

Gastric pouch obstruction in a bariatric patient caused by the ingestion of cocaine packets: a case report

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Abstract: The term "Body Packing" refers to individuals who carry intra-abdominal foreign objects containing illicit drugs that have been ingested to conceal them for smuggling purposes. With the increasing rates of international smuggling, drug transportation across borders has been constantly evolving among traffickers. Once introduced into the body, it becomes a matter of significant medical concern, as it can cause bowel obstruction, perforation, peritonitis, or intoxication. We present a case of a female, 44 years old, with a history of Fobi-Capella bariatric surgery, who was admitted to an Emergency Department for intractable vomiting, excessive drooling, and confirmed ingestion of 25 cocaine packages. The abdominal CT revealed multiple foreign bodies in the gastroenteroanastomosis topography, gastric pouch, and small bowel. Exploratory laparotomy with gastrotomy, enterotomy, and colotomy was performed. A second approach with intraoperative endoscopy was conducted to remove the remaining packages that were revealed by CT. This case report provides information about body packers' clinical condition, diagnosis, and treatment, to assist surgeons and clinicians with similar cases.

Keywords: Abdomen; Acute; Gastric Bypass; Body Packing; Cocaine.

1. Introduction

Drug addiction, whether to legal or illegal substances, is recognized as a disease by the World Health Organization (WHO). In Europe, approximately one-third of the adult population has experimented with illicit drugs, and there is approximately one death per hour due to drug overdose. Globally, the production and abuse of substances are on the rise. According to the United Nations Office on Drugs and Crime (UNODC) World Drug Report 2022, approximately 284 million people used drugs in 2020, representing a 26% increase over the past 10 years [1]. While these are approximate estimates, the drug trade is projected to account for 0.6-0.9% of the global gross domestic product (GDP), amounting to just \$ 400 billion per year in the United States [2]. With the increasing rates of international smuggling, drug transportation across borders has been constantly evolving

among traffickers. While drugs are transported in various forms of packaging, concealment within an individual's body remains a commonly used method for smaller quantities of drugs, and once introduced into the body, it becomes a matter of significant medical concern [2, 3].

The term "*Body Packing*," commonly known as a "*mule*," refers to individuals who carry intra-abdominal foreign objects containing illicit drugs that have been ingested to conceal them for smuggling purposes. It is important to distinguish this term from the following: "*Body stuffing*," which refers to a street dealer or drug user who, when caught, ingests the evidence because they are unable to discard it. And "*Body pushing*," which involves a professional drug smuggler hired to transport drugs introduced directly into the rectum, vaginal cavity, or external auditory canal [2, 4, 5]. Among these, "*Body pushers*" present a lower risk of medical complications since the packages are located near the orifices where they were inserted. On the other hand, "*Body packers*" and "*Body stuffers*" can have the packages lodged anywhere in the gastrointestinal tract and, in rare cases, they may be aspirated into the bronchial tree [6]. Intestinal obstruction in these cases, combined with drug intoxication, constitutes a condition known as "*Body packer syndrome*" (BPS), which can lead to complications such as intestinal perforation and subsequent peritonitis [2, 7].

Cocaine and heroin are among the most common drugs found in packets. In comparison, packets containing amphetamines and cannabis are seen, but with less frequency [6]. Cocaine intoxication leads to agitation, hypertension, sweating, dilated pupils, tachycardia, and can progress to seizures, arrhythmia, and respiratory and myocardial depression, with a lethal dose ranging from 1 to 3 grams. On the other hand, opioid overdose causes decreased bowel sounds, decreased level of consciousness, bradypnea, and pinpoint pupils [6-8]. When asymptomatic, as advances in packaging technology have made them less susceptible to rupture, conservative treatment can be pursued. This includes continuous monitoring of vital signs, the use of oily laxatives for spontaneous bowel evacuation, activated charcoal to prevent substance absorption, administration of promotility agents and/or intestinal lavage with polyethylene glycol. The use of rectal enemas is contraindicated. In the case of opioid intoxication, high-dose naloxone should be used as an antidote. For cocaine overdose, emergency surgical intervention is recommended, and symptoms can be managed with high doses of chlorpromazine and benzodiazepines, fentolamine, and cooling procedures until intensive care measures can be initiated [5-6, 8-9].

Regarding the indications for surgical treatment, the following can be mentioned: gastrointestinal obstruction or perforation, persistent opioid intoxication, cocaine intoxication, packages containing a mixture of cocaine and heroin, and cases of failure of conservative treatment with retained packages after 5 to 7 days of ingestion or with packages confined in the stomach for more than 48 hours, due to the risk of package perforation and intoxication by its contents [5, 7, 8, 10].

