MYOCARDIAL INFARCTION DUE TO COCAINE BODY PACKER SYNDROME – A CASE REPORT

KOKAİN BODY PACKER SENDROMUNA BAĞLI MIYOKARD ENFARKTÜSÜ - BIR OLGU SUNUMU

Ibrahim SARBAY[1], Halil DOGAN[2]

MAKALE BİLGİLERİ
Olgu Sunumu

Makale:
Geliş: 07.09.2023
Kabul: 05.10.2023
Yayınlanma: 30.12.2023

CJMR 2023;3(3):52-58

Anahtar Kelimeler:
body packing, miyokard infarktüsü, kokain

Keywords:
Body Packing, Myocardial Infarction, cocaine

It was presented as an oral presentation at the 6th Eurasian Congress on Emergency Medicine and the 14th Turkish Emergency Medicine Congress in 2018.

Corresponding Author:
Ibrahim SARBAY

ABSTRACT

Introduction: "Body packing" refers to an act of ingesting large numbers of illicit drug-filled packets for smuggling purposes. Due to the fact that Istanbul, Turkey is considered to be one of the main air traffic hubs connecting many international airlines, it is potentially on the routes of body packing smugglers. This case report presents a case of myocardial infarction (MI) due to cocaine Body Packer Syndrome.

Case Presentation: A 43-year-old woman of Venezuelan nationality was brought to the Emergency Department on suspicion of seizure and deterioration during her flight and diagnosed with MI due to cocaine Body Packer Syndrome.

Conclusion: Body packers may have intoxication due to the leakage or rupture of the cocaine packets. One of the consequences is MI related to cocaine intoxication.

ÖZET

Giriş: Body packing, çok miktarda yasadışı maddenin kaçakçılık amacıyla kişinin vücudu içinde gizlenmesini tarif etmektedir. İstanbul, Türkiye birçok havayolunun bağlandığı ana hava trafiği aktarma merkezlerinden biri olması nedeniyle, body packing kaçakçılarının rotaları üzerinde olma potansiyelindedir. Bu olgu sunumunda, kokain body packer sendromuna bağlı bir miyokard enfarktüsü (MI) vakası sunulmuştur.

Olgu Sunumu: 43 yaşındaki Venezuela uyruklu kadın, uçuş sırasında nöbet geçirme şüphesi ve kötüleşme nedeniyle Acil Servis'e getirildi ve kokain Body Packer Sendromuna bağlı MI tanısı aldı.

Sonuç: Kokain paketlerinin sızması veya yırtılması nedeniyle body packerlarda intoksikasyon görülebilir. Bunun olası sonuçlarından biri, kokain intoksikasyonuna bağlı MI'dır.

[1] Emergency Department, Keşan State Hospital, Edirne, Turkey. ORCID: 0000-0001-8804-2501, e-mail: ibrahimsar@gmail.com
[2] Department of Emergency Medicine, Bakirkoy Dr. Sadi Konuk Training and Research Hospital, Istanbul, Turkey. ORCID: 0000-0003-4751-030X, e-mail: drhalildogan@gmail.com

Introduction

Body packing is defined as ingesting large numbers of illicit drug-filled packets with the aim of international drug smuggling. “Body packers” usually conceal the packets either by swallowing or by inserting them into the rectum or vagina. The three most frequently smuggled drugs in this method are cocaine, heroin, and cannabis.

Different types of cocaine packets used by body packers were defined in the literature (1,2). There seems to be a new trend of using liquid cocaine packets, and due to their radiotransparent nature, it is harder to diagnose them correctly (3).

Detecting a body packer usually rests on clinical presentation and appropriate medical history. A body packer can classically be diagnosed with an abdominal radiograph and computed tomography (CT).

In some cases, the packets filled with illicit drugs can leak or rupture, and may have consequences due to acute drug intoxication, which is appropriately named “Body Packer Syndrome”. These cases need emergency surgical procedures to prevent mortality(4).

Cocaine is one of the most consumed stimulants. It causes a local anesthetic effect by inhibiting voltage-gated sodium channels, and it also affects neurotransmission by inhibiting the reuptake of dopamine and other monoamines from the synaptic cleft(5). It can be consumed through various routes and can be quickly absorbed transmucosally. Even the rupture of one cocaine packet may be lethal(2). Cocaine toxicity may present with tachycardia, hypertension, hyperthermia, diaphoresis, mydriasis, and agitation. Patients often die due to neurological and cardiovascular side effects (2,5).

