

## A CASE REPORT OF AN ATYPICAL BUT IMPORTANT POTENTIAL CAUSE FOR PAIN IN THE RIGHT ILIAC FOSSA: TOOTHPICK PERFORATION.

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Page | 1 **ABSTRACT**

### Introduction

One uncommon cause of right iliac fossa pain is toothpick ingestion leading to intestinal perforation. It is a difficult diagnosis due to its nonspecific clinical presentation and investigation findings. In spite of this, individuals who have a high risk of morbidity and death may have severe consequences from toothpick intake, hence it is crucial to diagnose the condition accurately.

### Case report

In the study, a young man with right iliac fossa discomfort—first thought to be appendicitis—had his ileocaecal junction perforated by a toothpick, which was discovered to be the source of the pain during surgery.

### Conclusion

When a patient presents with an acute abdomen, clinicians need to be aware that a foreign body ingestion may have been the cause. It is also necessary to educate the general people about the dangers of using toothpicks.

**Keywords:** Perforation, Toothpick, Right iliac fossa

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### INTRODUCTION

Patients presenting to the emergency department often self-refer to general surgeons seeking medical intervention for the management of pain localized in the right iliac fossa. The differential diagnosis for the aforementioned presentation commonly encompasses non-surgical pathologies, such as inflammatory bowel disease, renal colic, pelvic inflammatory disease, and mesenteric adenitis. Additionally, surgical conditions, including appendicitis, ovarian torsion, and ectopic pregnancy, should also be considered. The present report delineates an exceptional occurrence of pain localized in the right iliac fossa region, precipitated by an intestinal perforation attributed to the use of a toothpick. The present pre-operative diagnosis poses a formidable challenge, characterized by a substantial risk of morbidity and mortality. The aim of this report is to highlight the importance of considering unusual and less common causes of right iliac fossa pain in clinical practice.

### CASE PRESENTATION

#### Patient Demographics

A 20-year-old Black male with no significant medical or surgical history.

#### Medical History

The patient has been generally healthy with no chronic illnesses or prior hospitalizations. He is a nonsmoker and occasionally consumes alcohol socially.

#### Prognosis

Following the surgery, the prognosis is good, but there's a minor risk of complications related to the bowel resection and adhesions.

#### Previous Treatments

No previous treatments or hospitalizations were reported.

#### Past Diagnostic Test Results

Initial blood tests indicated a high white blood cell count, particularly neutrophils, suggesting an infection or inflammation. Urine tests were normal.

#### Medications

The patient was started on metronidazole and ceftriaxone for suspected acute appendicitis before the actual diagnosis.

#### Family and Psychosocial History

##### Family History

There's a history of gastrointestinal issues in the family, with his mother having had gallstones and an uncle with a history

of peptic ulcer disease. No known genetic disorders are reported.

### **Psychosocial History**

The patient is a college student studying engineering, living away from home. He faces the usual stress associated with academic pressures and maintains a close-knit group of friends.

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### **Uniqueness of the Condition, Symptoms, Frequency, and Severity**

#### **Uniqueness**

Ingestion of a foreign object like a toothpick is rare and often goes unnoticed until severe complications occur. The toothpick's perforation of the ileum-cecum junction is particularly unusual.

#### **Symptoms**

The patient presented with abdominal pain starting in the mid-abdomen and spreading to the lower right, without other gastrointestinal or systemic symptoms.

#### **Frequency and Severity**

The condition is infrequent, with the severity in this case being significant due to the perforation and subsequent localized peritonitis.

### **Relevant Past Interventions and Outcomes Past Interventions**

There were no past interventions. This incident was the first medical issue of such severity that the patient experienced.

#### **Outcomes**

The surgical removal of the affected ileum and cecum was successful, with the patient facing some postoperative bowel movement difficulties but overall recovering well.

### **Setting of the Case Report**

The incident occurred in an urban hospital with a well-equipped emergency department and surgical facilities. The patient was initially assessed in the ER and then moved to the surgical ward for laparoscopy and subsequent treatment. The patient did not feel well and did not have diarrhea, vomiting, nausea, fever, or unpleasant urination. The physician noticed some pain, particularly in one particular location, in his right lower abdomen during the examination. His appendix was first missed by an ultrasound of his pelvis, but after analyzing the pictures, they noticed a linear object in his lower belly that seemed to stretch into the surrounding fat.

The patient had a laparoscopy on the second day of his hospital stay. The doctors found that during the treatment, a wooden toothpick had perforated his ileum-cecum junction, resulting in adhesions (fibrous bands) to form around his

small intestine and cecum and localized peritonitis (inflammation of the abdominal lining). Thankfully, his appendix appeared normal and there was no pus or intestinal contents in his abdominal cavity. They had to operate to remove a portion of the ileum and cecum in order to treat this problem, and then they had to rejoin the healthy ends. The patient experienced some difficulties with his bowel movements following the procedure, but on the fifth day, he was allowed to return home.

### **DISCUSSION**

#### **Diagnostic Tests**

##### **Initial Assessment**

Comprehensive blood panel showing elevated white blood cells, especially neutrophils, indicating potential infection or inflammation. Urine analysis was normal, ruling out urinary tract infections.

##### **Imaging**

An abdominal ultrasound was first conducted, which initially missed the foreign object. A subsequent CT scan of the abdomen and pelvis was performed, which revealed a linear object consistent with a toothpick lodged in the lower abdomen, leading to a definitive diagnosis.

##### **Endoscopy**

Considered but not performed initially due to the lack of specific gastrointestinal symptoms and the findings from imaging.

