

Surgical Complications of Cocaine Body-Packing

A Survey of Jamaican Hospitals

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ABSTRACT

Body-packing is a common method of smuggling cocaine. Complications requiring surgery do not occur with sufficient frequency to allow any individual surgeon to determine patterns of presentation and the best approach to the conduct of surgery. A survey of all surgical units in Jamaica was conducted. A case was any patient requiring surgery for cocaine body-packing since and including the first reported case in 1987. Seventeen cases were identified. There were 11 cases of bowel obstruction, two of delayed passage of pellets, three of ruptured pellets with cocaine toxicity and one patient panicked and requested surgery. The distal ileum was the commonest site of obstruction in the normal gastrointestinal tract. In all three cases with cocaine poisoning, the ruptured packets were encountered in the upper gastrointestinal tract and several other partially ruptured packets were also found, implying that poor packaging was the cause of rupture. Obstructing packets should be removed but non-obstructing, unruptured packets encountered in the colon may safely be allowed to pass spontaneously. All cases of packet rupture with cocaine toxicity should have immediate surgery.

Complicaciones Quirúrgicas del Empaquetamiento Corporal de Cocaína

Una Investigación en Hospitales de Jamaica

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RESUMEN

El empaquetamiento dentro del organismo de seres humanos es un método común del contrabando la cocaína. Las complicaciones que requieren cirugía no ocurren con frecuencia suficiente como para permitir al cirujano determinar patrones de presentación de los casos, y el mejor enfoque en cuanto a la conducta quirúrgica a seguir. En este sentido, se llevó a cabo una investigación en todas las unidades quirúrgicas de Jamaica. Se tomó como caso cualquier paciente que hubiere requerido cirugía por haber empaquetado cocaína dentro de su cuerpo, desde que ocurriera el primer caso en 1987, e incluyendo éste. Se identificaron diecisiete casos. Hubo 11 casos de obstrucción intestinal, dos pasajes retardados de cápsulas, tres por cápsulas rotas con intoxicación por cocaína, y un paciente que preso de pánico, pidió ser intervenido quirúrgicamente. El ileo distal fue el sitio más común de la obstrucción en el tracto gastrointestinal normal. En los tres casos de envenenamiento por cocaína envenenar, las paquetes rotos se encontraban en el tracto gastrointestinal superior, y se encontraron también varios otros paquetes parcialmente rotos, lo cual indicaba que el pobre empaquetamiento fue la causa del rompimiento. Los paquetes que causan obstrucción deben ser retirados, pero los que se hallan en el colon sin causar obstrucción y sin estar rotos, puede dejárseles con seguridad ser excretados espontáneamente. Todos los casos de rompimiento de paquetes con intoxicación por cocaína deben ser sometidos a cirugía de manera inmediata.

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INTRODUCTION

Jamaica is a significant trans-shipment centre for cocaine from the producing countries in South America to the

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markets of Europe and North America (1). Body-packing, in which sealed packets of the drug are swallowed, is a popular method of smuggling. The cocaine is wrapped in various materials (latex, plastic film, aluminum foil) and takes the form of a capsule. The packer is prepared with a proton pump inhibitor and a constipating agent and then swallows 50 to 150 or more packets. A laxative is taken at the destination to speed evacuation of the packets.

Each packet contains on average of three to seven grams of cocaine (2, 3) and sometimes as much as 12 grams (4). The lethal dose of ingested cocaine is one to three grams (5, 6) so complete rupture of the smallest packets will often cause death. Reluctance to operate on patients with cocaine poisoning from packet rupture persists despite recommendations that emergency surgery offers the best chance of survival (7-11). This reluctance is born out of a combination of ignorance of the results of surgical intervention, which are uniformly good (9-12), the fact that successful conservative treatment does occasionally occur (11) and that most patients with packet rupture die very quickly (9) resulting in a fatalistic attitude to the complication. Surgeons need to be persuaded that surgical intervention is the only reasonable option.

Bowel obstruction is the other common surgical complication of body-packing. Knowing the most common site of obstruction would be helpful but previous reports had only few obstructed cases, none more than three (2, 12). It would also be helpful if clear-cut guidelines were to emerge for management of unruptured pellets encountered in the colon during laparotomy.

A survey of surgeons working at hospitals (public and private) in Jamaica was carried out to attempt to capture enough cases to answer these questions.

SUBJECTS AND METHODS

The coding system for medical records at Jamaican hospitals does not have an appropriate category for cocaine body-packers. A records search was therefore predictably unhelpful.

Surgical complications of cocaine body-packing are uncommon. Most surgeons who have had to deal with this problem have not seen more than a single case. It was felt that surgeons would fairly accurately remember any such encounters. Interviews were conducted with surgeons in charge at small hospitals and at least one member of each surgical firm at larger hospitals. Where necessary, the operating records for the cases identified were checked. Interviews were restricted to General Surgeons and Otorhinolaryngologists but all hospitals in Jamaica, public and private, were targeted. Cases were defined as any patient requiring surgical (or endoscopic) intervention to ameliorate a complication of cocaine body-packing since and including the first case report in 1987 (13).