This report aims to present a rare situation that has not been described in the literature thus far: a case of gastric pouch obstruction caused by cocaine packets in a patient with Roux-en-Y gastric bypass (RYGB) [11, 12]. As observed, body packing can cause gastrointestinal obstruction. In the present case, the pylorus does not offer resistance due to the diversion caused by RYGB, but it is known that there is a restriction in gastric capacity, which, when combined with the ingestion of foreign bodies, theoretically increases the likelihood of obstruction considerably [12].

This case was reported according to the SCARE criteria [13].

2. Case Report

A 44-year-old woman seeks care in the emergency room with a history of intractable vomiting for 3 days, associated with excessive salivation. She reported not eating or drinking water for at least 3 days. Upon initial assessment, she disclosed having undergone Fobi-Capella surgery with a gastric band 18 years ago for morbid obesity, with irregular

follow-up and recent weight regain. The patient stated that she ingested 25 units of cocaine packets packaged for international drug trafficking. On initial physical examination, the patient appeared pale and dehydrated, with a normal abdominal exam. She had leukocytosis of 14,600 cells/mm³ and a C-reactive protein level of 32 mg/dL, with other laboratory tests within normal limits. In the face of diagnostic evidence of acute obstructive abdomen due to mechanical causes, it was decided to perform an urgent contrast-enhanced abdominal computed tomography (CT) scan to identify the level of obstruction (Figure 1, 2, and 3).



Figure 1: Non-contrast-enhanced abdominal CT showing a gastric pouch with a plastic ring proximal to the anastomosis, with the presence of an impacted foreign body at the site of the gastroenteroanastomosis.

Surgical treatment was chosen, and an exploratory laparotomy was performed. A gastrotomy was made on the lateral wall of the gastric pouch, followed by an enterotomy and colotomy, resulting in the removal of 19 intact cocaine capsules (deviating from the initial information of 25 units). There were no signs of rupture. The procedure was completed with gastrorrhaphy, enterorrhaphy, and colorectal repair. All the body packers removed after surgery are handled with extreme caution to avoid rupture and release of the contents, minimizing dissemination of the contents by the intestinal or hematogenous ways, and all capsules are sent to federal authorities in the country (Figure 4).

The patient underwent the first day of postoperative care in the intensive care unit and started receiving a diet on the second day of postoperative care. They showed good progress, but upon reintroduction of food, recurrence of vomiting and regurgitation symptoms was observed. A new tomography revealed the presence of an impacted remaining package in the distal esophagus. A new approach was scheduled for the removal of the gastric band, intraoperative endoscopy, and removal of the foreign body. On the seventh day, the patient presented a clinical picture consistent with hospital-acquired bacterial pneumonia, which was treated with guided antibiotic therapy, resulting in improvement. The patient was discharged after 14 days of postoperative care. Psychological and psychiatric support was provided during hospitalization, and the patient was referred for outpatient follow-up in the São Paulo prison system.

