CASE REPORT

DOI: 10.4274/globecc.galenos.2023.70783
Glob Emerg Crit Care 2023;2(3):128-131

A Fatal Case of Opioid Body Packer Syndrome Presented with Seizures

İbrahim Sarbay[1], Ayşe Çağla Şahin[2], Attila Beştemir[3]

[1]Keşan State Hospital, Clinic of Emergency Medicine, Edirne, Turkey
[2]University of Health Sciences Turkey, Bakırköy Dr. Sadi Konuk Training and Research Hospital, Clinic of Emergency Medicine, İstanbul, Turkey
[3]University of Health Sciences Turkey, Ankara Etlik City Hospital, Clinic of Emergency Medicine, Ankara, Turkey

Abstract

"Body packing" involves concealing drugs filled in packets inside the body to traffic illicit drugs. Packets may leak and rupture, which may have drug-induced toxic effects. We present a case of a 25-year-old male patient brought to the emergency department because of a seizure during an international flight. He was diagnosed with status epilepticus, and tracheal intubation was performed; however, he had a cardiac arrest shortly after. Pinpoint pupils and unclear patient history led to naloxone administration. After successful cardiopulmonary resuscitation, the patient was examined using computed tomography, which revealed multiple foreign bodies in the distal bowels. Blood toxicology tests were positive for opiates and negative for heroin metabolites, amphetamine, cocaine, barbiturate, and benzodiazepine. An emergency colonoscopy was performed, and the patient remained in the intensive care unit for 17 days before he died of to complications of Body Packer syndrome. Early diagnosis and appropriate management of this rare but potentially fatal condition are vital to improve patient outcomes.

Keywords: Body packing, seizure, opioid, computed tomography

Introduction

It is estimated that 296 million people will use drugs in 2021, which means a 23% increase over the next 10 years. Cannabis was the leading drug, followed by opioids, amphetamines, cocaine, and ecstasy [1]. "Body packing" is concealing illicit drugs intracorporeally to avoid detection by law forces. It may be performed either by "body stuffing" or "body pushing" [2]. The difference between the two terms is the introduction path of drugs: body stuffers ingest packets of drugs, whereas body pushers insert packets in the rectum or vaginal cavity [3]. Cocaine, heroin, methamphetamine, and cannabinoids are the main drugs transported via body packing [2]. These drug couriers may be brought to the emergency department by law forces to be examined for medical confirmation of body packing and may not have any medical complaints. However, the presentation may not always be that simple, and patients may present with body Packer syndrome, which is a clinical diagnosis occurring due to the accidental opening of the packages inside the body or drug packages causing bowel obstruction [4]. Body Packer syndrome occurs in 5% of body packing patients, and the mortality rate may reach up to 56% [5]. Due to the high international demand for drugs and harsher international laws, drug traffickers actively search for new and less recognizable ways to distribute drugs, which makes it a challenge for emergency physicians to suspect and diagnose these cases [4,5].

Case Report

A 25-year-old male patient was brought to the emergency department because of a seizure that terminated spontaneously during an international flight. Since there was no relative present, a history of the patient could not be obtained. During the examination, the patient had a generalized tonic-clonic seizure that resolved with 5 mg intravenous diazepam. On physical examination, the patient appeared to be in a postictal state, his pupils were isochoric, and pupillary light reflex was present. The patient's vital signs were as follows: blood pressure, 115/65 mmHg; pulse rate, 140 beats/min; respiratory rate, 16

Address for Correspondence: İbrahim Sarbay, Keşan State Hospital, Clinic of Emergency Medicine, Edirne, Turkey
Phone: +90 505 788 03 94 **E-mail:** ibrahimsar@gmail.com **ORCID-ID:** orcid.org/0000-0001-8804-2501
Received: 18.11.2023 **Accepted:** 08.12.2023

beats/min; SpO_2, 90%, the temperature was 37.3 °C, and the finger stick blood glucose, 260 mg/dL. An electrocardiogram (ECG) was obtained and interpreted as sinus tachycardia. Supplemental oxygen was administered through a mask. Arterial blood gas, complete blood count, blood chemistry, cardiac marker enzymes, coagulopathy, urinalysis, and blood and urine toxicology tests were measured. 10 min later, the patient had another generalized tonic-clonic seizure, which resolved with 5 mg intravenous diazepam. Due to recurrent seizures without recovery and impending airway compromise, the patient was intubated, and tracheal rapid sequence intubation was performed. Vital signs were stable following intubation. Intravenous levetiracetam infusion was initiated.

Measurement of initial venous blood gas showed pH 7, $PaCO_2$ 63 mmHg, HCO_3 16.3 mmol/L, PaO_2 44 mmHg, glucose 269 mg/dL, and lactate 12.8 mmol/L. A complete blood count showed a WBC count of 45.560/uL with 86.1% neutrophils. After 20 min following intubation, the patient suffered a cardiac arrest. Cardiopulmonary resuscitation (CPR) was initiated. Intravenous naloxone (0.4 mg) was administered because repeated examination revealed pinpoint pupils, and the patient's history was suspicious. Spontaneous circulation returned after 20 min of CPR. Positive inotropes were initiated because of low blood pressure.

