

Original Article

DOI: 10.4274/globecc.galenos.2023.83803

# Investigation of Radiological Imaging, Treatment and Package Contents of Body Packers Brought to the Emergency Department in Our Region

Delice et al. Investigation of Body Packers

Orhan Delice<sup>1</sup>, Ali Kaan Sanal<sup>2</sup>, Enes Yıldırım<sup>1</sup>

<sup>1</sup>Erzurum City Hospital, Department of Emergency Medicine, Erzurum, Turkey

<sup>2</sup>Erzurum City Hospital, Department of General Surgery, Erzurum, Turkey

Orhan Delice, Erzurum City Hospital, Department of Emergency Medicine, Erzurum, Turkey

0000-0003-1629-4245

[orhandelice@gmail.com](mailto:orhandelice@gmail.com)

05301447925

22.09.2023

14.10.2023

19.01.2024

## Abstract

**Objective:** The illegal transportation of drugs in body cavities has recently become a method used in international drug trafficking. We wanted to study the demographic characteristics, the types and quantities of substances carried. Besides we wanted to present the characteristics of a case of opioid intoxication in our region.

**Materials And Methods:** Between January 2020 and July 2023, we retrospectively reviewed the patients who were brought to a third level emergency department by law enforcement officers with the suspicion of carrying drugs in their bodies. The characteristics and quantity of the substances they were carrying were obtained from the Department of Narcotics.

**Results:** Twenty-two patients brought to our emergency department were found to have narcotics in their bodies. 5 were female and 17 were male. The mean age was 31.4 years. The majority (68%) of substances carried were opioids. The packages were surgically removed in the person who developed opioid toxicity, while laxatives were used in the others. It was found that the broken package was made by simple bagging without the use of a condom.

**Conclusion:** Conclusion: In our region, all the people carrying drugs in their bodies were young. The substance carried was mostly opioids rather than cocaine. All smugglers used the wheeled transportation.

**Keywords:** Body packers, Body Stuffers, Drug mules

## **Introduction**

Drug use is increasing all over the world and this brings related health problems with it. So that the death rate of drug overdose in the USA increased 3-fold between 1999 and 2014 [1]. Increasing consumption rates have created an increased need to access these substances. With the developing technology, the drugs are detected at border crossings and airports forcing smugglers to develop a number of different methods. One of these is the body packing method [2].

Although illegal substances are transported to various parts of the world by land, air and sea, concealment through the body has become a frequently used method for transporting small amounts of substances. The most commonly used method here is oral swallowing [3]. To a lesser extent, vaginal and rectal ingestions have also been reported.

People who carry drugs in their body cavities in this way are called "body packers" or "drug mules". While body pushers carry illegal substances in their rectum or vagina, people called body stuffers swallow poorly packaged or unpackaged drugs for fear of being caught [4].

These people used to swallow packages wrapped in materials that had a high risk of tearing, and therefore the risk of toxicity was higher. They now carry large quantities of substances, in packages made of strong materials (condoms, latex, etc.). Despite this carriage rate, the complication rate is thought to be below 5% [5].

When searched in the literature, it is seen that these substances are generally cocaine and heroin [6, 7]. In addition to the legal aspect of this situation, these people are also at high risk in terms of health [8]. So that, these people may be brought to the emergency department asymptotically, or they may have complicated clinical presentations that may progress to mechanical intestinal obstruction or toxidrome of the transported substance. Both intestinal obstruction and acute poisoning due to body packing are called "Body Packers Syndrome" (BPS). Therefore, the management of these patients requires a multidisciplinary approach that requires the consensus of the emergency physician, radiologist, general surgeon and toxicologist.

In this study, we aimed to present the characteristics of 22 cases, who were brought to the emergency department of Erzurum City Hospital with the suspicion of carrying drug package in their body. One had complicated opioid intoxication and the others were asymptomatic.

## **Materials and Methods**

After obtaining the approval of the local ethics committee (Erzurum Faculty of Medicine Scientific Research Ethics Committee 2023/04-45), cases carrying or suspected of carrying drugs in their bodies brought to the emergency department of Erzurum City Hospital between January 2020 and July 2023, were retrospectively analyzed through hospital information management system.

We retrospectively reviewed the patients who were brought by law enforcement officers to a third-level emergency department between January 2020 and July 2023 with the suspicion of carrying drugs in their bodies.

Electronic medical records, imaging files, clinical, laboratory, radiological data, consultation notes and applied treatments of the cases were accessed from the hospital archive. Demographic characteristics (age, gender, nationality) and vital signs of all cases were recorded.