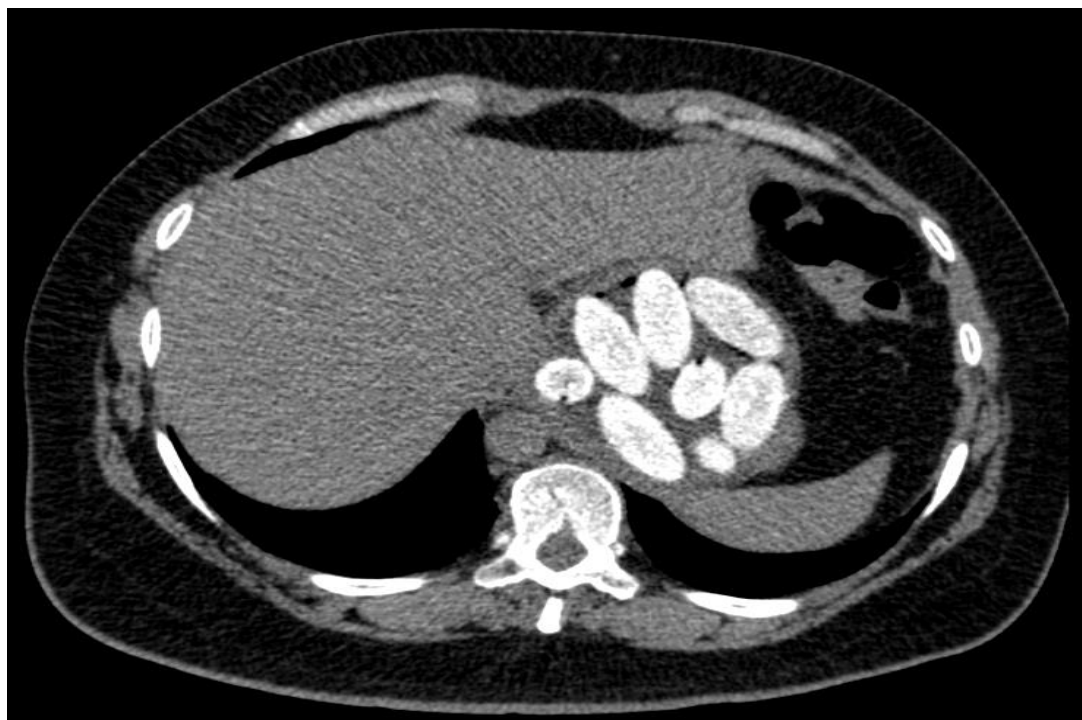


Figure 2: Non-contrast-enhanced abdominal CT revealing multiple oval-shaped solid capsules, measuring up to 4.5 cm, impacted in the gastric pouch, causing distension and upstream compression.

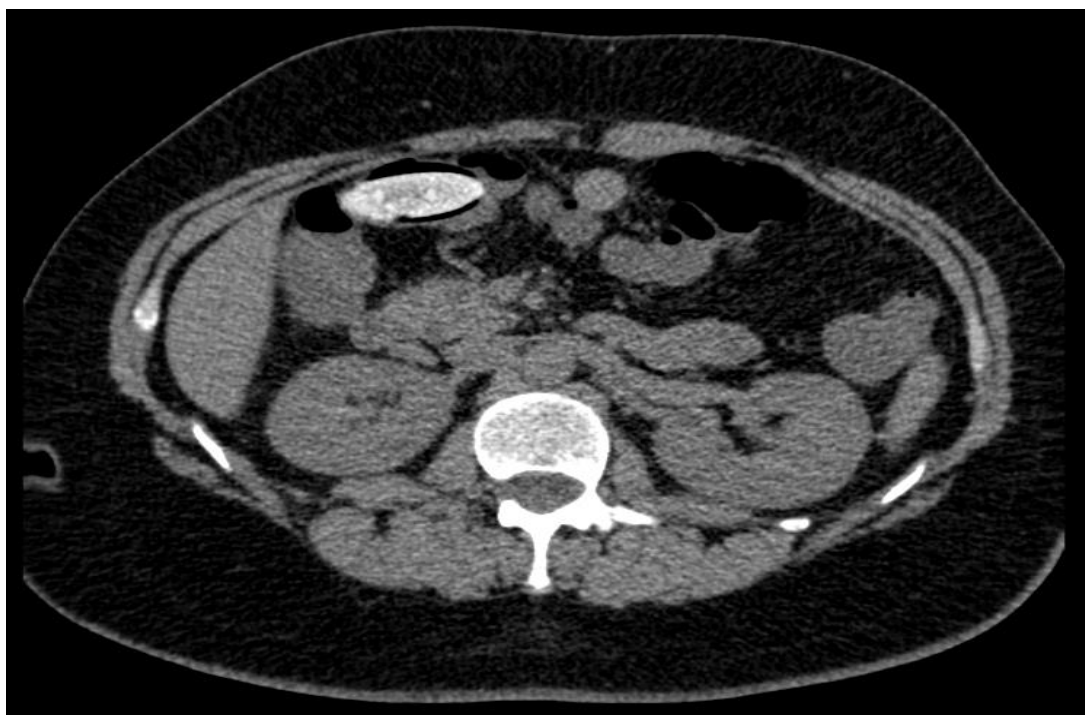


Figure 3: Abdominal CT scan showing a cocaine capsule in the small intestine.



Figure 4: Nineteen intact cocaine capsules removed after surgical treatment with gastrostomy, enterotomy, and colotomy via laparotomy.

3. Discussion and conclusion

Body packers are often a challenge for the medical team, as there are many inconsistencies in the reported accounts, and individuals rarely fully cooperate in providing their history [14]. It is common for these individuals to present to healthcare facilities for the following reasons: after being apprehended by authorities, due to systemic toxicity resulting from leakage of the packaged substances inside the body, or gastrointestinal obstruction or perforation caused by the transported packages [15].

