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Endoscopic Removal of Multiple Ballpoint Pens from the Stomach in a Patient with PICA

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Abstract

The deliberate ingestion of foreign objects by adults is rare and necessitates immediate medical attention for diagnosis and treatment. We present a unique case of a 31-year-old male with mental retardation and a history of drug abuse who sought medical attention due to abdominal pain. Radiological investigations (X-rays) established the presence of multiple pointed metallic objects within his stomach, later identified as ballpoint pens through an endoscopic view. The patient underwent two successful endoscopic interventions, resulting in the removal of 23 ballpoint pens. No adverse effects were recorded during the post-procedure follow-up period. The patient's underlying condition, PICA, was addressed through a combination of psychiatric treatment with medication psychiatric therapies and multidisciplinary care.

Keywords: Endoscopy; Ballpoint pens; Gastrointestinal foreign body; Snare; Mental Retardation

Abbreviations: GI: Gastrointestinal; IV: Intravenous; PICA: Persistent Ingestion of Non-Nutritive Substances (commonly referred to as PICA); OG: Oesophagogastric (junction); X-ray: X-radiation (for radiological investigations)

Introduction

Intentionally consuming foreign bodies is a prevalent clinical issue that affects children, individuals with mental disabilities, psychiatric patients, and those who are prone to hysteria [1,2]. However, the simultaneous ingestion of multiple ballpoint pens is a rare clinical presentation. In this report, we present a challenging case of a young male who ingested a total of 23 ballpoint pens, which required immediate medical attention and careful evaluation to ensure the safety and well-being of the patient.

Case Presentation

A male in his early 30s, with a history of intellectual disability and substance abuse, presented to our emergency department with recurrent upper abdominal pain. Despite receiving local treatment for his symptoms on multiple occasions, his condition remained unresolved. The patient had no significant family history, and his social background indicated a pattern of drug abuse.

On clinical examination, he was found to be hemodynamically stable; however, the persistence of his abdominal pain necessitated further investigations. Radiological imaging, specifically X-rays, revealed several pointed foreign objects within his stomach (Figure 1). These objects were later identified as ballpoint pens during an endoscopic evaluation (Figure 2).

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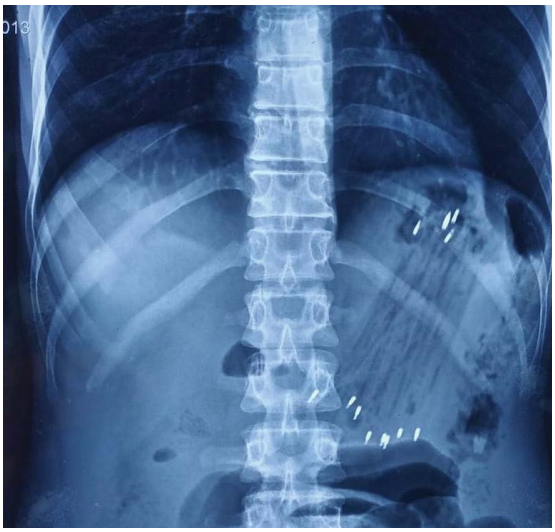

Figure 1: A plain abdominal x-ray revealed multiple foreign bodies without signs of obstruction or perforation.

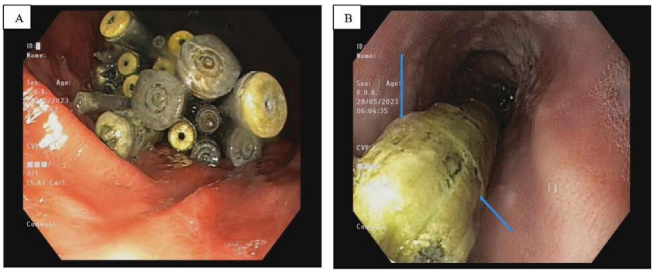

Figure 2: (A) Endoscopic view of multiple ballpoint pens that were stuck in the stomach (B) Endoscopic removal of ballpoints pens.

Given the nature of the findings, the patient was referred to our tertiary endoscopic surgery unit for further management and intervention. Following a multidisciplinary discussion, it was decided to perform an emergency upper ga to safely remove the foreign objects and prevent potential complications such as perforation or obstruction.

