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Heroin Body Packing: Three Fatal Cases of Intestinal Perforation

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ABSTRACT: Death from heroin body packing has been well described in the forensic literature. Most fatalities are due to drug leakage and consequent acute heroin toxicity. Recently, drug traffickers have become more sophisticated in their packaging, and the risk of rupture of drug packets is more remote. Though intestinal obstruction is a recognized risk of body packing, rarely has this resulted in death. We describe four cases of heroin body packing presenting to the Regional Medical Examiner Office in New Jersey. Death in three of these cases was due to intestinal obstruction, with resultant intestinal rupture and peritonitis. Toxicologic evaluation in these three cases was negative for opiates or other drugs of abuse. In one case, death was due to acute heroin toxicity, validated by toxicologic analysis. We briefly discuss the differing drug packaging found in these four cases and the ramifications of packaging as it relates to intestinal obstruction.

KEYWORDS: forensic science, forensic pathology, heroin body packer, mule, intestinal obstruction, intestinal perforation, drug smuggling, death

Drug smuggling continues to be a lucrative source of revenue for South American drug cartels and body packers, used for drug smuggling, have been well described in the literature (1,2). Most reported cases have involved package deterioration and rupture, with leakage of drugs into the gastrointestinal tract leading to death from acute drug toxicity (3,4). In the past, cocaine was the drug most frequently transported by body packers with resultant fatal consequence (1). Recently, heroin has become the drug of choice for illicit transport and reported fatalities are increasing (1,5). There have been frequent clinical reports of surgically treated intestinal obstruction secondary to blockage by drug packets (5–7). Wetli et al. have reported a single case of death from peritonitis due to a small bowel obstruction by heroin packets (2). Our report describes four deaths of heroin body packers. Three of these deaths were due to intestinal obstruction and intestinal rupture, and one was due to package breakdown and acute heroin toxicity. The packaging found in the patients with intestinal obstruction and rup-

ture differed from that found in the patient with package deterioration and acute heroin toxicity. We compare the packaging found in these cases and briefly discuss the risks of intestinal obstruction and rupture with different packages.

Patients and Methods

In 1998 the Regional Medical Examiner Office investigated four deaths in heroin body packers. The investigative reports, autopsy reports, and autopsy pictures in these cases were reviewed. Drug screening was routinely performed on postmortem urine or blood using fluorescence polarization immunoassay. Gas chromatography/mass spectrometry was used to quantitate free morphine and other drugs in blood and fluids. 6-monoacetyl morphine was routinely tested for and the results were reported quantitatively.

Case Reports

Case 1

A 32-year-old black man collapsed in an airport terminal after arriving from Europe. He was taken to a local hospital in a responsive but lethargic state. Chest and abdominal radiography were negative for disease or foreign material, as was a computed tomographic scan of the head (Fig. 1). Screening urine toxicology was positive for opiates. His condition deteriorated and he expired.

Postmortem examination revealed 115 mL of brown liquid in the stomach along with 31 ovoid, deformable drug packets in various stages of breakdown. These packets contained soft, oblong, white powder pellets, wrapped in layers of clear cellophane-like material. There was free, congealed, white powder within the stomach lumen, as well as strips of the cellophane-like material (Fig. 4). The drugs and wrappings weighed 338 g.

The postmortem blood sample contained 20.6 mg/L morphine, 1.97 mg/L codeine, and 6-MAM was detected. There was 673 mg/kg of morphine, 48.1 mg/kg of codeine, and 3110 mg/kg 6-MAM in the stomach contents. Pre and postmortem urine screens were positive for morphine, codeine, and 6-MAM.

Case 2

An unidentified Hispanic man was found dead in a parking lot in an industrial area of a New Jersey city. He was appropriately dressed for the season but had no personal property or identification.