RESULTS

Seventeen cases were identified from 5 of 21 public and private hospitals. Two additional patients with incomplete bowel obstruction were identified but were not included as cases since they passed the pellets and settled without surgical intervention. No surgeon saw more than two cases. Table 1 indicates how the cases were distributed by complication requiring surgical intervention.

Of the 11 with bowel obstruction, eight had normal gastrointestinal tracts with obstruction being due to accumulation of a large bolus of packets. The point of obstruction was distal ileum (a few centimeters short of the ileocaecal valve) in five of the eight cases, stomach in two and sigmoid colon in one, making the distal ileum the commonest site of obstruction in a normal gastrointestinal tract (Table 2).

Table 1: Cases of cocaine body-packing by complication requiring surgery.

Number of Cases	Complication
11	Bowel obstruction
2	Delayed passage of pellets
3	Rupture or leakage of pellets
1	Patient panicked (requested surgery)

Table 2: Site of obstruction in normal gastrointestinal tract

Number of cases	Site of obstruction
5	Terminal ileum
1	Stomach
1	Sigmoid colon

The remaining three cases of bowel obstruction had underlying predisposing pathology. One had adhesions from previous appendicitis and appendectomy, one had a Meckel's diverticulum in which a few pellets became trapped blocking the path of proximal pellets and the third had a benign distal oesophageal stricture in which a pellet became wedged.

One of the patients with delayed passage presented seven days after swallowing them but she was not obstructed. A large bolus of pellets was found in her stomach. The other presented 20 days after swallowing pellets because she had not passed out all she had swallowed. Several large pellets were found in her stomach proximal to a scarred duodenum.

Gastrotomy and/or ileotomy was performed as appropriate. All small bowel pellets were retrieved through a single stoma. Most patients had some pellets in the colon and most surgeons elected to leave these alone and allow spontaneous passage postoperatively. However, one surgeon milked the colonic pellets into the rectum and retrieved them postoperatively by giving enemas. The only patient who had colotomy performed was the one with obstruction in the sigmoid colon. The colotomy was exteriorized as a temporary loop colostomy.

Retrieval of the pellet wedged in the oesophageal stricture was particularly challenging. The procedure was performed through a rigid oesophagoscope. Attempts to dislodge and retrieve it by passing a Foley catheter were unsuccessful. The pellet was eventually dislodged by gentle

nudging with a non-tenaculum forceps and removed by grasping gently with non-tenaculum forceps and coaxing it slowly into the lumen of the oesophagoscope. Irrigation and suction cannulae were placed in readiness for any rupture which might have occurred.

All three patients with ruptured or leaking packages presented within a few hours of swallowing the pellets, with one presenting 20 minutes after the act. One had a completely ruptured pellet in the stomach and five partially unravelled pellets in the stomach and proximal small bowel. Another had the ruptured pellet in the duodenum and also other partially unravelled pellets. The third had several partially unravelled pellets but no clearly ruptured ones, all found in the proximal small bowel. In all three cases, the ruptured or leaking pellets were found after a single gastrotomy or enterotomy as the pellets had not yet become widely dispersed. Obvious powder was wiped away followed by irrigation. No colonic pellets were encountered in these patients.

In all cases, the patients admitted to swallowing cocaine packets so the diagnosis was not in doubt. Abdominal X-rays were done in some patients but was considered unnecessary in most. No ultrasound, computed tomography or contrast studies were performed.

DISCUSSION

There is no alternative to laparotomy in completely obstructed patients except when the obstruction is in the oesophagus. On the other hand, the two cases of incomplete obstruction identified both resolved without surgery. Endoscopic retrieval is not an option when the obstructing pellets are in the stomach as this would require multiple passages of the gastroscope, increasing the risk of pellet rupture (14). Obstructing oesophageal pellets should be retrieved rather than pushed into the stomach unless the latter manoeuvre is followed by immediate gastrotomy. It must be assumed that trauma from pushing the pellet through a stricture into the stomach carries a significant risk of rupture and it would be dangerous to await spontaneous passage. Oesophageal pellet retrieval may be safely achieved with a basket if the pellets are loose. Grasping with a forcep and snaring can cause rupture but successful retrieval by snaring has been reported (15). Despite admonitions that endoscopic retrieval is dangerous in general (16), the risk of careful endoscopic removal from the oesophagus is probably exaggerated and in any case, the risk of endoscopic removal is almost certainly less than that of any other surgical approach to the oesophagus. The rigid oesophagoscope appears to have an advantage over the flexible instrument because of the wide lumen which will accommodate most average sized pellets. Preparation for irrigation and suction in case rupture does occur, as was done in the case presented, seems like a reasonable precaution to take.

