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Surgical decontamination in heroin body packer, Asharqia, Egypt: Case report

Dalia M. Amin, Ahmed M. El Teliti

ABSTRACT

Introduction: Intra-corporeal concealment of recreational drugs known as 'body packing' is uncommonly reported. Opium, heroin, and marijuana are the most incorporated drugs. Body packers may also be called swallowers, internal carriers, couriers or mules. Gastrointestinal obstruction or toxicity of the leaking drugs inside the packets are the main symptoms appear. Management strategies are determined by the sypmptoms of presentation. Gastrointestinal decontamination as well as surgical decontamination may be indicated. Case Report: A 35-year-old confirmed body packer was brought to our emergency department from the prison because of repeated vomiting and abdominal pain. He presented with a high respiratory rate of 40/min but normal oxygen saturation on ambient air, a heart rate of 110 bpm, a blood pressure of 110/70 mmHg and a temperature of 38.0° Celsius. Blood tests were suggestive of infection with electrolytes imbalance, urine analysis was positive for morphine and Tramadol. Abdominal and thoracic X-rays showed pulmonary infiltrates as a possible focus of infection; no signs of bowel obstruction or perforation. Given his history of ingestion of foreign body and his clinical presentation, we suspected acute abdomen to be the main problem. We therefore did immediate surgical decontamination with extraction and primary repair of gastric incision. Conclusion: This case illustrates the challenges to diagnose, evaluate the potential drug packers and to consider body packer in acute abdomen and intestinal obstruction cases in emergency department for early surgical decontamination before acute toxicity of large overdose and probably death.

Keywords: Body packer, Egypt, Heroin, Surgical decontamination

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INTRODUCTION

The problem of drug abuse is increasing in Egypt in last year's [1]. Body packers smuggle recreational drugs by entraping the drugs in their gastrointestinal tract. They are sometimes referred to as "swallowers", "internal carriers", "couriers" or "mules" are persons who, swallow or insert drug-filled packets into a body cavity, generally in an attempt to smuggle them across secure borders [2]. Body packers can carry packets, containing large doses of opium, heroin, and cocaine, or amphetamines derivatives. These drugs is usually enclosed in plastic containers as capsules, condoms, balloons, bags, or latex gloves up to one kilogram [3].

The presentation to healthcare providers may be drug induced toxic effects, intestinal obstruction, or request

by law-enforcement officers for medical confirmation of suspected body-packing. They should deal medically and legaly with these clinical scenarios [4].

Heroin poisoning occurs when an ingested heroin packet ruptures in the gastrointestinal (GI) tract of a "body packer"[5].

Drug toxicity due to package rupture is reported less frequently than gastrointestinal obstruction, probably because of enhancing quality of drug packages over time. The rupture of heroin-containing packets, is risky and immediate surgical removal of the drug containers is the highly recommended treatment. Moreovere, symptoms should be treated during during preparation for surgery [6].

Herein, we report a case of a heroin body packer that presented with acute abdomen and repeated vomiting.