Cocaine, with its complex effects on the body, has severe cardiac side effects ranging from atypical chest pain to unstable angina pectoris and acute MI. Management of these cases has some differences from Acute Coronary Syndrome (ACS) cases.

Case Presentation

A 43-year-old woman of Venezuelan nationality was brought to the Emergency Department with an ambulance, on suspicion of seizure and deterioration during the last minutes of her flight between Buenos Aires and Istanbul.

The patient’s vital signs were stable at admission to the Emergency Department (ED), with a blood pressure of 130/75 mm-Hg, pulse rate of 105 beats/min, respiratory rate of 17/min, sPO2 of 99%, and temperature of 36.5 0C. The patient was alert and oriented. A full physical examination showed no pathological findings other than conjunctival hyperemia and mild dilation of the pupils.

In the detailed medical history, it is learned that the patient felt chest pressure and became unwell but did not lose consciousness, and has no known history of illnesses. She explained that she was flying from Buenos Aires to İstanbul as a transit passenger. The airplane landed in İstanbul at 11 p.m., and she had a flight to Bucharest/Romania at 6:45 p.m. the next day. Accompanying airline personnel remarked that this was an unusual flight pattern for a transit passenger, and the airport police suspected she was a possible drug smuggler.

An electrocardiogram (ECG) test is obtained and interpreted as normal. Arterial blood gas, hemogram, cardiac marker enzymes (troponin T and creatine kinase), coagulopathy, urinalysis, B-HCG, and blood and urine drug tests were measured. Arterial blood gas test showed respiratory alkalosis. Posteroanterior chest-x-ray and abdominal x-ray of the patient were taken, and interpreted as normal (Figure 1).

Figure 1. Abdominal x-ray of the patient. Foreign bodies are not apparent.

Troponin level was 6800 pg/mL, creatine kinase (CK) level was 661 U/L, CK-MB level was 27,9 ng/mL, and echocardiography (Figure 1) showed possible anterior wall motion abnormality. With these results, the cardiologist diagnosed the patient with MI, and emergency coronary angiography (CAG) was performed. It resulted as normal with no significant coronary lesions.

3rd-hour control Troponin level was 5967 pg/ml, CK: 551 U/L, CK-MB: 21,8 ng/mL (7th-hour Troponin level: 7526 pg/mL).

Drug test results were only positive for cocaine (>900 ng/mL), and a non-contrast abdominal CT scan was performed for detailed evaluation of the abdomen. CT Scan showed some air-fluid levels, and hyperdense findings in the stomach and bowels consistent with foreign bodies (Figure 2). With these results, the patient underwent emergency laparotomy with the diagnosis of “Body Packer Syndrome”. A total of 43 mostly perforated packets filled with liquid cocaine were found scattered along the stomach and the bowels, and successfully recovered (Figure 3).