Postmortem examination revealed coffee ground material over the face. Well-healed surgical scars were present in the right upper hemithorax and midline of the abdomen. The peritoneal cavity

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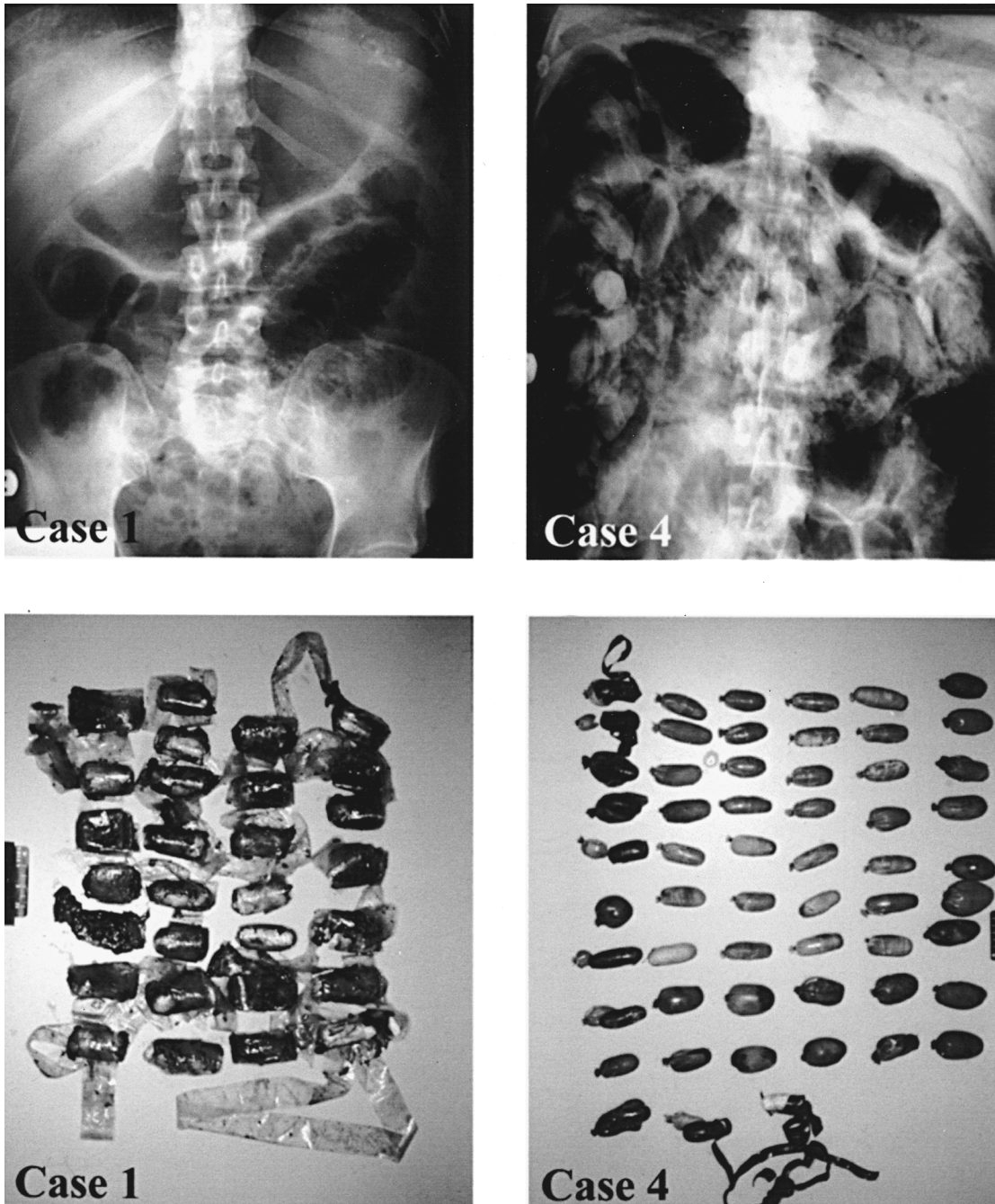


FIG. 1—The top panels illustrate abdominal radiographs in Cases 1 and 4. In Case 1, there is dilatation of small bowel loops, a large stomach air lucency and no visible drug packets. In Case 4 multiple radio-opaque oblong drug pellets are visible within the gastrointestinal tract. The bottom panels illustrate the drug packets and pellets removed from the bodies of Cases 1 and 4.

