K42 A Fatal Case of Body Stuffer Syndrome

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Learning Overview: This case of a fatal cocaine overdose in a body stuffer not only confirms the limits of instrumental diagnostics in the recognition of corporal drug users, but also helps to better define the pathological characteristics of this peculiar syndrome. This case also demonstrates that cocaine body stuffers, contrary to general belief, can develop toxic symptoms beyond 24 hours after ingestion, and that delayed toxicity can occasionally lead to death.

Impact on the Forensic Science Community: This case will impact the forensic science community by better defining histopathological and toxicological findings of the unique type of cocaine overdose known as "body stuffer syndrome."

Introduction: Intracorporeal drug concealment is a frequent illicit practice in drug trafficking, since it is impossible to identify drug carriers if no medical complications occur.[1,2] Sometimes, drug concealment is the impulsive act of consumers or small traffickers (the so-called mini packers or body stuffers) attempting to evade control by law enforcement. In this case, the risk of acute intoxication is higher, because poor drug packaging, due to the extemporaneousness of the gesture, results in an increased probability of rupture or leakage.[3,4] The clinical picture, known as "body stuffer syndrome," varies according to the type of drug and the amount of substance absorbed, and can prove lethal, as exemplified in this case.[5-8]

Case Report: A 29 year-old female drug pusher, while in custody, reported general malaise with abdominal pain. Physical examination, conducted at the local hospital's emergency department, revealed: hypothermia, tachycardia, hypotension, mydriasis, areflexia in the lower limbs and hyporeflexia in the upper limbs, right supra-orbital hematoma, and right shoulder hematoma. Electrocardiogram (ECG) only confirmed tachycardia, while echocardiogram did not show abnormalities. A total body Computed Tomography (CT) scan revealed: peri-ponto-mesencephalic subaracnoidal hemorrhage, ischemic brain lesions, and hepatic injury with perihepatic and perisplenic fluid effusion (without splenic lesions). Blood analysis showed hyperglycemia, leucocitosis, high transaminase levels, and hypercapnic acidosis. Toxicological tests revealed high levels of cocaine and its metabolite benzoylecgonine in serum (over 50.00g/L and 5.26 /L, respectively) and urine (22.5g/L and 76.9g/L, respectively). The patient rapidly went into a coma; she was admitted to the Intensive Care Unit (ICU) and placed under mechanical ventilation and colloid infusion for hypotension. She died three days after admission. At autopsy, a single, open plastic bag, undetected by the previous CT scan, was found in the gastric lumen, which presented several deep, necrotic ulcers. Hemorrhagic areas in the lungs, kidneys, and liver, and a (modest) peri-ponto-mesencephalic leptomeningeal hemorrhage were also observed. The heart showed mild concentric myocardial hypertrophy (ventricular wall maximum thickness =2.2cm), and a small hemorrhagic area in the anterior papillary muscle. Histological examination confirmed the polyvisceral bleeding pattern; particularly relevant were the plentiful hepatic hemorrhagic foci, communicating with dilated sinusoids, in complete absence of inflammatory reaction. Heart samples showed microarterial damage and foci of contraction bands; deep ulcerations, bounded by parietal necrosis, and intense hemorrhagic phenomena were detected in the gastric samples. Postmortem toxicological analysis documented very high levels of cocaine and benzoylecgonine in all biological samples (5.74g/L and 43.23g/L in urine, 1.72g/L and 4.3 g/L in blood, respectively) and cocaine in the plastic bag content (381.20g/L).

Discussion: Cocaine is the drug most commonly involved in severe intoxications associated with body concealment, although fatal cases in body stuffers are rare, according to literature, in comparison with heroin, cannabis, and ecstasy toxicosis.[9,10] This case of fatal cocaine overdose in a body stuffer not only confirms the limits of instrumental diagnostics in the recognition of corporal drug users, but also helps to better define the pathological characteristics of this peculiar syndrome. In fact, to date, conventional radiology—normally used to search for drug packages within the gastrointestinal system—have limited diagnostic value, as exemplified by this case in which the radiological images conducted have been thoroughly revised, with a negative outcome. The case presented here also demonstrates that cocaine body stuffers can develop toxic symptoms beyond 24 hours after ingestion, and that delayed toxicity can, occasionally, lead to death.[11,12] It appears that the integrity of the packaging has a significant predictive value in determining the time and likelihood of toxicity, although in some fatal cases the autopsy showed intact packages.[13] In this case, sustained leakage from the package into the gastric lumen probably led to a massive absorption of cocaine into systemic circulation, causing a dramatic clinical picture and the lesions observed at autopsy and at histological examinations, of which the "peliotic-like" liver alterations (dilation of the hepatic sinusoids, communicating with cystic blood cavities, delimited by endothelium, and surrounded by a band of connective tissue) were the most atypical, for liver damage is not usually reported in cocaine intoxications.[14-18]

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Body Stuffer Syndrome, Forensic Histopathology, Forensic Toxicology

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