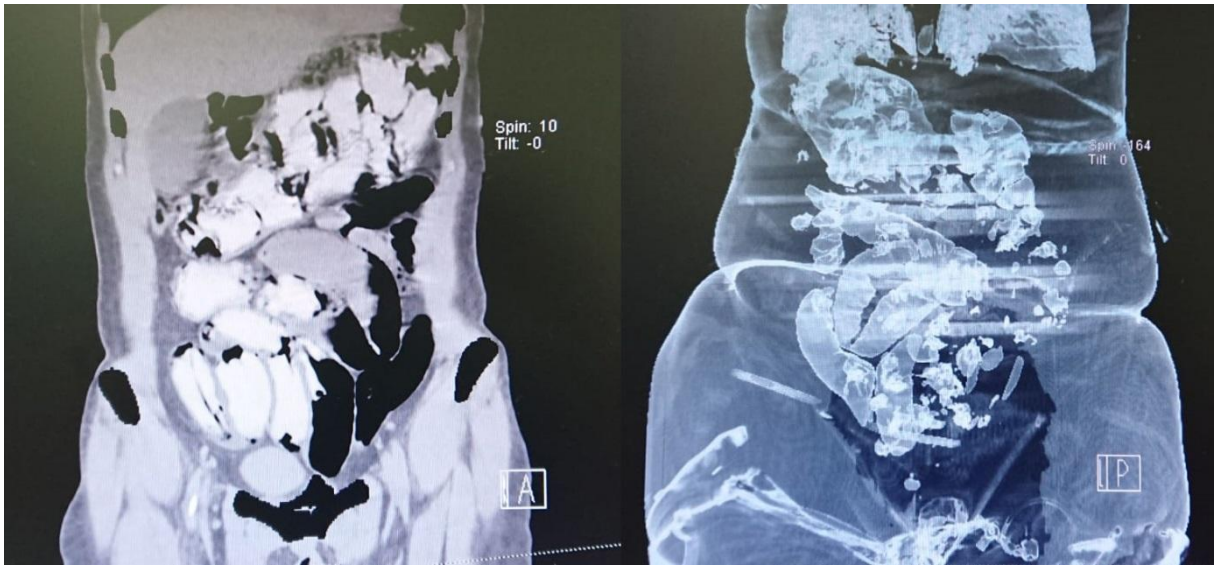

Figure 2. Hyperdense findings consistent with foreign bodies in Coronal non-contrast abdominal CT (left) and, 3-Dimensional reconstruction of it (right).

Figure 3. Recovered packets filled with liquid cocaine.

After the operation, the patient was admitted to the Intensive Care Unit (ICU). No complications occurred within the first 5 days following the operation where the patient was in the ICU, and the patient was admitted to the General Surgery Department for further observation. After 5 more days without complications, the patient was discharged and handed over to the law forces.

Discussion

Smugglers carrying illicit drugs in their body cavities are named “Body Packers” in the literature, and often present to health facilities with three presentations: 1) Drug toxicity, 2) Bowel obstruction, and 3) Asymptomatic body packers who are detected by the police forces and brought to health facilities for medical evaluation.

Because of the legal aspects, the medical history of the patients is typically misleading. Also, in some cases with drug toxicity, the patient's consciousness may deteriorate, and be unsuitable to obtain an accurate history.

Abdominal X-ray has been reported to have 40-100% sensitivity in the diagnosis of body packing. Cocaine packets are usually seen as radio-opaque objects (6).

Apart from 4 classic packet types (2), packets filled with liquid cocaine have been reported lately. With their homogeneous hyperdense fillings, these packets are typically hard to diagnose (6). That was indeed correct for the present case's X-ray images too, which the packets could not be successfully distinguished. In contrast, hyperdense findings consistent with foreign bodies can easily be distinguished in non-contrast abdominal CT images (Figure 2).

Literature search for "body packer (-ing)", "body stuffer (-ing)", "intracorporeal drug concealment", "drug courier", and "cocaine mule" expressions in PubMed is summed up in Table 1. We have found only one cocaine body packer case ended with mortality due to cardiotoxicity in the literature (7). Also, except for the present case, there is only one case reported with MI due to cocaine Body Packer Syndrome (8).

Table 1. PubMed search results of Cocaine Body Packer cases with cardiotoxicity.

Source	Number of Total Cases	Cardiac Toxicity	Description	Mortality
Marcovigi et al. (1995)(9)	1	1	Severe dysrhythmias occurred, and a pacemaker was applied.	No
De Prost et al. (2005)	581	3	One cardiac arrest, One MI, One VF	1 case
Alfa-Wali et al. (2016)	120	1	High Troponin and nonspecific ECG changes were seen and observed in the CICU	No
Pramanik et al. (2016)	1	1	Cardiac arrest shortly after chest pain. Packets filled with cocaine have been found in the autopsy.	Yes
Present Case	*1*	*1*	*Emergency CAG was performed with the diagnosis of MI*	*No*

Abbreviations: ECG; Electrocardiography, MI; Myocardial infarction, VF; Ventricular Fibrillation, CICU; Coronary Intensive Care Unit, CAG; coronary angiography.

Cocaine has several cardiotoxic effects that include stimulation of the sympathetic nervous system, blockade of sodium and potassium channels, promotion of thrombosis, vasoconstriction, oxidative stress, and mitochondrial damage that lead to ischemia. It also leads to myocardial damage with its effects on myocardial contraction, increasing myocardial oxygen demand while simultaneously decreasing oxygen supply (9,10). 10% of MI patients under 50 years old have a history of cocaine and/or cannabis use, and their mortality due to cardiac causes (and all-cause mortality) is higher. They conclude that drug testing should be performed to define the cause of young MI patients (11). 6% of the patients present to the ER with chest pain associated with cocaine have been diagnosed with MI (12). Current guidelines suggest approaching chest pain associated with cocaine, like other ACS cases. However, there is a debate over the high number of negative CAGs arising from this approach (13). Gitter et al.'s study showed that none of the chest pain associated with cocaine patients had MI (14). Another retrospective analysis conducted lately in the USA showed that 6.7% of these patients had CAG, but the Type 1 MI rate was a mere 0.69%. Researchers stated that these patients had low mortality rates (15).