Photographs of Case 1 taken during surgery were obtained from the general surgeon.

Radiological images were obtained from the hospital information management system. Again, the number of packages carried by these people, package features, types and quantities of substances were obtained with permission from the Erzurum Police Department Narcotics Office.

Since the data of 21 patients were obtained from patient files, informed consent form was not used. Informed consent was obtained from the patient belonging to Case 1.

## **Statistical Analysis**

Statistical analysis was done using version 21 of SPSS software with a special focus on the

description of the patients. Qualitative variables were expressed as percent (%); in addition, quantitative variables were shown as mean  $\pm$  standard deviation (SD).

## Results

All cases were of Iranian nationality and arrived by land via Iran. The cases consisted of a total of 22 people, 17 males and 5 females. One of the cases was a child and reported receiving suspicious packages rectally (body pushers). The oldest age was 56 years and the youngest age was 17 years. The mean age was  $31.4 \pm 8.7$  years. Demographic data and vital signs of the cases are shown in Table-1.

While opioid group was found in 15 cases (68%), Cannabis in 3 cases (14%), Methamphetamine in 2 cases (9%), Methamphetamine and Cannabis were seen in 1 case and Methamphetamine and opioid in 1 case. Package characteristics and contents of the cases are shown in Table-2.

Opioid intoxication was thought for in just one case due to the acute change in consciousness, shallow breathing, and bilateral miotic pupils. In Figure 1, packages are shown in abdominal CT axial, coronal and sagittal sections. The colon material is shown in Figure 2 and the extracted capsules are shown in Figure 3. The drug panel sent in the urine resulted as Codeine: 4194ng/ml ( $<1000$ ), Methadone: 4436 ng/ml ( $<300$ ).

In the other 21 cases, abdominal x-ray imaging revealed packages so that abdominal CT was not requested. As seen in Figure 4, when examined on X-ray, many ellipsoidal materials surrounded by a radiolucent ring were observed.

Patient with toxidrome was the only case an abdominal CT was requested. The packages are shown in Figure 1 on abdominal CT in axial, sagittal and coronal sections. Our criteria when discharging the cases was to prove there were no remaining packs. All patients were discharged after it was proved by imaging methods that there were no remaining packages.

## Discussion

Opioid poisoning is increasing all over the world, and related morbidity and mortality rates are increasing [9]. Especially illegal drug trade is an important reason for this. Body packers, present with different clinical presentations. These people usually do not go to the emergency department voluntarily. Police brings the substance carriers they detect to the emergency department for legal procedures and safe removal of the packages. In our cases the situation was the same, all the patients with only one exception were brought to the emergency department by police. It was observed that one of our cases was brought to our emergency department by the emergency medical services when a change in consciousness was noticed on the bus in which he was riding as a passenger.

In retrospect, the first case of body packing was reported in Canada in 1973, presenting with mechanical bowel obstruction after swallowing a single poppy-filled condom [10]. Since then, a wide variety of transportation methods have emerged and they have begun to be seen frequently at airports and city crossings. All of our cases were detected during road transportation.

People who carry substances in their bodies try to carry products with the highest financial value because the amount they can carry is limited [11]. For this reason, cocaine (70-90%) is most frequently transported, followed by heroin [12]. Other substances are less common because they have lower commercial value. Contrary to the literature, in the cases coming to our hospital, mostly opioid group was found in capsules instead of cocaine. It is understood that package carriers prefer opioids in smuggling cases between Iran and Erzurum.

Previously, drugs wrapped in simple materials such as aluminum foil appeared more radiopaque and were easily broken down, resulting in systemic toxicity. Nowadays, we see that the use of latex products and especially condoms in packaging has become widespread. This is because they are less radiopaque and provide better protection to the illicit substance, thus reducing the risk of

toxicity [13]. In our cases, it was observed that the packages of the patients who developed toxicity were made with simple nylon bags. Two packages were found to be deformed. Condoms were used in the packages of other cases. No evidence of toxicity was found in any of them. All of our cases in which condoms were used in packaging were visible on abdominal X-ray imaging.

The first option for imaging this patient group in the emergency department is abdominal x-ray [14]. Uniform ellipsoid-rectangular substances are arranged along the intestine, creating the so-called 'tictac' sign. Sometimes air gets trapped between the swallowed substance and the capsule, this is called 'double condom sign'. Radiological findings are shown in Figure 5. In cases where abdominal X-ray is inadequate or in doubt, non-contrast CT imaging is the gold standard diagnostic method [11]. Abdominal CT and abdominal x-ray images of our cases are shown in figure 1 and figure 4.

