Haemoperitoneum Associated with Cocaine Abuse: A Case Report

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Abstract. Cocaine use is now relatively common in the occidental societies and is responsible for a long list of medical complications involving almost every organ system in the body. The digestive complications are less known. We report a case of a young man who presented to the emergency department with violent abdominal pain and several episodes of vomiting after using intranasal cocaine. The abdominal pain was caused by a massive haemoperitoneum with no evidence of any underlying pathology. This case shows that we have to consider the possibility of a lethal abdominal haemorrhage in the differential diagnosis of acute abdominal pain in cocaine abusers.

Introduction

Cocaine is one of several alkaloids present in the leaves of Erythroxylon coca plant. Its recreational use has grown dramatically in the last two decades in developed countries. In Europe, the cocaine use prevalence along life ranges between 1 and 6% of the population (1).

Medical complications of cocaine use involve almost every organ system in the body. Although the clinical literature is replete with reports of cardiovascular and central nervous system complications, there have been only a few case reports on gastrointestinal problems (2-4).

The present report illustrates the case of a massive haemoperitoneum following the use of cocaine; the physiopathology is discussed.

Case report

A 28-year old man, previously healthy, was admitted to the emergency department with complaints of epigastric pain, increasing left chest pain radiating to the left shoulder and repeated episodes of expulsive vomiting for one hour. He had no history of trauma but used intranasal cocaine a few hours earlier and admitted using cocaine once a week for the last four years.

On admission, the patient appeared acutely ill, pale, and dehydrated with no fever. The blood pressure was 85/35 mmHg and the pulse was 112 beats/min. The abdomen was soft, with slight epigastric tenderness, without rebound or guarding. The rest of the examination was unremarkable.

Laboratory tests performed on admission showed a leukocyte count of 22,300/mm³, with 91.9% neutrophils; haemoglobin 12.1 g/dl and C-reactive protein 0.5 mg/dl.

Six hours after admission, the systolic blood pressure fell sharply to 60 mmHg and the abdominal examination revealed a diffuse tenderness with a left upper quadrant and epigastric guarding.

Subsequent laboratory analysis showed a significant drop in his haemoglobin, from 12.1 to 8.9 g/dl. An abdominal computed tomography scan was made and revealed an important amount of free intra-abdominal liquid with a voluminous dense clot in the left upper and middle quadrants corresponding to an intramural gastric bleeding (Fig. 1). There was no pneumoperitoneum and no occlusive syndrome.

After a quick resuscitation of the patient, an exploratory laparoscopy was made and revealed a massive haemoperitoneum. A laparotomy was performed and the clotted blood was evacuated. A careful examination of the stomach showed no perforated ulcer, but a big haematoma under the gastrosplenic ligament, with no underlying abnormalities. Despite extensive exploration, we only saw a little diffuse bleeding in the gastrosplenic ligament, and made some haemostasis at this level and of the short gastric vessels. The spleen was not removed. Three liters of haemoperitoneum were evacuated.
Haemoperitoneum is a rare and potentially fatal complication; the aetiology of which can be a trauma, different gynaecological and urological entities, ruptured aneurysms, etc (5).

Other authors have reported spontaneous, non traumatic haemoperitoneum from undetermined causes (6). But, in these cases, the patient's history of cocaine or other drugs usage was not mentioned.

In our case, the source of bleeding within the peritoneal cavity could not be well identified. No vascular or other abnormalities were recognized and, despite repeated questioning, no history of trauma was elicited. It is possible that the nature of this spontaneous haemoperitoneum might be centered on his intranasal cocaine abuse and vomiting.

Indeed, review of the literature supports a strong relationship between cocaine and haemorrhagic complications. There have been several clinical reports of acute gastrointestinal (7), pulmonary (8) and intracerebral haemorrhages (9) related to cocaine use.

Studies suggest that cocaine associated haemorrhage is the result of a direct toxicity of the drug on the capillary endothelium and cocaine induced hypertensive surges (8-9).

Experimental in vitro studies have documented increased vascular smooth-muscle tone in blood vessels caused by cocaine-induced release of norepinephrine from adrenergic nerve terminals in the vessel walls (10). Because norepinephrine is the primary neurotransmitter of the sympathetic system, increased norepinephrine at the synaptic junctions results in vasoconstriction of mesenteric vessels that contain alpha-adrenergic receptors (4), which will cause a transient rise in blood pressure.

In another way, efforts of vomiting also cause an increase of the intra-abdominal venous blood pressure (11).

In our case, it is possible that cocaine hypertensive actions, potentiated by the patient’s emesis, increased stress on the splanchnic vessels, resulting in spontaneous intra-abdominal haemorrhage.

Therefore, we can say that haemoperitoneum should be considered in differential diagnosis of acute abdominal pain in cocaine abusers; but not forgetting the other intestinal complications related to the consumption of this drug.

Conclusion

Digestive complications that can appear in cocaine abusers are numerous and immediate laparotomy is often necessary to diagnose and treat such patients. But we do not have a lot of reports concerning intra-abdominal spontaneous haemorrhage in these patients.
We report a case of a young cocaine user who presented to the emergency department with acute abdominal pain related to an important haemoperitoneum. If a history of recent cocaine usage has been elicited in a patient with abdominal pain, it is important to exclude life-threatening gastrointestinal complications such as haemorrhage.

References