

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

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Abstract

Objective: Illegal transportation of drugs in body cavities has recently become a method used in international drug trafficking. We wanted to study the demographic characteristics and types and quantities of substances carried. In addition, 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 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 carried were obtained from the department of narcotics.

Results: Twenty-two cases brought to our emergency department were found to have narcotics in their bodies. The cases comprised 22 people, 17 males and 5 females. The mean age was 31.4±8.7 years. The majority (68%) of substances carried were opioids. The packages were surgically removed in the person who developed opioid toxicity, whereas 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: 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 wheeled transportation.

Keywords: Opioid intoxication, body packers, drug mules

Introduction

Drug use is increasing all over the world, and this brings related health problems. Thus, the death rate of drug overdose in the United States of America increased 3-fold between 1999 and 2014 [1]. Increasing consumption rates have created an increased need to access these substances. With the development of technology, drugs are detected at border crossings and airports, forcing smugglers to develop many 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 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, 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; therefore, the risk of toxicity



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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 considered 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]. Therefore, 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”. 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 patients who were brought to the emergency department of Erzurum City Hospital with the suspicion of carrying a drug package in their body. One patient 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, decision number: 45, date: 16.08.2023), 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 using the hospital information management system.

We retrospectively reviewed 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, and 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 patients 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. The number of packages carried by these people, package features, and types and quantities of substances were obtained with permission from the Erzurum Police Department Narcotics Office.

Because the data of 21 patients were obtained from patient files, an informed consent form was not used. Informed consent was obtained from the patient in Case 1.

Statistical Analysis

Statistical analysis was performed using version 21 of SPSS software with a special focus on the description of the patients. Qualitative variables were expressed as percentage (%); in addition, quantitative variables were shown as mean \pm standard deviation.

Results

All cases were of Iranian nationality and arrived by land via Iran. The cases comprised 22 people, 17 males and 5 females. A case was a child who 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 ± 8.7 years. Demographic data and vital signs of the patients are shown in Table 1.

The 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. The package characteristics and contents of the cases are shown in Table 2.

Opioid intoxication was thought to occur in just one case because of the acute change in consciousness, shallow breathing, and bilateral miotic pupils. In Figure 1, packages are shown in abdominal computed tomography (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: 4194 ng/ml (<1000), Methadone: 4436 ng/mL (<300).

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

Patient with toxidrome was the only case in which 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 were to prove that 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 worldwide, and related morbidity and mortality rates are increasing [9]. In particular, 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. The police bring 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;

Table 1. Demographic features and vital signs of the cases

Cases	Age	Sex	Hospital stay (day)	Blood pressure (mm/Hg)	Fever (°C)	Heart rate (bpm)	SPO ₂ (%)
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

SPO₂: Oxygen saturation, bpm: Beats per minute

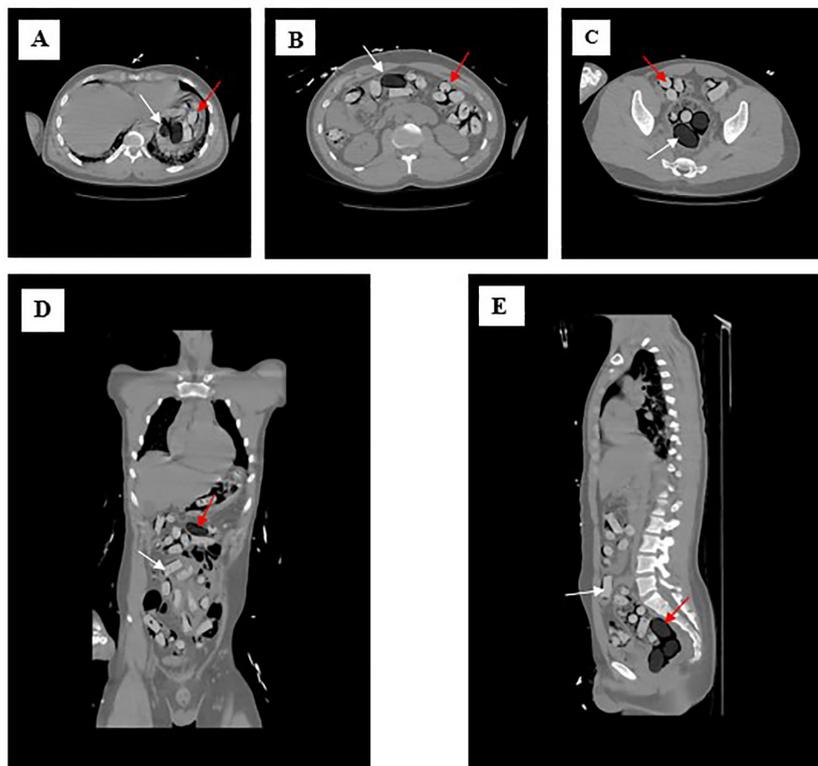


Figure 1. Abdominal computed tomography images of case 1 in axial (A, B and C), coronal (D), and sagittal (E) sections (red arrow: capsules containing heroin, white arrow: capsules containing opium poppy)

all patients, with only one exception, were brought to the emergency department by the police. It was observed that one of our cases was brought to our emergency department by 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 are frequently seen 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 a lower commercial value. Contrary to the literature, in the

cases coming to our hospital, mostly opioid group was found in capsules instead of cocaine. Package prefer opioids in smuggling cases between Iran and Erzurum.

