitis.

Figure 4: Image of a foreign body "fish bone" of 5 cm in length.

4. Discussion

Foreign bodies caused appendicitis are very rare, about 0.0005% [1]. Almost no symptoms and get out the digestive tract, a few cases need nonsurgical intervention and require surgery [3]. Therefore, conservative treatment is reasonable for most patients with asymptomatic gastrointestinal foreign bodies, however, if the foreign body enters the appendix, especially a foreign body with sharp edges, foreign bodies in the appendix rarely get out because it has weak peristalsis, causing appendicitis and the most serious complication is the foreign body perforating the appendix.

Symptomatically, the foreign bodies in the gastrointestinal tract are usually asymptomatic unless complications of perforation or obstruction occur. The complication rate of ingested foreign bodies is estimated at less than 1 % [7]. Gastric perforation or intestinal perforation due to a foreign body will present with peritonitis manifestations such as abdominal pain, abdominal wall reaction, and peritoneal tenderness. Intestinal obstruction due to a foreign body will cause symptoms of intestinal obstruction. However, the

appendix has a different point because the anatomy has a lot of lymph, weak peristalsis. So, the foreign body that enters here cannot get out and easily causes acute appendicitis with symptoms such as abdominal pain, allergic reactions abdominal wall at the right iliac fossa. Complications of intestinal obstruction are not encountered in the presence of foreign bodies entering the appendix, but often complications of perforation of the appendix cause focal or general peritonitis [4]. A medical report found that among the sharp foreign bodies in the appendix had 93% of the patients became symptomatic, and 88% of the resected specimens showed inflammation accompanied by perforation in 70% of the cases [8].

Diagnosis of appendicitis foreign body is based on the symptoms of acute appendicitis on clinical examination and most important in determining the cause of foreign body are supportive imaging techniques such as ultrasound, x-ray, tomography computers. Laboratory assessments show classically elevated inflammatory markers. Ultrasonography detects appendicitis easily with high sensitivity and specificity [9], whill foreign bodies in the appendix are detected in most cases, but sometimes foreign bodies are difficult to detect if it small as well as location of appendix make it difficult to ultrasound. Some patients, like the one above, because the foreign body penetrated the appendix, causing the patient a great deal of pain and stiffness in the abdomen, making it difficult to perform the ultrasound, so another technique was needed to support the diagnosis.

An abdominal X-ray can detect where a contrast foreign body is located in the abdomen. However, with non-contrast foreign bodies, X-ray cannot detect them. In addition, X-ray only knows the location of the contrast material, but not where it is, in the small intestine, large intestine or appendix, as a few cases reported has described [10], [11]. The CT scan is most useful for diagnosing diseases of the appendix [12], especially foreign bodies in appendix with high sensitivity and specificity up to more than 90% depending on the study. It found a large appendix, peripheral fat stranding at right iliac fossa on computed tomography images, especially in obese and fatty patients. On the contrary, these images will not be clear if perform in children and thin patients.

Treatment of the foreign bodies in gastrointestinal depends on the location of the foreign body, the nature of the foreign body, and whether the patient with the gastrointestinal foreign body is symptomatic or not. Surgical treatment is the gold standard in the case of fishbone-induced appendicitis. In our case, the patient underwent laparoscopic appendectomy, and removal of the fish bone alongside the omental mass surrounding. The postoperative course was uneventful.

5. Conclusion

A foreign body in the appendix is a rare condition. We report one case of fishbone-induced appendicitis. The fish bone is one of the most ingested foreign bodies in our country. However, this case it drops in the appendix and induce appendicitis with appendicitis perforation. CT scan still the means of choice in finding ingested foreign objects. Surgical treatment is the gold standard in case of fishbone-induced appendicitis.

6. Limitations

Although the patient was stable after 5 days and discharged from the hospital, the patient did not have a follow-up examination, so it is currently not possible to further monitor the patient's condition, which is a limitation of this article.

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