Surgical treatment is extremely rare in body packer cases. The main indications for emergency surgery are intestinal obstruction and suspected bundle rupture. Packs that have remained inside the body for a long time are also candidates for surgical treatment because they are more likely to cause complications [15,16]. In case 1 of our cases, two packages were ruptured and opioid intoxication developed and the packages were removed surgically.

### **Conclusion**

People brought to the emergency department with suspected body packaging should first have an abdominal x-ray. In cases with suspected body packaging, if x-ray is insufficient, abdominal computed tomography (CT) should be evaluated.

People who carry possible packages on their bodies should be treated early, and precautions should be taken to completely remove them from the body due to the risk of toxicity. Conscious suspects should be questioned about how the packages were made, what they were packaged with, and the package contents.

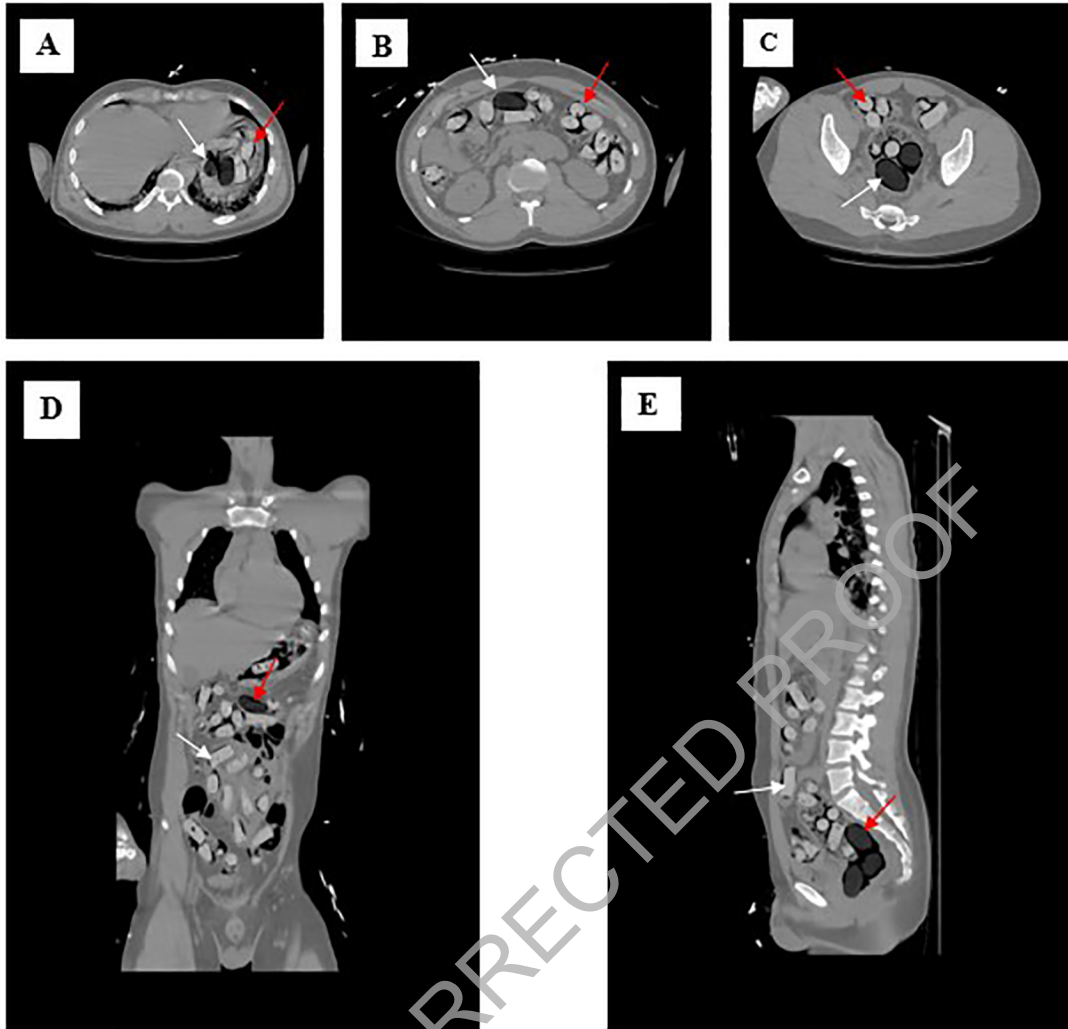
Again, the physician who encounters such cases in the emergency department should know that these patients should be managed multidisciplinary and should not delay consultations of the relevant specialty.