Clinical Findings

After conducting a thorough medical evaluation, the patient was diagnosed with a mental disability and PICA, a disorder characterized by the ingestion of non-nutritive and often inappropriate objects, as well as a history of drug abuse. It was decided to perform an emergency upper GI flexible endoscopy, with the option of local anesthesia using 10% lidocaine spray or general anesthesia with endotracheal intubation if necessary.

Endoscopic Procedure

The procedure was performed in two steps:

On May 25, 2023, the patient underwent his first upper GI flexible endoscopy with local anaesthesia using 10% lidocaine spray, with the option of general anaesthesia and endotracheal intubation. During this initial procedure, we discovered multiple ballpoint pens lodged in the fundus and body of the patient's stomach (Figure 2A), with a narrow passage along the lesser curvature. Endoscopic snares were employed to dislodge and retrieve 15 ballpoint pens one by one, without requiring an overtube (Figure 2B). The procedure took nearly 3 hours to complete, after which the patient was closely monitored in the general surgical ward, where he consistently exhibited stability, without any pain or severe events.

Figure 3: Several ballpoint pens were found with open caps, some dusty, and with ink remaining (a total of 23).

Following the initial procedure, the patient was still found to be hemodynamically stable. He was started on intravenous fluids, antibiotics, and proton pump inhibitors, and continued to be closely monitored in the general surgical ward. Three days after the initial procedure, a second endoscopic intervention was conducted to remove the remaining eight ballpoint pens. This second procedure lasted almost 2 hours and successfully removed the remaining pens, bringing the total count of extracted pens to 23. These pens varied in color, with some having open caps, others in a refill state, and some appearing dusty (Figure 3). After completion of the procedure, a plain X-ray of the abdomen and an endoscopic view of the stomach confirmed the total clearance of all ballpoint pens from the stomach (Figure 4).

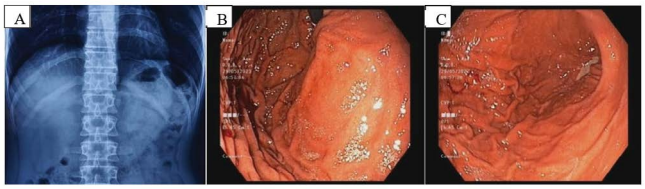

Figure 4: Plain radiograph (X-ray) and endoscopic view after completion of the procedure (no remaining ballpoint pen).

Outcomes and Follow-up

The patient was found to be hemodynamically stable even after the two-stage endoscopic procedure. He was started on intravenous (IV) fluids, antibiotics, proton pump inhibitors, and a liquid diet. Following a psychiatric evaluation that confirmed the diagnosis of PICA, treatment was initiated with medication and psychotherapy from a psychiatrist. The patient was discharged three days after the second endoscopic

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procedure. During the subsequent six-month follow-up, no adverse effects resulting from the endoscopic procedure were observed. He was closely monitored by both the psychiatry and endoscopic surgery teams. The patient's delegate reported no recurrence of pain, and his psychiatric condition was improving.

Discussion

Foreign body ingestion in the gastrointestinal tract is a common issue, especially among children, individuals with intellectual disabilities, and psychiatric patients [3-6]. Most foreign bodies pass without intervention [7], but 10–20% require endoscopic removal, and less than 1% necessitate surgery due to complications like perforation or strictures [5,8].

In our case, the patient's intellectual disability and PICA likely contributed to the ingestion of 23 ballpoint pens. Flexible endoscopy is the preferred diagnostic and therapeutic tool for foreign body ingestion, allowing for direct visualization and immediate intervention. We opted for an emergency upper gastrointestinal endoscopy using 10% lidocaine as a local anesthetic [8,9]. To minimize the risk of complications, we used a snare technique to safely retrieve the pens without causing injury.

A review of similar cases highlights that psychiatric care, alongside medical intervention, is crucial to preventing recurrence in patients with conditions like PICA. Our multidisciplinary approach, combining successful endoscopic removal with psychiatric evaluation, underscores the importance of early recognition and comprehensive management of foreign body ingestion in high-risk populations.

Conclusion

In this rare case, we successfully removed 23 ballpoint pens from the stomach of a young male diagnosed with PICA. Multidisciplinary care, including timely endoscopic intervention and psychiatric treatment, was crucial in managing this complex scenario. This case underscores the importance of early recognition and comprehensive management of foreign body ingestion, particularly in patients with underlying psychiatric disorders like PICA.

Competing interests: None declared

Patient's Consent: Proper informed written consent has been taken from patient that no part of identity will be disclosed anywhere but academic interests it can encompass for future research.

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