MULTIPLE HOLLOW VISCUS PERFORATIONS CAUSED BY MULTIPLE FOREIGN BODIES IN A PSYCHIATRIC PATIENT: A CASE REPORT

ABSTRACT:

Hollow viscus perforation caused by foreign body ingestion or insertion per rectally is a serious and emergency condition that requires prompt diagnosis and prompt surgical intervention. This might be challenging at times, especially in patients with psychiatric abnormality as they tend to present late and might not disclose any history of ingestion or insertion of foreign body. Our case report described a 35 years old male psychiatric patient presented with chief complains of pain abdomen, distention and non passage of stool and flatus for 2 days. Clinical and radiological examinations confirmed the presence of hollow viscus perforation. The patient underwent emergency exploratory laparotomy. On exploration there was a perforation in the second part of duodenum caused by an sharp object (pen refill) and another perforation at the sigmoid colon caused by a plastic beaded object. Primary repair of the perforated sites was done using two layers repair technique after removing the foreign body. The patient made a good post operative recovery. The patient was discharged on 8th Post operative day after psychiatric consultation and evaluation.

Key words: **Hollow viscus perforation, psychiatric patient, emergency exploratory laparotomy**

INTRODUCTION:

Hollow viscus perforation by foreign body is a frequently encountered clinical phenomenon. Foreign body ingestion is commonly seen in small children and elderly [(1)] [(2)]. It can happen unintentionally or intentionally to mental health patients. In 80-90% of cases the foreign bodies pass through without any complications [(3)] [(4)] [(5)]. However in small percentage of patients it may lead to complications such as intestinal obstruction bleeding or perforations of gastrointestinal tract contributing significant morbidity and mortality [(6)]. The foreign body can cause perforation of any part of gastrointestinal tract being most prevalent in the digestive tract at sites of physiological angulations or

constrictions [5] [7]. When diagnosing non-metallic foreign body's perforation, the abdominal radiograph is usually unreliable [2]. The cornerstone of the preoperative diagnosis is the abdomen CT scan, which has an accuracy range of 82% to 90% in identifying the foreign body, location, and topography of the lesion [1]. Timely diagnosis and timely intervention is crucial for the successful outcome. Surgical treatment remains the primary modality of treatment [8] .

Here we present an unusual case of a young man presented with acute abdomen in emergency department secondary to ingestion and insertion of foreign body per rectally.

CASE REPORT:

A 35 years old male with psychiatric disorder presented to the emergency department of AMCH with abdominal pain, distention, non passage of stool and flatus for 2 days. The patient however did not give any history of foreign body ingestion or insertion per rectally even on direct questioning.

The patient was a diagnosed case of schizoaffective disorder diagnosed in April 2019, for which he was admitted in psychiatric ward at AMCH. After discharge from the hospital he was on tablet Risperidone 4 mg dialy, tablet Sertaline 100mg daily and tablet Clonazepam 1mg at bedtime. Initially the patient was compliant with the prescribed medications. However, over the past one and half year, the patient's adherence to the medication became irregular. His psychiatric symptoms progressively worsened during this period with several incidence of self harm. However there was no history of foreign body ingestion or insertion. The patient was briefly admitted for three times for his psychiatric condition in the November 2022, January 2023, and March 2023

On presentation the patient had decreased level of consciousness with a pulse rate of 120 per minute and blood pressure of 80/60mmhg. On examination abdomen was distended, generalized guarding and rigidity with tenderness and rebound tenderness present all over abdomen. Prompt resuscitation of the patient was done with intravenous normal saline (0.9% NaCl) administered at the rate of 1.5 liter over the first two hours, complimented by Ringer's lactate solution at 1 liter over the same period. Intravenous 2nd generation Cephalosporin (Cefuroxime 1.5gm) with intravenous metronidazole was started. Nasogastric tube and urinary catheter was inserted and blood samples were send for investigation and blood grouping and the patient was kept under strict monitoring.

After initial resuscitation the patient was shifted for radiological investigations. Radiograph of the abdomen shows peumoperitoneum (gas under diaphragm). USG abdomen shows free fluid in the peritoneal cavity. Laboratory investigations showed leucocytosis (TLC 18000/mm3) other parameters were normal. Considering the diagnosis, decision for emergency midline exploratory laparotomy was taken.

On opening the peritoneum moderate amount of contamination was present in the peritoneal cavity. On exploration a ball pen refill (size of 10 x 0.5 cm approximately) was found perforating the 2nd part of duodenum. On further exploration another beaded plastic foreign body (size of 10 x 1 cm approximately) was found perforating the recto sigmoid junction.

The foreign bodies were removed and the sites of perforation were repaired using a two layer closure technique. The inner transmural layer was sutured in a continuous manner using 3–0 polyglactin suture. The outer seromuscular/ Lembert suture was sutured in an interrupted manner, inverting the inner layer using silk sutures of size 3–0.