CASE REPORT

A 35-year-old Egyptian male was brought to our ED from a prison because of abdominal pain and repeated vomiting. He had been arrested by Egyptian authorities because of suspected internal concealment of drugs of abuse (body packing), which had been confirmed by abdominal X-ray (Figure 1) in our hospital. The patient had presented with abdominal pain and repeated vomiting with history of swallowin foreign body suspected heroin-containing body packets. In addition, he had reported recreational use of tramadol and heroin. The patient's past medical history was unknown. Standard operating procedure in such a case is to perform a X-ray at the ED. The examination findings would be unremarkable, apart from the anxiety-related sympathetic surge. Abdominal distension and palpable packets was noted in the abdomen. His heart rate was 120 bpm, blood pressure was 100/60 mmHg, respiratory rate was 40/min, oxygen saturation by pulse oximetry was 75% on ambient air and auricular temperature was 38.0° Celsius. Communication with the patient was impossible because of his altered mental status. The physical examination of heart, lungs and abdomen revealed no pathologies. Neurological examination showed symmetrical spontaneous movement of all extremities and symmetrical eye movement in both sides stimulated by verbal or painful stimuli. Glasgow coma scale was 11. An electrocardiogram showed sinus tachycardia without signs of ischemia. Due to our knowledge of the ingested body packets. We treated the patient with repeated doses of intravenous fluids and performed an emergency abdominal X-ray to guide potential emergency surgical decontamination. The X- ray showed one large tubular pack containing 12 small packets gas lined in the gastrointestinal tract (stomach) without signs of gastrointestinal obstruction or perforation. Laboratory results showed slightly increased creatinine level (1.27 mg/dl, norm 0.7–1.2 mg/dl), slightly increased urea level (50.2 mg/dl, norm 6–20 mg/dl), PH (7.5, norm 7.35-7.45) mild hyponatremia (133 mmol/l, norm 134– 146 mmol/l), hyperkalemia (3.26 mmol/l, norm 3.4– 4.5 mmol/l) and slightly elevated liver enzymes (SGPT=62.8 U/L, norm up to 40 U/L and SGOT= 59.2 U/L, norm up to 40 U/L). A qualitative urine toxicological test was positive for morphine and tramadol.

Given the clinical presentation of our patient with remarkable hypotension and elevated white blood cells, we suspected infection rather than abdominal pain and repeated vomiting to be the main problem. Thorough review of the chest X-ray revealed rapidly progressive pulmonary infiltrates in the lower left lobe and lingula, diffuse lymphadenopathy and hepatosplenomegaly (Figure 2).

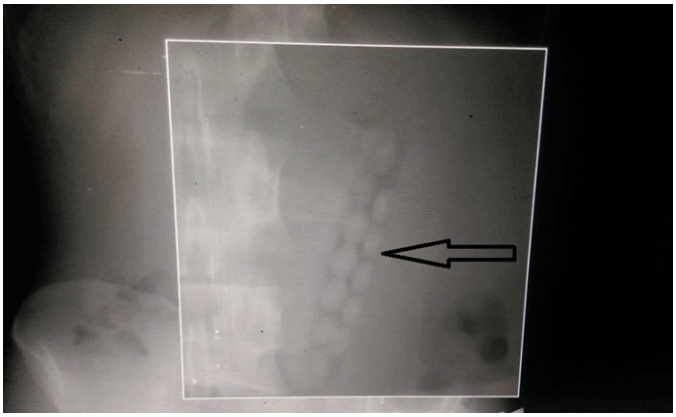

Figure 1: Abdominal radiograph shows multiple small drug packets inside a tubular larger pack with gas-halos.

Figure 2: Chest radiograph shows increased haziness at the left lower lung field with obliteration of the cardiac border; this indicates a lobar pneumonia at the lingular division of the upper lobe and bilateral enlargement of the suprahilar area with a prominent left hilum.

Surgical decontamination

Due to the above named findings, we did emergency laparotomy under general anesthesia, we found a tubular packet had been consumed orally 3×15 cm and weighed approximately 25.5 grams (Figure 3)and started broad-spectrum antibacterial treatment with ceftriaxone and clarithromycin according to our hospital's guidelines for severe pneumonia. Based on the elevated creatinine level we diagnosed acute kidney injury, most probably caused by dehydration precipitated by infection and repeated vomiting. Therefore we treated the patient with intravenous fluids.

Disposition

The patient was admitted to our intensive care unit and isolated for possible pulmonary tuberculosis. In the course of his hospitalization, further diagnostics were available: Blood and urine cultures showed bacterial growth. The diagnosis of pneumococcal pneumonia and sepsis could thus be confirmed, Active pulmonary tuberculosis was excluded by three negative sputum smears and three negative sputum cultures.