MI cases related to cocaine use may have no ECG findings. However, there may be Q waves on anterior and inferior leads, and an ECG finding in presentation is related to higher mortality (16). CAGs of these patients show 1-2 vessel disease in 31-66%, 3 vessel disease in

13-15%, normal coronary arteries in 18-45%, and thrombosis in 24% (12). There was no definitive ECG finding in our case, and the CAG resulted as normal. No additional cardiac pathology has been found in the observation period.

Conclusion

Body packers may have consequences of intoxication due to the leakage or rupture of the cocaine packets. One of these consequences is MI. In these patient groups, ending exposure by emergency laparotomy, and using a standard ACS approach, is the treatment choice. It should be noted that Body Packer Syndrome is an easy-to-miss life-threatening diagnosis, especially if it's not suspected, and one of the consequences is MI due to cocaine intoxication.

Acknowledgments

It was presented as an oral presentation at the 6th Eurasian Congress on Emergency Medicine and the 14th Turkish Emergency Medicine Congress in 2018.

References

1. McCarron MM, Wood JD. The Cocaine 'Body Packer' Syndrome: Diagnosis and Treatment. JAMA J Am Med Assoc. 1983;250(11):1417–20.
2. Pidoto RR, Agliata AM, Bertolini R et al. A New Method Of Packaging Cocaine For International Traffic And Implications For The Management Of Cocaine Body Packers. Science (80-). 2002;23(2):149–53.
3. Rosas JAA, Vasquez CG, Blanco IV. Body packers : radiological challenge to new packaging techniques. ECR 2012. 2012;1–16.
4. Traub SJ, Hoffman RS, Nelson LS. Body Packing — The Internal Concealment of Illicit Drugs. N Engl J Med. 2003;349(26):2519–26.
5. Roque Bravo R, Faria AC, Brito-da-Costa AM, et al. Cocaine: An Updated Overview on Chemistry, Detection, Biokinetics, and Pharmacotoxicological Aspects including Abuse Pattern. Toxins (Basel). 2022;14(4):278. Published 2022 Apr 13.
6. Bulakci M, Kalelioglu T, Bulakci BB et al. Comparison of diagnostic value of multidetector computed tomography and X-ray in the detection of body packing. Eur J Radiol. Elsevier Ireland Ltd; 2013;82(8):1248–54.
7. Pramanik P, Vidua RK. Sudden Cardiac Death of a Body Packer Due to Cocaine Cardiotoxicity. Clin Med Insights Pathol. 2016;9:33–5.
8. De Prost N, Lefebvre A, Questel F et al. Prognosis of cocaine body-packers. Intensive Care Med. 2005;31(7):955–8.
9. Marcovigi P, Leoni S, Calbi G et al. [Acute cocaine poisoning in a body packer. Clinical case]. Minerva Anestesiol [Internet]. 1995 Mar;61(3):109–12. Available from: http://www.ncbi.nlm.nih.gov/pubmed/7675260
10. Stankowski R V., Kloner RA, Rezkalla SH. Cardiovascular consequences of cocaine use. Trends Cardiovasc Med [Internet]. Elsevier; 2015;25(6):517–26.
11. DeFilippis EM, Singh A, Divakaran S et al. Cocaine and Marijuana Use among Young Adults Presenting with Myocardial Infarction. J Am Coll Cardiol. 2018;71(22).
12. Schwartz BG, Rezkalla S, Kloner RA. Cardiovascular effects of cocaine. Circulation. 2010;122(24):2558–69.
13. Sehatbakhsh S, Kushnir A, Furlan S et al. Importance of a Risk Stratification Strategy to Identify High-risk Patients Presenting With Cocaine-associated Acute Coronary Syndrome. Crit Pathw Cardiol. 2018 Sep;17(3):147–50.
14. Gitter MJ, Goldsmith SR, Dunbar DN et al. Cocaine and chest pain: Clinical features and outcome of patients hospitalized to rule out myocardial infarction. Ann Intern Med. 1991;115(4):277–82.

15. Singh V, Rodriguez AP, Thakkar B et al. Hospital Admissions for Chest Pain Associated with Cocaine Use in the United States. Vol. 130, American Journal of Medicine. Elsevier Ltd; 2017. 688-698 p.
16. Hollander JE, Hoffman RS, Burstein JL, Shih RD THJ. Cocaine-associated myocardial infarction. Mortality and complications. Cocaine-Associated Myocardial Infarction Study Group. Arch Intern Med. 1995;155:1081–6.