contained 50 mL of turbid fluid. Fibrinous adhesions and fat necrosis was noted between the posterior wall of the juxta-pyloric portion of the stomach and the head of the pancreas. A peritonitis was evident on examination of the histologic sections (Fig. 3). Fifty intact oblong drug packets were present within the digestive tract, which weighed 538 g in aggregate. One was present in the mid-section of the esophagus, 19 were in the stomach mixed with coffee ground material, and 30 were in the small intestine from the duodenum to jejunum. Multiple packets were blocking the pylorus and a tear in the duodenum was noted leading to the peripancreatic

tissue. Some of the packets appeared inflated. The uninflated packets measured 4.5 cm × 1.9 cm (8.5 cm² area). One packet was opened and consisted of a compact, solid, hard, white, chalk-like pellet wrapped in several layers of plastic, plumbing tape, and latex (Fig. 4).

Postmortem toxicologic analysis failed to detect any drugs of abuse in the blood, bile or urine.

Incidentally, a corroded, fibrous tissue-encased bullet was recovered from the left hemi-pelvis in the obturator internus muscle.

Case 3

A 52-year-old Hispanic man visiting from South America complained of constipation; he vomited and suddenly collapsed in front of family. He was transported to a local hospital with CPR in progress but was pronounced dead enroute.

Postmortem radiography revealed dilated loops of small intestine but no evidence of foreign material. Unfortunately the study did not include visualization of the pelvic structures. Postmortem examination revealed 500 mL of purulent fluid within the peritoneal cavity. There were multiple dilated small bowel loops. A thick, purulent exudate with areas of hemorrhage was present over the entire intestinal tract and peritoneal surface. There was a 1-cm perforation on the anterior surface of the proximal rectum (Fig. 2). Two oblong drug packets were present within the rectum. These packets measured 4.6 cm × 1.6 cm (7.4 cm² area) and weighed 18.1 g in aggregate. One packet was opened and consisted of a compact, solid, hard, brown pellet covered by 4 layers of thin yellow latex and 1 layer of cellophane (Fig. 4).

Postmortem toxicologic analysis failed to detect any drugs of abuse in the blood, bile or stomach content.

Case 4

A 44-year-old African man returned from his native country and for eight days complained of abdominal pain and constipation,

which advanced to severe pain with profuse vomiting. He was taken to a local hospital and was dead on arrival.

An abdominal radiograph revealed numerous foreign bodies throughout the gastrointestinal tract (Fig. 1). Postmortem examination revealed foul smelling brown fluid emanating from the nose and mouth. There was a well-healed scar on the left upper quadrant of the abdomen. A thick purulent exudate with areas of hemorrhage was present over the entire intestinal tract and peritoneal surface. The small bowel loops were markedly distended. A perforation was present in the distal jejunum with an overlying fibrinous exudate. Fifty-seven oblong drug packets weighing 458 g in aggregate were removed from the intestinal system. The location of these packets extended from the pylorus to the rectum. Some of the packets were inflated and had visible fluid levels. The uninflated packets measured 3.8 cm × 1.9 cm (7.2 cm² area). One packet was opened and consisted of a compact, hard, solid, white pellet covered in clear plastic, black electrical tape, and latex wrapping (Fig. 4).

Postmortem toxicologic analysis failed to detect any drugs of abuse in blood, bile or stomach content.

Discussion

Death from acute heroin toxicity is a major risk in heroin body packers (2). The illicitly transported drug enters the circulation by