DISCUSSION

Heroin (diacetylmorphine) is a semisynthetic narcotic that was first synthesized in 1874 [7]. In the Egypt, heroin remains one of the most frequently abused narcotics. In its pure form, heroin is a white powder with a bitter taste. Heroin is able to modulate pain perception and cause euphoria. Similar to morphine, heroin and its metabolites have mu, kappa, and delta receptor activity [8].

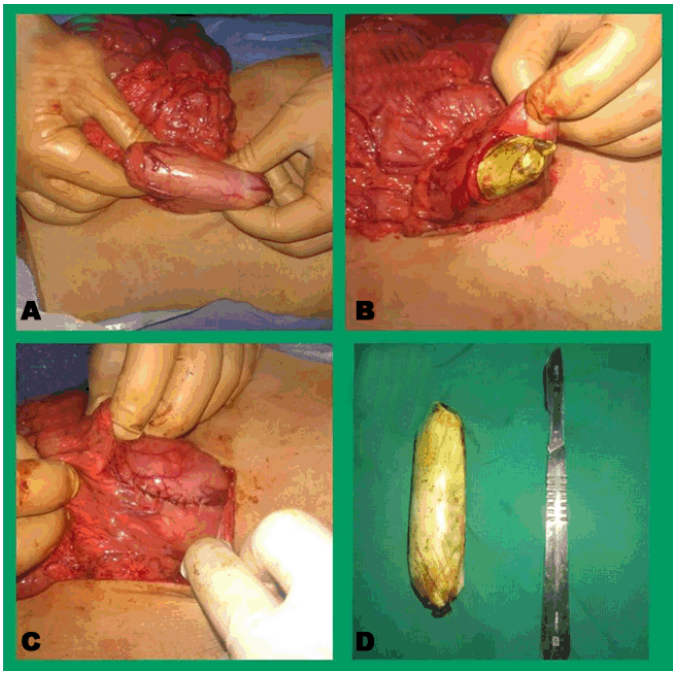

Figure 3(A–D): Packet found during the labarotomy and existed from the patient gastrointestinal tract.

Narcotics as Morphine and heroin decreases the brain's response to PCO2 and PO2 changes, resulting in respiratory center depression. Hypotension is also main symptom because peripheral vascular resistance reduction, Flushing is produced due to vasodilation of the cutaneous blood vessels [9].

The unlucky body packers may present with symptoms of overdose toxicity. The effective and safe antidote naloxone can usually be used to antagonise the toxic effects of heroin, but very high bolus doses and infusion may be required. Sometimes, the larger drug packet may cause obstruction, initially at the pylorus or later at the ileocaecal valve.

Heroin is quickly metabolized to 6-MAM and morphine. Most qualitative toxicological studies only screen for morphine, and they use the presence of morphine in the urine as a surrogate for heroin use. In criminal and legal cases, however, testing for specific compounds is necessary, and, because 6-MAM can only be generated from heroin metabolism, the presence of 6-MAM on a drug screening test is taken as evidence of heroin use [10].

The diagnosis of heroin poisoning is usually made clinically with naloxone, but laboratory analysis may be helpful in confirming heroin use by urine screen (morphine positive) [11].

Some investigators have reported that urine testing is a reliable method for the identification of drugs in every type of internal concealment, although some investigators have found negative results probably due to the patient's hospitalization. Heroin is changed to morphine, the morphine is the measurable metabolite up to 12 hours [12].

X-ray is a method used to identify drug pellets, but the X-ray results may be unclear in strongly suspicious cases. Radiological investigation is useful in the initial evaluation of suspected body packers. In the emergency department, plain abdominal X-ray may be able to reveal multiple radio-dense foreign bodies suggesting the presence of underlying body packing. There may be oval soft tissue shadows surrounded by a gas halo (Figures 1) [13].