It should be kept in mind that suspicious persons brought to the emergency department by law enforcement officers may be body packers, even if there are no signs of toxicity, and they should be evaluated with abdominal x-ray. In unexplained clinical presentations, as in Case 1, intoxications should also be among the preliminary diagnoses of the emergency physician.

### **Study Limitations**

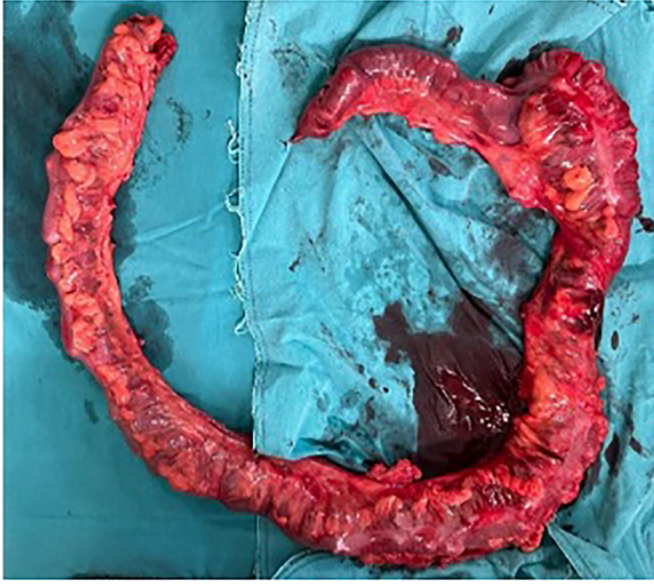
Photographs of the packages extracted from all cases could not be obtained. Except for one of the packages that could be viewed, the others were wrapped in condoms. In the case where the package was torn apart, it was determined that it was packaged with simple bagging.

**Acknowledgments:** We would like to thank Erzurum Provincial Police Department Narcotics Branch Directorate for their contributions.



\*Figure 1

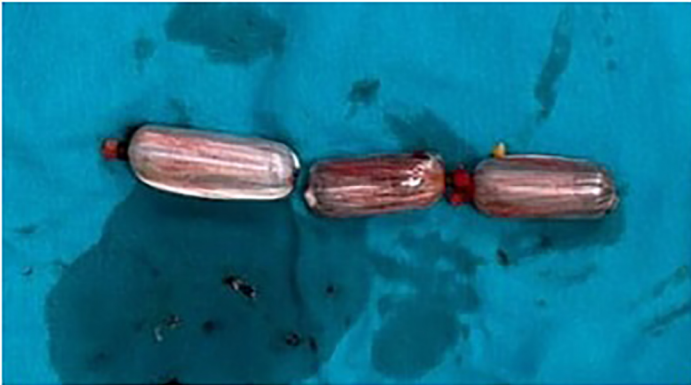
**Figure 1:** Abdominal CT images of Case 1 in axial (A, B and C), coronal (D) and sagittal (E) sections. (Red arrow: Capsules containing Heroin, White arrow: Capsules containing Opium poppy).