Intact pellets in stomach and small bowel are evacuated through a single gastrotomy and/or enterotomy

incision. Those distant from the stoma can be milked to it and removed. The enterotomy incision should be longitudinal and should be closed transversely to avoid stenosis.

Non-obstructing pellets in the colon pose an interesting dilemma. Removal through a colotomy will expose the patient to the risk of sepsis. The risk of rupture of pellets already in the colon must be very low as there are no noxious enzymes here and the pellets are subject to less turbulence within formed stool than they would be in the small intestine. Only one report of pellet rupture in the colon was encountered (7) and that occurred after over-enthusiastic whole bowel irrigation lasting three days.

None of the surgeons involved in this survey opted to perform colotomy for retrieval of non-obstructing colonic pellets. Only one surgeon in a single case milked the pellets to the rectum followed by postoperative enemas. In all other cases, the colonic pellets were simply left alone and spontaneous passage was awaited in the postoperative period and this occurred in all cases without event. When the obstruction occurs in the colon, colotomy may be necessary.

Patients who present with signs of cocaine poisoning from ruptured pellets should have immediate surgery performed (7-11). There are several reasons why surgery should be the first option. In general, conservative treatment is unsuccessful. Just over one gram of ingested cocaine can be lethal (5, 6) and the smallest packets contain at least 3 gms (2, 3). Also, it appears from this study that leakage is primarily a function of poor packaging and not length of time packets spend in the gastrointestinal tract, as suggested by others (7). All cases of packet rupture presented very soon after the act of ingestion and all were found in the upper gastrointestinal tract. Unfortunately, most relevant studies did not indicate the site at which ruptured packets were found, neither at surgery (9) nor at post mortem (17) so the trend noticed here has not been corroborated. In all cases, several partially unravelled pellets were encountered, in addition to the packet that ruptured, which implies that the entire batch was poorly packaged. Also, in all cases, the mechanism of packet disruption was by unravelling rather than dissolution. If indeed leakage is due to poor packaging, then other packets from the batch swallowed would most likely rupture if not removed as quickly as possible and especially if they were subjected to excessive turbulence from catharsis.

The fatalistic attitude detected during the interviews should not deter surgeons from operating promptly on these patients. Although the vast majority of patients with packet rupture would die before reaching hospital or before surgery (9), it is not reasonable to assume that those who do reach hospital will also invariably die. Those cases which reach hospital are likely to have several factors favouring survival if surgery were performed promptly. The mechanism of packet disruption in these cases is likely to be a slow unravelling rather than catastrophic rupture. Some tolerance to the toxic effects seems to occur after slow administration

of cocaine (18) and there are significant inter-individual differences in tolerance to a given dose (5, 6). Adulteration of the cocaine, a common trick of the trade, will diminish the intensity of its effects. A confluence of such fortuitous factors is likely to have allowed the patient to get to hospital in the first place and is also likely to allow time to get them to the operating room. The results of surgery in the three cases done for packet rupture was dramatic and gratifying.

Ruptured or leaking pellets were all encountered in the stomach or proximal small bowel. Multiple enterotomies should be preferred to doing a single stoma if the packets were widely dispersed (4), as the act of milking leaking pellets to a single stoma will increase the chance of complete rupture of partially ruptured pellets and expose the cocaine already spilled to a larger absorptive surface. Obvious deposits of free cocaine should be wiped away before any irrigation and suction is performed, precaution being taken to minimize spillage into the peritoneal cavity.

Pellets in the colon in a patient with cocaine poisoning must be retrieved if the ruptured packet is not encountered elsewhere and probably should be retrieved even if the offending pellet is found elsewhere, bearing in mind that the evidence suggests the entire batch is prone to rupture. In the three cases done for packet rupture, no pellets had yet reached the colon. Identifying a leaking packet by colotomy or evacuating non-leaking packets by colon irrigation and digital extraction from the rectum (in patients with cocaine poisoning) seem to be reasonable options.

The findings suggest that in cocaine body-packers, the distal ileum is the commonest site of obstruction in the normal gastrointestinal tract. The site of obstruction in normal gastrointestinal tract depends on the size of pellets, being more common in the stomach if pellets are large (12). As smugglers become more experienced and package size becomes more uniform, it is likely that the distal ileum will prove to be the most common site of obstruction in normal gastrointestinal tract. Complete bowel obstruction requires laparotomy. Non-obstructing, unruptured colonic pellets may be safely allowed to pass spontaneously (in patients operated on for obstruction). Certainly over-enthusiastic measures to retrieve such colonic pellets are not justified by this study and may result in rupture (7). Cocaine poisoning

from packet rupture demands immediate surgery and this approach is justified. Unruptured pellets in the colon of patients operated on for cocaine poisoning should probably be removed on the table, preferably without colotomy.

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