Previously, drugs wrapped in simple materials such as aluminum foil appeared more radiopaque and easily broken down, resulting in systemic toxicity. Nowadays, we see that the use of latex products, 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 deformed. Condoms were used in the packages of other cases. No evidence of toxicity was found in any of the samples. All of our cases in which condoms were used in packaging were visible on abdominal X-ray imaging.

Table 2. Package characteristics and contents of the cases

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



Figure 2. Large intestine tissue of Case 1



Figure 3. Capsule materials of Case 1

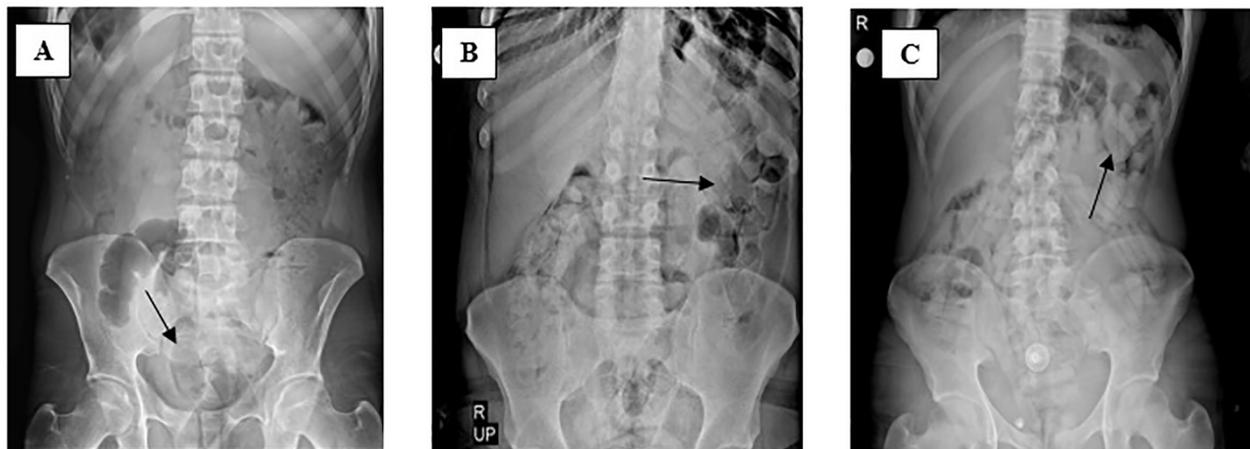


Figure 4. X-ray images of cases carrying drug packages in their bodies: Case 2 (A), Case 7 (B), and Case 9 (C) (black arrow: Shows packages)

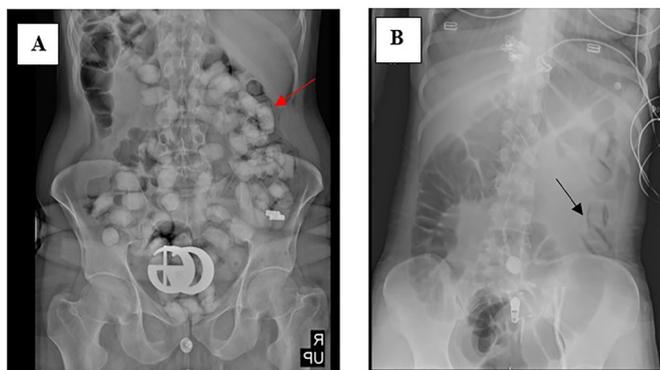


Figure 5. Shows the radiological findings. Case 10 (A) “double condom sign”, Case 3 (B) “tic tac” sign

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, which is called the “double condom sign”. The 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, two packages were ruptured and opioid intoxication developed, and the packages were surgically removed.

Study Limitations

Photographs of the packages extracted from all cases could not be obtained. Except for a package 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.

Conclusion

People brought to the emergency department with suspected body packaging should first undergo an abdominal X-ray. In cases with suspected body packaging, if X-ray is insufficient, abdominal CT should be performed.

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

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 by abdominal X-ray. In unexplained clinical presentations, as in Case 1, intoxication should also be among the preliminary diagnoses of the emergency physician.

Acknowledgments

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Ethics

Ethics Committee Approval: The study was initiated after ethical approval was obtained from the Erzurum Faculty of Medicine Scientific Research Ethics Committee (decision number: 45, date: 16.08.2023).

Informed Consent: Because the data of 21 patients were obtained from patient files, an informed consent form was not used. Informed consent was obtained from the patient in Case 1.

Authorship Contributions

Surgical and Medical Practices: O.D., A.K.Ş., E.Y., Concept: O.D., Design: E.Y., Data Collection or Processing: E.Y., Analysis or Interpretation: O.D., Literature Search: O.D., Writing: O.D.

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