**\*Figure 2**

**Figure 2:** Large intestine tissue of Case 1

UNCORRECTED PROOF



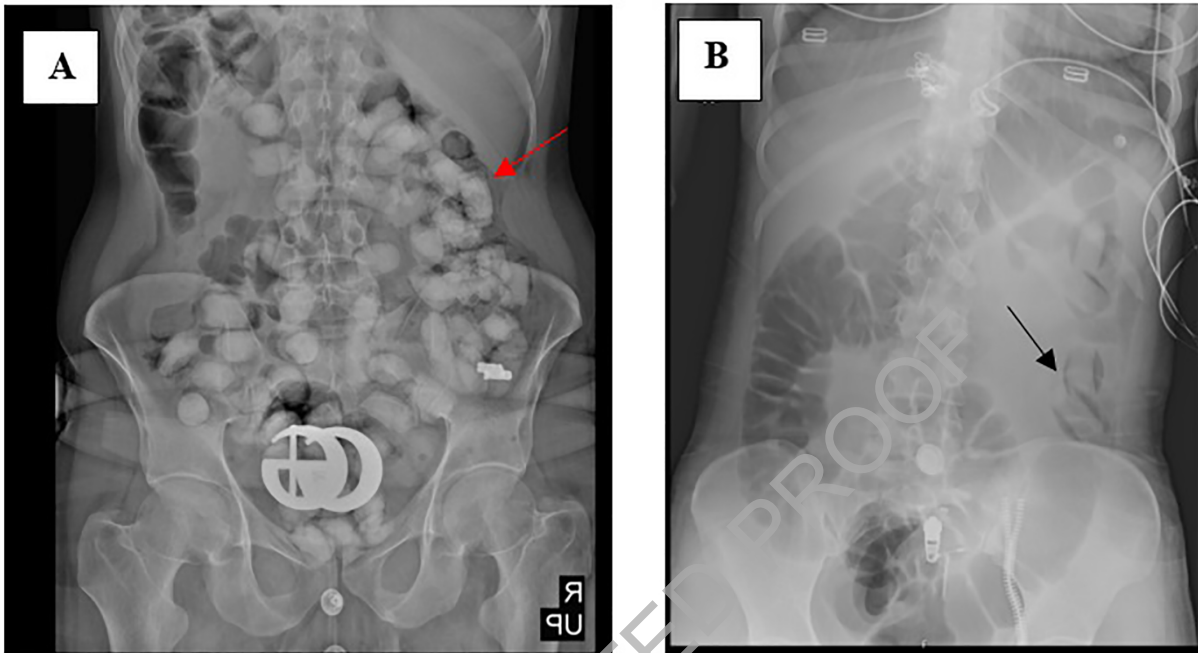
\*Figure 3

Figure 3: Capsule materials of Case 1



\*Figure 4:

Figure 4: X-ray images of cases carrying drug packages in their body: Case 2 (A), case 7 (B) and case 9 (C). Black arrow: Shows the packages



\*Figure 5

**Figure 5:** Shows the radiological findings. Case 10 (A) 'double condom sign', Case 3 (B) 'tic tac' sign



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Cases	Age	Sex	Hospital Stay (day)	Blood Pressure (mm/Hg)	Fever(°C)	Heart Rate(bp m)	SPO2 (%)
1	23	Male	10	113/74	36.4	118	85
2	26	Male	1	118/76	36.8	87	98
3	25	Female	1	123/78	36.7	75	96
4	25	Male	6	133/74	36.9	110	99
5	25	Male	8	126/76	36.5	76	97
6	40	Male	5	137/87	36.7	98	96
7	29	Male	4	112/69	36.6	85	98
8	37	Male	3	126/85	36.4	67	95
9	17	Male	3	112/64	36.6	93	97
10	36	Male	1	118/76	36.8	87	95
11	56	Male	4	137/78	36.9	64	94
12	29	Male	2	116/76	36.8	83	98
13	25	Female	2	125/81	36.6	72	99
14	38	Female	1	134/76	36.7	83	99
15	41	Male	1	115/73	37.1	86	97
16	35	Male	1	123/76	36.9	79	98
17	27	Female	2	126/83	37.2	83	98
18	41	Male	3	135/76	36.6	69	99
19	25	Male	4	122/87	36.5	77	99
20	29	Male	4	131/76	36.5	87	99
21	27	Male	1	107/76	36.7	76	98
22	36	Female	2	127/76	36.9	94	97

<b>Table 2. Package characteristics and contents of the cases</b>		
Cases	Type of Packages	Weight of packages(g)
1	7 Heroin 104 Opium Poppy	111,7 g Heroin 1061.28 g Opium Poppy
2	2 Heroin 1 Opium Poppy	8.07 g Opium Poppy 39.74 g Heroin
3	32 Opium Poppy	295,21 gr Opium Poppy
4	161 Opium Poppy	1120 g Opium Poppy
5	195 Opium Poppy	1403 g Opium Poppy
6	117 Opium Poppy	1908.1 g Opium Poppy 209.93 g Heroin
7	46 Opium Poppy	560 g Opium Poppy
8	30 Opium Poppy 41 Heroin	446 g Opium Poppy 490 g Heroin
9	63 Opium Poppy	673 g Opium Poppy
10	31 Marijuana	266 g Marijuana
11	25 Methamphetamine 7 Marijuana	703 g Methamphetamine 237 g Marijuana
12	82 Opium Poppy	920 g Opium Poppy
13	83 Opium Poppy	860 g Opium Poppy
14	15 Marijuana	123 g Marijuana
15	6 Heroin 2 Methamphetamine	175 g Heroin 2 g Methamphetamine
16	11 Methamphetamine	325 g Methamphetamine
17	12 Methamphetamine	329 g Methamphetamine
18	19 Heroin	158 g Heroin
19	45 Heroin	400 g Heroin
20	62 Opium Poppy 1 Heroin	838 g Opium Poppy 1 g Heroin
21	43 Opium Poppy	438 g Opium Poppy
22	28 Marijuana	210 g Marijuana