Plain abdominal X-ray has a sensitivity of 74%to 100% [14]. False-positive findings may be the result of copious stool, especially if the patient has taken some constipating agents deliberately to delay the bowel transit time. Large bladder stones and intraabdominal calcifications have also been incriminated as causing false-positive radiological findings. On the other hand, false-negative studies can be due to inexperience or poor quality films. It is alarming to note that as many as 135 packets had been passed in a patient on whom the initial screening abdominal radiograph was reported as negative [15]. Contrastenhanced X-rays can better identify the packets as filling defects from the background of the contrast medium [15].

Ultrasonography has been found to be studied more [16]. The widespread use of abdominal ultrasonography in the emergency department may be attractive in the evaluation of body packing. Two small studies have reported high correlation between sonographic and plain radiography findings [17]. However, there are not enough data to support or refute the use of this fast and safe tool in the evaluation of body packers [18].

Computed tomography (CT) is less readily available in the emergency department setting. Contrast enhanced CT can pick up the packets as radio-opaque foreignbodies surrounded by a rim of gas. In one study, CT Hounsfield units were used to differentiate between the different contents of the packets, with cocaine having a Hounsfield unit of -219 and heroin -520.3 [17].

Gastric lavage in an oral heroin overdose is not valuable. In addition, gastric lavage is prohibited in body packers because the gastric lavage tube may rupture a drug packet [19].

Activated charcoal is highly indicated for oral narcotics overdose, especially narcotics with large entrohepatic circulation as propoxyphene, is of no valuable role in heroin overdose. Whole-bowel irrigation is highly recommend in body packers, except in the presence of intestinal obstruction or perforation. Whole-bowel irrigation may be accomplished with an oral polyethylene glycol solution at a rate of 2 L/h until the stools are watery and clear [20].

Admission to the intensive care unit is also rarely required and is indicated for patients who require respiratory support as sever chest infection and those with life-threatening arrhythmias, shock, and recurrent convulsions, as well as those who require continuous naloxone infusions (rebound coma, respiratory depression) [14].

Surgery is usually performed without any complications. Immediate surgical decontamination is emergently required especially any sign of packet leakage with heroin toxicity. Prompt surgical management is indicated for complications of bowel obstruction. Residual retained packets after surgical decontamination has been reported. Confirmation of complete bowel evacuation may therefore be necessary after operative intervention [21].

Surgery is indicated if there are repeated bouts of heroin toxicity, radiographic evidence of packet retention in stomach, intestinal obstruction or perforation [3].

Successful endoscopic removal of packets from the stomach, rupture during the procedure is the hazardous. This is highly dangerous maneuvour is not recommended. Alternatively, the passage of two or three packet-free stools after continuous whole bowel irrigation for 12 hours plus a negative abdominal radiography may be used as a guide to suggest complete clearance [22].

Nonetheless, the slim yet genuine chance of delayed rupture of any residual packets has been reported and cannot be overemphasised [23].

Development of algorithm strategies (Figure 4) [24] and thorough understanding of the medico-legal limitations may help alleviate the misunderstanding and aid appropriate decisive management.