A rectal examination revealed three medium-sized (4-5 cm) black packages wrapped with stretch wrap stuffed in the rectal cavity (Figure 1). Non-contrast brain computed tomography (CT) and thoracic, abdomen, and pelvic CT scans with intravenous contrast were obtained. They showed multiple hyperdense findings consistent with foreign bodies within the distal bowel loops (Figure 2). Brain CT was interpreted as normal. Other initial blood test results showed troponin I 346 pg/mL (0-17.5), creatinine 1.42 mg/dL (0.7-1.2), lactate dehydrogenase 593 U/L (135-248), and C-reactive protein 5.1 mg/L (<5). Electrolyte levels were normal. Blood toxicology tests showed an opiate level above 1.800 ng/mL (0-300). Tests were negative for heroin metabolites, amphetamine, cocaine, barbiturate, and benzodiazepine.

Six foreign bodies of the same nature in different sizes were removed by emergency colonoscopy performed by general surgeons, and no signs of necrosis, ischemia, or perforation were found. The patient was transferred to the intensive care unit (ICU) where he was observed with fever, sepsis, acute kidney failure, and acute respiratory distress syndrome (ARDS). Continuous veno-venous hemofiltration is initiated. Echocardiography showed a normal ejection fraction and no valvular abnormalities. Infective endocarditis was excluded.

CT angiography scans performed 15th day post-operatively showed signs of decreased cerebral blood flow, widespread cerebral edema, and subarachnoid hemorrhage. The patient was diagnosed with brain death 16 days post-operatively because of the complications of body Packer syndrome and died one day later.

Discussion

Status epilepticus is a neurological emergency defined as a seizure with at least 5 min of continuous seizure activity or recurrent seizure activity without recovery between seizures. Seizure activity may be convulsive, non-convulsive, focal motor, or myoclonic. It requires immediate evaluation and

Figure 1. Recovered packets filled with opioids in different sizes and shapes (blue arrow: leaked packet)

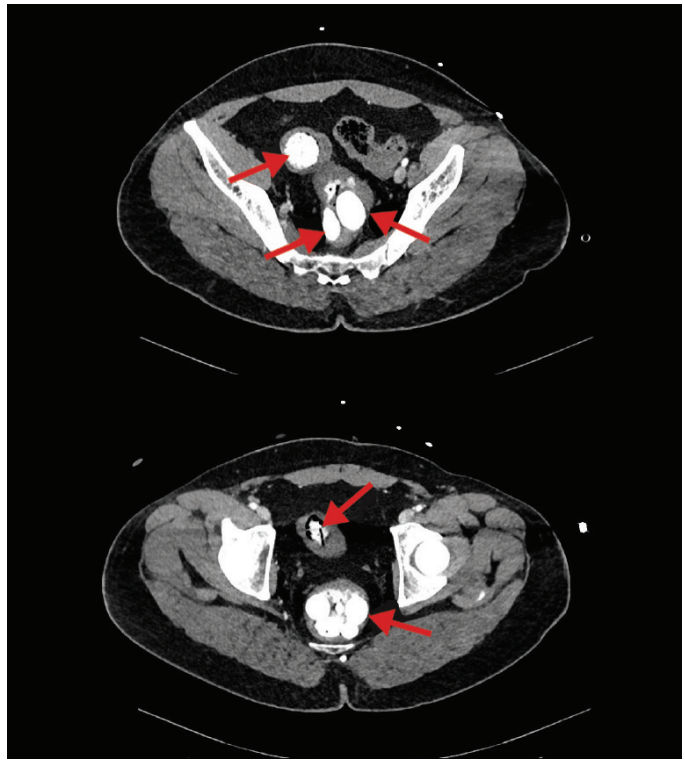

Figure 2. Hyperdense findings consistent with foreign bodies in computed tomography scan images (red arrows: packets)

management to prevent significant morbidity or mortality. Illicit drugs may cause seizures and status epilepticus [2,6,7]. In status epilepticus, guidelines recommend stabilizing the patient, monitoring vital signs and ECG, checking for blood glucose, collecting blood for electrolytes, hematology, toxicology screening, and (if appropriate) anticonvulsant drug levels [6]. CPR guidelines recommend considering naloxone in cardiac arrest patients with suspected opioid poisoning, even for lay responders [8]. In this study, naloxone was administered during CPR.

Opioid overdose is the leading cause of death among young populations. Opioids are substances that act as potent agonists of opiate receptors. While mu, kappa, and delta receptors mediate the effects of opioids, mu receptors are the primary mediators that decrease the respiratory response to hypoxia. Respiratory depression is the primary factor responsible for opioid-related fatalities. Neurons are vulnerable to hypoxia, and hypoxic brain damage may occur due to depressed respiration, which may result in seizures, coma, and stroke [7]. Naloxone is an opioid antagonist with a high affinity for the mu-opioid receptor, which allows for the reversal of opioid effects [8]. Loosely packed packets carried by body packers are highly susceptible to leakage and rupture [9].