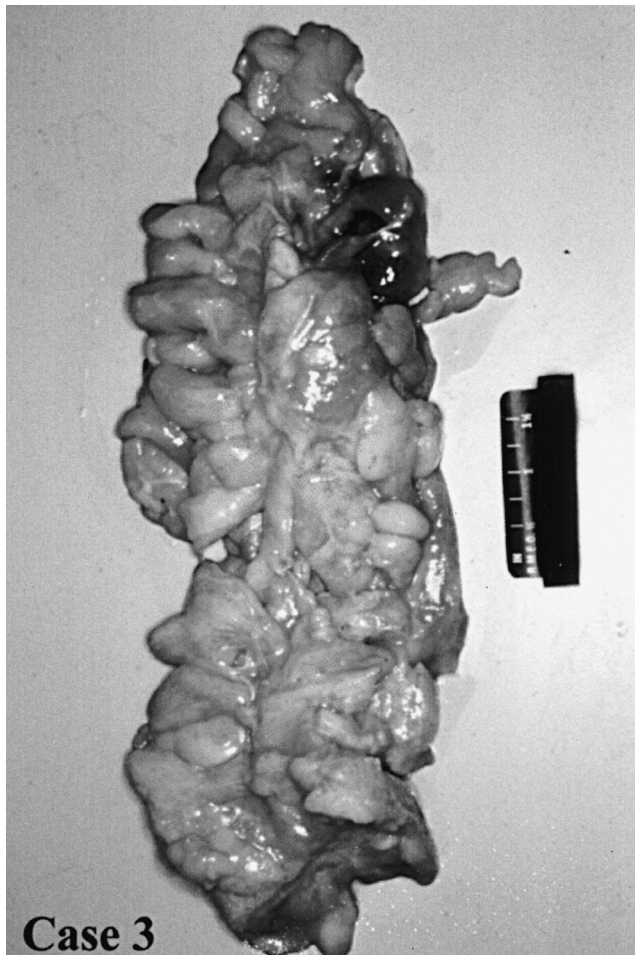


FIG. 2—Acute rupture of the proximal rectum is illustrated in Case 3.

