

# Diagnostic Imaging Review

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**FIGURE 1**  
Oblong densities  
on the radiograph  
of a body packer

## An unresponsive airline passenger with miosis

### CASE

An unresponsive 49-year-old male with pinpoint pupils was found in the international arrivals terminal at the airport. The paramedics noted a white powdery substance around his mouth and nostrils. The patient awoke after being given naloxone for suspected heroin overdose. By the time he was transported to the emergency department (ED), he was alert and oriented. Examination revealed tachycardia and hypox-

ia. Although the patient was a poor historian, he admitted that he had snorted cocaine before boarding the airplane and had used heroin during the flight. His urinary toxicology was positive for opiates. A plain radiograph of his abdomen was obtained (Figure 1).

**What does the image reveal?**

### DISCUSSION

Figure 1 shows numerous homogeneous densities, all of which had

smooth borders and an oblong configuration consistent with drug packets. The multiplicity of these densities and their location in the colon are pathognomonic for drug smuggling.

When confronted with the diagnosis, the patient admitted that he had “pumped” an unknown number of drug packets into his colon before boarding the airplane. He was initially offered surgical removal of the drug packets; when he refused, he was transferred to the ICU for observation. Following bowel cleansing with an oral solution containing polyethylene glycol and electrolytes, he defecated a total of 50 drug packets over the next 24 hours. All packets were intact and found to contain heroin. A repeat abdominal radiograph showed no evidence of drug packets.

**Body packers** Persons who conceal packets of illegal drugs, such as cocaine and heroin, in their body for transport primarily into other countries are known as *body packers*. Other designations are *mules*, *internal carriers*, *couriers*, *swallowers*, or *body stuffers*. In addition to transporting cocaine and heroin, body packers may smuggle amphetamines; 3,4-methylenedioxymethamphetamine (“Ecstasy”); marijuana; or hashish. In recent years, body packing has become the preferred mode of drug smuggling over conventional smuggling because of increased border security following the September 11, 2001, terrorist attacks.<sup>1</sup>

Drug packets can be made by hand or produced mechanically. Each packet is usually wrapped in multiple layers with condoms, cellophane, latex, or balloons. Figure 2 shows mechanically produced packets transported by a body packer. Handmade packets vary in size and shape, whereas machine-made packets are of uniform size and oval in shape with smooth edges. These packets may be concealed within the body by swallowing or by insertion into the vagina or rectum. Swallowed packets are small (about 2 cm) and usually

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spherical. Rectally inserted packets are 4 to 6 cm long.<sup>2</sup> Body packers use constipating agents, such as loperamide, after swallowing or inserting the illicit drugs. Once they reach their destination, body packers use laxatives, cathartics, or enemas to help pass packets rectally. Body packers usually carry 50 to 100 packets (about 1 kg total); most body packers are young men, but children and pregnant women have also been reported to carry drugs.<sup>1</sup>

**Body packers** receive compensation usually in the form of money (\$1,500 to \$5,000) or safe passage into a foreign country. In addition, body packers may have to provide collateral, such as family members or personal property, to ensure the packer's cooperation until the packets have reached their intended destination.<sup>1</sup> Body packers are sometimes forced to seek medical attention because of intestinal obstruction, fear of rupture, or drug intoxication. In some cases, customs officers request medical assistance.<sup>3</sup>

**Making the diagnosis** A detailed history should be obtained from the body packer, including information about the drug packets. At times, the history is unreliable or difficult to obtain because of drug-induced toxicity. Although the physical examination has limited value for diagnosis, one should look for signs and symptoms of drug intoxication and intestinal perforation



**FIGURE 2.** Drug packets recovered from a body packer

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with signs of drug intoxication after recent ground, sea, or air travel.<sup>1,3</sup>

Radiologic imaging is the preferred method for diagnosing and confirming body packing. The initial and best imaging modality is plain abdominal radiography. Obtaining radiographs with the patient supine and upright will visualize most concealed packages. A chest radiograph will reveal packets in the stomach. Abdominal ultrasonography can be used as an initial imaging test but is generally considered less informa-

only antidote for cocaine is activated charcoal, patients can be treated with IV diazepam and/or IV propranolol, if necessary, to suppress sympathetic overactivity. Conservative management also includes whole-bowel irrigation with osmotic laxatives, such as polyethylene glycol with electrolyte preparations. Whole-bowel irrigation causes gentle and spontaneous evacuation of the GI tract. Lactulose can also be safely used to expel the packets. However, stimulant laxatives (senna-containing products or bisacodyl) should be avoided, as they may precipitate intestinal obstruction. Also, oil-based laxatives should be used with caution, as they reduce the tensile strength of latex and may lead to rupture of the packets. After conservative management, a confirmative imaging study, such as a plain abdominal radiograph or CT scan, should be done to make sure all the drug packets have been removed from the system. Surgery is indicated if there is evidence of intestinal perforation or obstruction, rupture of the packets, or difficulty in their spontaneous passage. Other procedures, such as endoscopy, are useful in confirming the presence of packets in the stomach, but removal may be hampered by rupture or even death of the patient.<sup>1,3</sup> **JAAPA**

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#### DRUGS MENTIONED

Bisacodyl	Naloxone
Diazepam	Polyethylene glycol with electrolytes
Lactulose	Propranolol
Loperamide (Imodium, generics)	Senna

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“Oil-based laxatives should be used cautiously, as they reduce the tensile strength of latex and may lead to rupture of the packets.”

while also performing rectal and vaginal examinations for any concealed packages. A urine toxicology screen should be obtained. In most drug-smuggling cases, the diagnosis is clear prior to arrival in the ED. Customs officers are specially trained to identify potential drug packers, who may exhibit distinct characteristics in their appearance and behavior. Thus, body packing should be suspected in anyone

than plain radiographs. Abdominal CT and barium-enhanced radiography can also be used in highly suspicious cases; MRI is of limited use.<sup>1,3</sup>

**Management** If surgery is not an option, patients should be admitted to the ICU for close observation. Conservative management is recommended initially. Patients with heroin intoxication should receive naloxone to reverse any side effects. Although the