Body packers may have a history of international travel originating in the routes of drug transfer, and unusual flight patterns may give a hint. However, it is often difficult to obtain a thorough medical history of the patient because of factors such as the patient's mental status, the patient's tendency to hide the facts, or the language barrier [2]. In this study, it was not possible to obtain the patient's medical history, and it was evaluated as an epileptic seizure in the initial evaluation.

Body Packers develop several complications that are named "body Packer syndrome". Rupturing of the packages may cause drug toxicity, which may lead to respiratory compromise and systemic toxicity [2]. In body packers who suffered from drug toxicity, the mortality rate was as high as 56% in the past. Fortunately, it is reported to be lower than 3% today [2].

Surgery is warranted for patients suffering from body packer syndrome or if there is a concern of developing it. Studies show that 0.7%-3.7% of patients need surgery and the mortality risk is less than 1.4% [3]. A recent study from a referral center in Iran showed a mortality rate of 2.7%, of which 62.5% died before surgery [10]. Abdominal CT scan has a sensitivity of 95.6%-100% to detect drug packets, and oral or rectal contrast should not be used as they are similar to packets in density [9]. In this case, a comprehensive examination after stabilization showed rectal foreign bodies, and a CT scan confirmed the diagnosis. The patient had undergone emergency colonoscopy, and the packets were removed. While the leaked package was identifiable in our case (Figure 1), the absence of disrupted packages in the evaluation of the patient or even at the autopsy does not exclude a package leak because leaking packages may be incorrectly diagnosed as intact [2].

Opioid overdose patients rarely develop seizures, acute lung injury, and adverse cardiac events [2]. Opioid overdose may cause acute kidney injury due to hypotension and rhabdomyolysis. The present case suffered cardiac arrest and was observed in the ICU with persistent hypotension requiring multiple inotopes, sepsis, acute kidney failure, and ARDS, which led to mortality.

Conclusion

This case underscores the challenges in diagnosing and managing this rare but potentially fatal disease. Maintaining a high index of suspicion for body packing, especially in patients with uncertain medical histories or unexpected clinical courses during the ED observation period, using appropriate imaging and laboratory modalities, timely intervention, and embracing a multidisciplinary approach are vital to improve patient outcomes but may not be enough.

Ethics

Informed Consent: Informed consent was obtained from the patient's relatives in this case report.

Peer-review: Externally peer-reviewed.

Authorship Contributions

Desing: İ.S., A.Ç.Ş., A.B., Literature Search: İ.S., A.Ç.Ş., A.B., Writing: İ.S., A.Ç.Ş., A.B.

Conflict of Interest: No conflict of interest was declared by the authors.

Financial Disclosure: The authors declared that this study received no financial support.

References

1. United Nations Office on Drugs and Crime. World Drug Report Available from: https://www.unodc.org/unodc/en/data-and-analysis/world-drug-report-2023.html
2. Cappelletti S, Piacentino D, Sani G, Bottoni E, Fiore PA, Aromatario M, et al. Systematic review of the toxicological and radiological features of body packing. Int J Legal Med. 2016;130:693-709.
3. Berger FH, Nieboer KH, Goh GS, Pinto A, Scaglione M. Body packing: a review of general background, clinical and imaging aspects. Radiol Med. 2015;120:118-32.
4. Wong GCK, Lai KK, Chung CH. Management of body packers in the emergency department. Hong Kong J Emerg Med. 2005;12:112-8.
5. Malhotra R, Singh A. Imaging of Drug Mules. Emerg Radiol. 2021;28:809-14.
6. Glauser T, Shinnar S, Gloss D, Alldredge B, Arya R, Bainbridge J, et al. Evidence-Based Guideline: Treatment of Convulsive Status Epilepticus in Children and Adults: Report of the Guideline Committee of the American Epilepsy Society. Epilepsy Curr. 2016;16:48-61.

7. Skolnick P. Treatment of overdose in the synthetic opioid era. Pharmacol Ther. 2022;233:108019.

8. Lavonas EJ, Akpunonu PD, Arens AM, Babu KM, Cao D, Hoffman RS, et al. 2023 American Heart Association Focused Update on the Management of Patients With Cardiac Arrest or Life-Threatening Toxicity Due to Poisoning: An Update to the American Heart Association Guidelines for Cardiopulmonary Resuscitation and Emergency Cardiovascular Care. Circulation. 2023 17;148:e149-e184.

9. Rosas JAA, Vázquez CG, Blanco IV. Body packers : radiological challenge to new packaging techniques. ECR 2012. 2012:1-16. Available from: https://epos.myesr.org/ poster/esr/ecr2012/C-1347

10. Hajinasrollah E, Zamani A, Mirhashemi H, Oshidari B, Suri M, Rashnoo F, et al. Demography and Mortality of Body Packers; an Extended Experience from a Referral Center. Arch Iran Med. 2020 1;23:542-7.