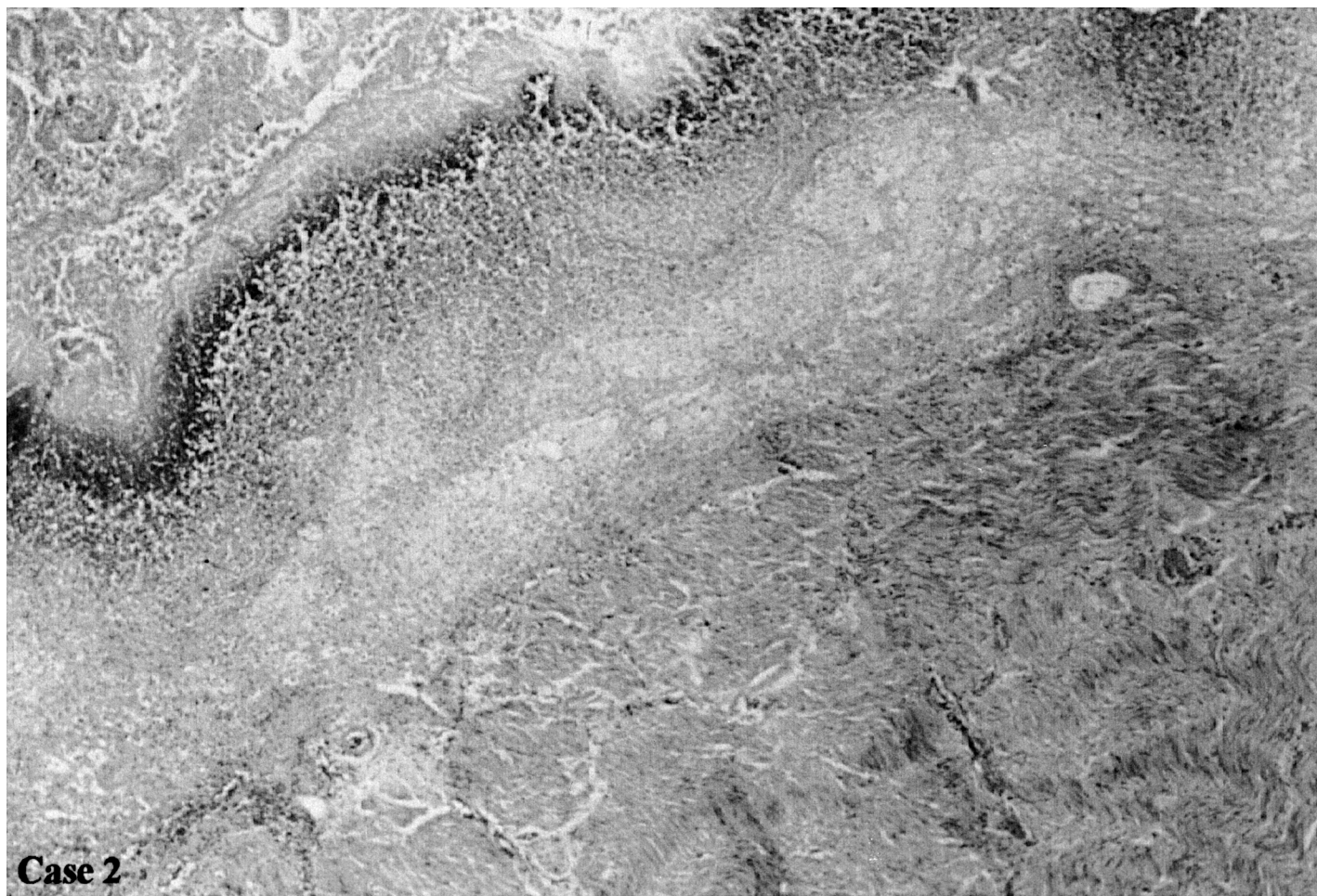


FIG. 3—Photomicrograph of section of duodenum illustrating peritonitis in Case 2.

one of two mechanisms, package breakdown or leakage of drug through the latex packaging (3). Intestinal obstruction has recently become a recognized risk of body packing, due to the more sophisticated packaging (5). This has usually been treated with surgical intervention (6). Though there have been many reported deaths of heroin body packers due to toxicity, rarely have deaths due to intestinal obstruction and perforation been reported (2).

In this series of four patients, three were known to have traveled to the United States from Europe, South America, or Africa, and one patient's origin remains unknown. Of the patients with bowel perforation two had prodromal complaints of abdominal pain and vomiting before sudden collapse, and one was found abandoned in a vacant lot. The illicit drug packaging in these patients was similar, consisting of compressed drug covered with multiple layers. The patient who succumbed to heroin toxicity collapsed at the airport on arrival in the USA, and was carrying drug wrapped in multiple layers of only cellophane.

McCarron and Wood first classified drug packaging in cocaine body packer's (8). This was later modified and three types were described (9). Type 1 is round in shape, contains loose powder, covered with two to four layers of rubber or latex, and is susceptible to leakage or rupture; Type 2 contains compressed powder, is covered in multiple layers of tubular latex, and is highly stable and possibly machine generated; Type 3 contains compressed powder and has aluminum foil incorporated into the latex layers (9).

The patient in our report who died as a result of heroin toxicity had what was likely originally compressed drug. The cellophane layers in this package type may have been used to reduce its visibility on radiography, unfortunately, these layers did not successfully guard against package deterioration. The three patients who suffered from intestinal rupture had variations of type 2 or 3 packaging. The multiple layers consisted of latex, cellophane and black electrical tape or plumbing tape.

The package or pellet size may predispose to intestinal obstruction and consequent rupture. Our patients carried oblong drug pellets ranging from 9 to 11 g in weight and 7.4 cm² to 8.5 cm² in area. Two or more of these large pellets, if lodged simultaneously in the intestine at susceptible areas, may obstruct the lumen leading to proximal distension and perforation. The susceptible areas include those intestinal sites with the smallest luminal diameters, including the pylorus, ileocecal valve (1.0 cm to 1.2 cm in diameter), sigmoid colon (2.5 cm in diameter), and rectum. Patients with previous surgery and peritoneal adhesions may be at greater risk for obstruction and perforation. Perforation may also occur as a result of intestinal blockage and resultant pressure erosion of the intestinal wall.

The heroin samples, heroin manufacturing process, differing package sizes, packaging, and packaging processes in these cases may be unique to geographic regions, and thus may prove valuable in identifying divergent worldwide drug traffickers (10). Presently,