Abdomen was closed after thorough peritoneal toileting and placement of drain.

Post operatively the same intravenous antibiotics were continued. The patient made a good post operative recovery without complication. Psychiatry consultation was taken and the patient was discharged on the 8th post operative day on oral antibiotic and psychiatric medications.

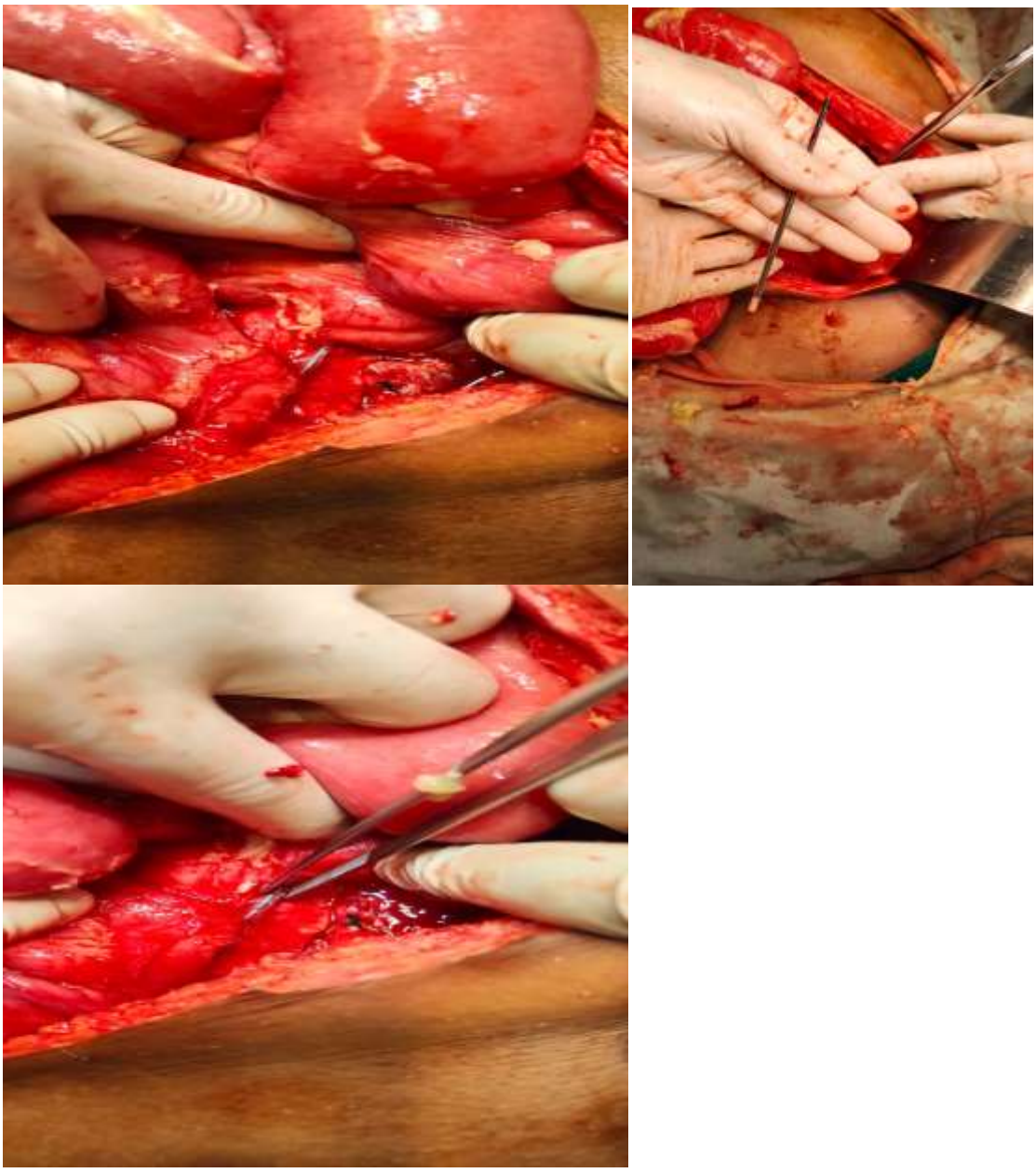

Figure1:Intraoperative pictures showing a ball pen refill perforating the 2nd part of duodenum.

Figure 2: Plain radiograph of abdomen showing pneumoperitoneum

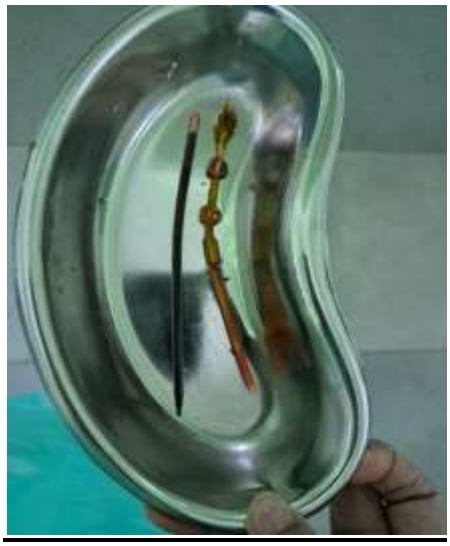

Figure 3. Picture of foreign bodies removed.