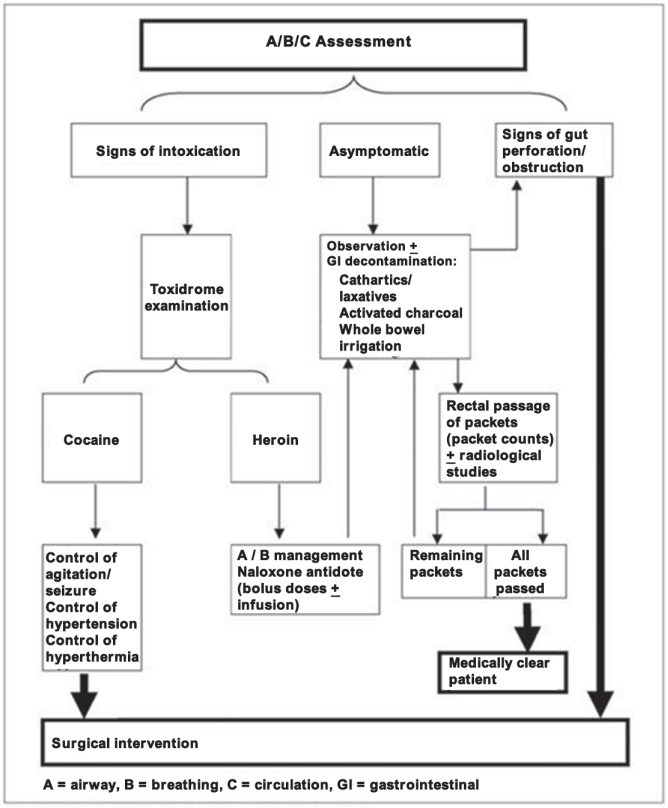

Figure 4: Suggested algorithm for the management of body-packers.

CONCLUSION

Body packers are not common encounters in the emergency department. However, these uncommon clinical situations may present medical and legal challenges to novice and sometimes experienced emergency physicians.

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Author Contributions
Dalia M. Amin – Substantial contributions to conception and design, Acquisition of data, Analysis and interpretation of data, Drafting the article, Revising it critically for important intellectual content, Final approval of the version to be published
Ahmed M. El Teliti – Substantial contributions to conception and design, Acquisition of data, Analysis and interpretation of data, Drafting the article, Revising it critically for important intellectual content, Final approval of the version to be published

Guarantor of Submission
The corresponding author is the guarantor of submission.

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Consent Statement
Written informed consent was obtained from the patient for publication of this case report.

Conflict of Interest
Authors declare no conflict of interest.

Data Availability
All relevant data are within the paper and its Supporting Information files.

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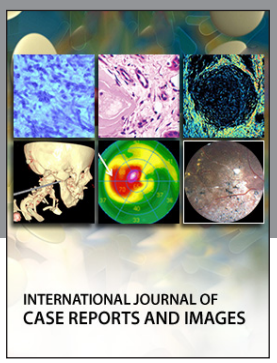

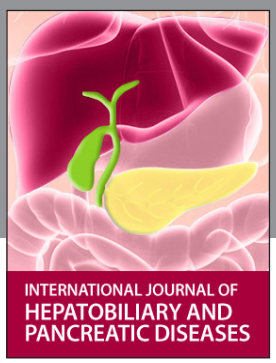

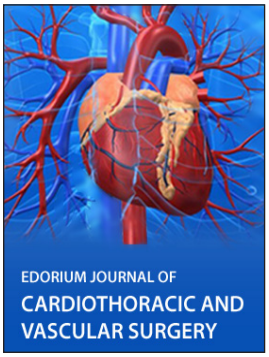

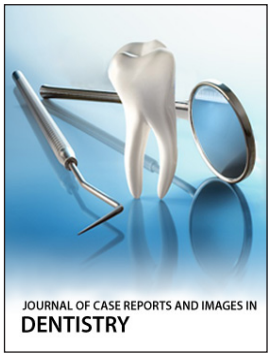

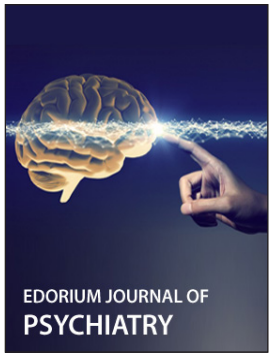

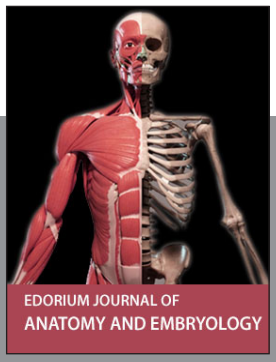

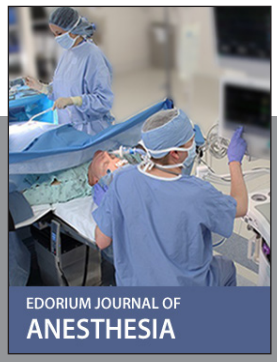

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