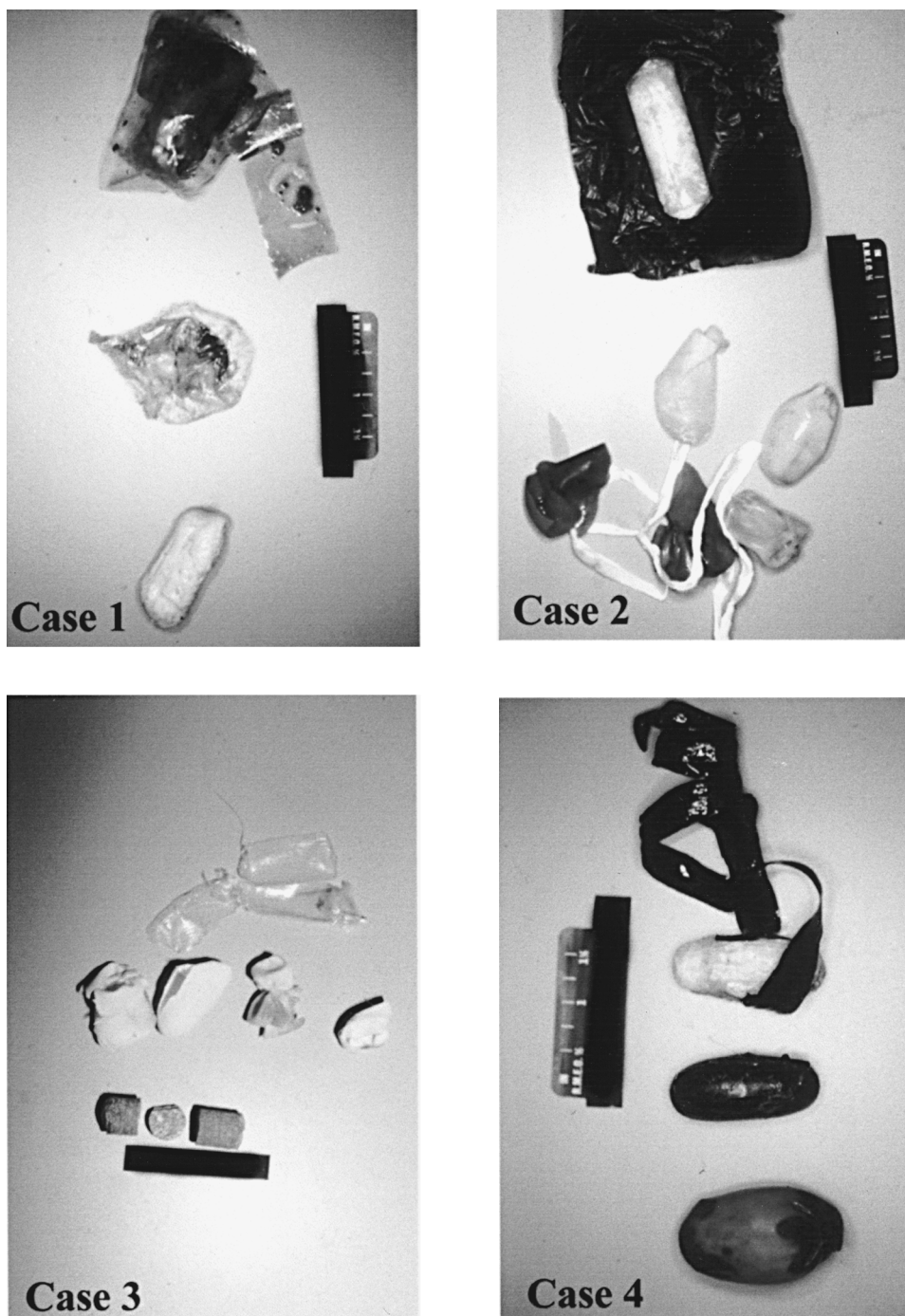


FIG. 4—Drug packaging in Cases 1–4 are illustrated.

the Drug Enforcement Administration (DEA) can track heroin from divergent worldwide sources using a type of chemical signature analysis (10). Heroin smuggling is a profitable business. One kilogram of heroin can sell in the USA for wholesale prices of \$90,000 to \$250,000 (10). “Street” retail prices range from \$10.00 to \$50.00 for a quantity of 10 to 50 mg (10). A mule carrying 500 g of heroin therefore delivers drug with a “street” value of up to 2.5 million dollars, and is paid on average \$5000 per trip (10). In fact, body packers can, and have, smuggled up to 2 kg of drug per trip (10). Unfortunately, because the USA is the most lucrative whole-

sale and retail market for heroin in the world, the problem of heroin body packing may remain with us.

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