DISCUSSION:

Hollow viscus perforation caused by foreign body whether ingested or inserted can present with serious clinical condition which may sometime pose with diagnostic and therapeutic challenges especially in children and psychiatric patients as a definitive preoperative history of ingestion may not be obtained [9]. Sometimes the patient is unaware of foreign body ingestion. The most often consumed items are toothpicks and dietary foreign body[10]. Individuals with reduced palate sensitivity, toothlessness, mental illnesses, or alcohol/drug abuse habits are typically at a higher risk [2].

Hollow viscus perforation caused by foreign body can present with highly variable clinical features ranging from subtle symptoms like pain abdomen to overt signs and symptoms such as peritonitis , sepsis and shock depending size, location and time of presentation. In comparison to patients with foreign body perforations in the jejunum and ileum, patients with perforations in the stomach, duodenum, and large intestine were significantly more likely to be afebrile , to have chronic symptoms , to have a normal total white blood cell count , to be asymptomatic or present with an abdominal mass or abscess[9] . Intestinal perforation cause by foreign body may manifests as an acute abdomen emergency that can resemble diverticulitis or acute appendicitis [11]. After ingesting a foreign substance, patients with neurodevelopmental delays often present late and thus there is often delay in diagnosis and timely intervention. This raises their risk of complications, death, and morbidity since they are unable to provide a complete medical history [12][14].

Conventional X ray though may show pneumoperitoneum, it is not a realiable method in identifying and localizing the foreign body with minimal radio opacity or non metallic foreign body[2]. On the other hand a CT scan can contribute significantly in identifying the foreign body with minimal opacity and thus allowing the exact location of the site and thus allowing proper surgical plan[13]. The diagnosis made using a CT scan is based on two main findings: the presence of extraluminal air and discontinuity of the bowel wall, as well as indirect signs such as thickening of the intestinal wall, abnormal enhancement of the bowel wall, abscess, and an inflammatory mass adjacent to the bowel[15] [16] .

Surgical intervention remains a cornerstone of treatment of gastrointestinal perforations although in case of impacted foreign body endoscopic removal may be tried [17]. The two major goals of treatment are to remove foreign bodies and restore tissue damage. In order to detect concurrent lesions, the entire digestive system must be examined. Surgical care may involve suturing and trimming the margins, segmentectomy with end-to-end anastomosis, or segmentectomy with a stoma, depending on the assessment of the lesions [8]. In addition to laparotomy other treatment modalities include endoscopic, laparoscopic and rarely percutaneous interventional radiological technique[18][19][20].

In this case the patient being a psychiatry patient with behavioral abnormality on irregular medication did not disclose any history of ingestion and insertion of foreign body. The diagnosis was made on clinical grounds and aided by radiological investigations. The key indicative features being abdominal distension, tenderness and rebound tenderness with peumoperitoneum and free fluid on radiological investigations. The management of this patient was focused on immediate exploratory laparotomy which allowed thorough exploration of abdominal cavity and assessment of both recto sigmoid and duodenal perforation. In spite of perforation involving the rectosigmoid junction the level of contamination was surprisingly not so extensive, probably due decreased oral intake owing to his psychiatric condition allowing the primary repair of the defect. This case was not without limitation. A laparoscopic surgery when feasible can reduce postoperative pain and shortened hospital stay. The decision against using minimally invasive surgery was one of the significant limitation of this case.

CONCLUSION:

The prompt diagnosis, accurate imaging and timely surgical intervention is crucial in achieving a favorable outcome in the patients with multiple hollow viscus perforation caused by multiple foreign bodies in a psychiatric patient. It may post significant challenges to the attending surgeon at times, as psychiatric patients may have impaired insight, cognitive distortion or communication difficulties that impair their ability to provide reliable information. In addition a radiograph may not show the presence of non metallic body as stated by some manuscript mentioned above. These may cause significant delay in the diagnosis and intervention which may contribute to increased risk of mortality and morbidity. The role of a psychiatrist is crucial in assessment of the patient's mental health to address any underlying psychological issues, provide

appropriate counseling or treatment to prevent recurrence after managing the surgical emergency.

Disclaimer (Artificial intelligence)

Option 1:

Author(s) hereby declare that NO generative AI technologies such as Large Language Models (ChatGPT, COPILOT, etc) and text-to-image generators have been used during writing or editing of manuscripts.

Ethical Approval:

As per international standards or university standards written ethical approval has been collected and preserved by the author(s).

Consent

As per international standards or university standards, patient(s) written consent has been collected and preserved by the author(s).

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