#### **Treatment or Intervention Procedures**

##### **Initial Management**

The patient was started on intravenous antibiotics—metronidazole (500 mg every 8 hours) and ceftriaxone (1 g every 24 hours)—to cover potential bacterial infections while awaiting further diagnostic clarity.

##### **Surgical Intervention**

Once the foreign object was identified, the patient underwent laparoscopic surgery. This involved making small incisions in the abdomen, inserting a camera and instruments to locate and remove the toothpick, and repairing the perforated ileum-cecum junction. A portion of the ileum and cecum was removed, and an anastomosis (rejoining) of the healthy ends was performed.

##### **Postoperative Care**

The patient received pain management with IV acetaminophen and, as needed, morphine for breakthrough pain. Antibiotics were continued postoperatively until signs of infection were resolved.

#### **Clinical Condition Post-Intervention**

## Symptoms

Post-surgery, the patient initially experienced some discomfort and difficulty with bowel movements, common after bowel surgery. However, these symptoms gradually improved over a few days.

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## Recovery

By the fifth day post-operation, the patient's condition improved significantly, allowing for discharge. Diet was gradually advanced from liquids to solids as bowel function returned to normal.

## Imaging

Postoperative imaging, such as an abdominal X-ray or CT scan, confirmed the successful removal of the foreign object and no remaining complications.

## Adverse Events or Unanticipated Events Immediate Postoperative Period

The patient experienced expected postoperative pain and temporary ileus (slowed bowel movements), managed with medications.

## Potential Long-term Risks

There's a minor risk of adhesion formation post-surgery, which can lead to bowel obstruction in the future. Regular follow-ups are recommended to monitor for such complications.

## Infection

Signs of infection such as fever, increased white blood cell count, or localized pain were closely monitored. No significant infection developed postoperatively.

## Key lessons

1. **Maintain Suspicion:** Be alert for foreign body ingestion when patients present with unexplained abdominal symptoms, especially in high-risk groups.
2. **Comprehensive Evaluation and Imaging:** Thorough history-taking and physical examination are critical. Employ advanced imaging like CT scans when initial tests are inconclusive but suspicion remains.
3. **Understand Varied Presentations:** Recognize that foreign bodies like toothpicks can cause atypical symptoms and serious complications such as perforation or infection.
4. **Prompt and Appropriate Intervention:** Quickly intervene surgically to remove the foreign object and address complications. Monitor closely post-operation for any signs of infection or other issues.
5. **Public and Patient Education:** Increase awareness about the dangers of foreign body ingestion and the importance of seeking prompt medical attention.

6. **Long-term Monitoring:** Ensure long-term follow-up for patients with a history of foreign body ingestion to detect and manage late-onset complications.

This case underscores the importance of vigilance, thorough assessment, and prompt intervention in managing uncommon but potentially severe presentations of foreign body ingestion.

Toothpick ingestion is an infrequent yet consequential issue that may necessitate individuals seeking urgent medical attention. In the United States, the annual incidence rate of this condition is approximately 3.6 per 100,000 individuals [1]. Several factors contribute to an increased propensity for ingesting foreign objects, such as toothpicks, among individuals. These factors encompass male gender, extreme age (either very young or advanced age), presence of dementia or mental health disorders, utilization of dentures, and consumption of alcohol [1-3].

The majority of instances involve the uneventful passage of foreign objects through the human body, typically devoid of any consequential complications [4,5]. Nevertheless, toothpicks possess the potential to induce grave complications, such as perforation of the gastrointestinal tract, resulting in obstructions, hemorrhaging, formation of aberrant organ connections, and even the onset of infections [2]. The aforementioned complications may manifest in atypical manners, exerting their influence upon vital organs such as the liver, pancreas, kidneys, and other anatomical structures [6]. Regrettably, the act of ingesting toothpicks has been associated with potential fatality, as evidenced by estimated mortality rates ranging from 9.6% to 18% [2].

The diagnostic process for toothpick ingestion poses challenges due to the absence of distinct symptoms and potential lack of recollection regarding the act of swallowing a toothpick [5]. Consequently, it is frequently misdiagnosed as alternative medical ailments. Toothpicks have the potential to become lodged in diverse anatomical locations within the human body, thereby exacerbating the complexity associated with their diagnostic identification. Diagnostic imaging modalities such as ultrasounds and computed tomography (CT) scans may provide valuable assistance in identifying foreign bodies, albeit their efficacy in detecting toothpick-related cases is not infallible [2].

The management of toothpick ingestion is contingent upon the anatomical location of the toothpick and the presence or absence of associated complications. Surgical intervention is typically indicated for the purpose of extracting the toothpick and rectifying any resultant damage. In certain instances, endoscopy, a diagnostic procedure involving the utilization of a camera-equipped tube, may be employed for the purpose of extracting the toothpick [7]. Laparoscopy, a minimally invasive surgical procedure, is increasingly being employed in the management of such cases. In certain instances, an alternative method or the administration of local anesthesia may be employed to effectuate the extraction of the toothpick [8].

## CONCLUSION

Henceforth, notwithstanding its infrequency, the inclusion of foreign body ingestion in the differential diagnosis of the acute abdomen is imperative, given that an erroneous diagnosis may yield substantial ramifications for the patient. While not conclusive, imaging examinations can aid in establishing the preoperative diagnosis and enhance the process of surgical strategizing. It is imperative to enhance the overall public's awareness regarding the perils associated with the utilization of toothpicks, as well as the various risk factors associated with the inadvertent ingestion of toothpicks.

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## Ethical considerations

The study protocol was approved by the Ethics Committee and written informed consent was received from the patient participating.

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## Conflict of interest

There are no conflicts of interest to declare by any of the authors of this study.

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