Obstructive conditions caused by the ingestion of drug-filled packets should be promptly identified, diagnosed, and treated. Upon admission of a suspected case, doctors should strive to obtain information regarding the type of drug and its formulation, time elapsed since ingestion, number of ingested packets, total quantity of substance ingested, and packaging type and material [16]. The physical examination should assess specific signs and symptoms of drug intoxication, gastrointestinal obstruction, or respiratory depression, as well as the location of the packets in the body. Symptoms of cocaine intoxication present with hypertension, tachycardia, agitation, focal neurological symptoms, mydriasis, diaphoresis, seizures, hyperthermia, and tremors [16].

The diagnosis and management of body packers rely on radiographic evidence of foreign bodies, which is usually sufficient to increase the clinical suspicion of body packing and allow for intervention [6]. Trapped air between the layers of a drug packet can result in a classic radiological finding known as the "double condom sign". Air associated with knots tied in balloons, condoms, and other packaging materials may appear on plain films as the "*Rosetta sign*" [6]. Niewiarowski et al. (2010) reported, in addition to these, other radiological signs known as the "parallel sign," which, although not very common, was present in 27% of cases and highly specific when present. It is worth noting that the sensitivity of package identification can be increased when multiple signs are observed, particularly the presence of the "tic-tac sign," representing oblong and uniformly shaped packages, together with the double condom sign or hyperdense material around them [17].

Suspected individuals of body packing who present signs and symptoms of "BPS" and inconclusive abdominal films may be recommended to undergo contrast-free abdominal and pelvic computed tomography (CT) or other studies such as small bowel series [2, 6, 17]. It is important to note that on CT, the cocaine-filled envelope tends to be hyperdense, and the characteristic signs are like those seen on abdominal radiography, with improved sensitivity and specificity [17]. Berger et al. (2014) also highlighted that low-dose radiation CT will have greater applicability in the future [2].

In the present case, the anatomical modifications of bariatric surgery have significant relevance in the mechanism of obstruction. After Roux-en-Y gastric bypass procedure, the following sequence of structures is present: esophagus, gastroesophageal sphincter, gastric pouch, gastrojejunal anastomosis (GJ), Roux limb, and, more distally, jejunojejunal anastomosis [11]. Among these, the most important for this case is the gastrojejunal anastomosis, as it should have a maximum diameter of 1.5-2 cm for the effectiveness of the weight loss procedure [12]. Under normal circumstances, ingested food directly reaches the jejunum, passing through the GJ anastomosis without major difficulties. Additionally, intraluminal manometric evaluation of the gastric pouch in post-bariatric patients did not show a significant pressure gradient, which, for an individual with regular eating habits, does not present resistance [11]. However, in the case of mechanically wrapped polyethylene packages containing cocaine, the foreign bodies have an average diameter of 2 cm [2, 18]. In manually wrapped packages, the diameter can be even larger, with reports of packages measuring 3 cm in diameter [18]. These objects are hardened due to the high compression of the drug inside, with each package containing approximately 10 grams of cocaine. As a result, there is a clear disproportion between the size of the foreign body (diameter = 2-3 cm) and the GJ anastomosis (diameter = 1.5-2 cm), making it the most significant point of resistance.

Surgical removal of drug packets in cocaine-toxic body packers or in cases of intestinal obstruction is the preferred treatment approach [6]. Regarding the surgical techniques, one or multiple enterotomies can be performed in the sterile portion of the gastrointestinal tract, followed by milking the contents towards the enterotomy or anus, with the latter being the preferred site due to a lower risk of surgical infections. Gastrotomy can also be used, particularly for impacted packages in the stomach [8]. Endoscopy has also been prescribed for asymptomatic patients in whom intestinal irrigation was not satisfactory and packets remained in the intestinal tract, or for those who refused surgical intervention. However, this technique is seldom used due to the high risk of package rupture [5, 19, 20]. Although the patient in question did not show signs of systemic toxicity from the impacted drugs, an endoscopic approach was considered but subsequently discarded since the impaction in the gastric pouch was not amenable to endoscopic removal, warranting surgical removal instead.

Most patients receive preoperative antibiotics, typically a second-generation cephalosporin with metronidazole or a third-generation cephalosporin. The number of concealed packets found in the operating room generally ranges from 1 to 120 (average of 50), but in the reported case, 19 packets were found, with most of them impacted in the gastric pouch and one in the intestinal loop [10]. The importance of actively searching for all the drug-filled packets is crucial for a favorable outcome. It is essential to utilize the full range of available complementary tests for a more appropriate management of this catastrophic and life-threatening situation.

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Conflicts of Interest: None.

Supplementary Materials: None.**References**

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