

## Case Study: Abdominal Contusion with Intestinal Perforation Secondary to Rifle Recoil Trauma (Tbourida)

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**ABSTRACT :** We report the case of a 45-year-old man with no medical history who was admitted to the emergency department 18 hours after abdominal trauma caused by rifle recoil during a fantasia (tbourida) demonstration. The patient presented with vomiting, hypogastric abdominal pain, and signs of generalized abdominal guarding. Surgical exploration revealed a small bowel perforation, confirmed by the operative image. This case highlights the potential severity of blunt abdominal trauma in a non-military or classic accidental setting, emphasizing the need for rapid management.

**KEYWORDS:** Abdominal contusion, Intestinal perforation, Emergency surgery, perforation.

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### INTRODUCTION

Blunt abdominal trauma poses a significant diagnostic challenge in emergency medicine, especially when caused by unusual mechanisms. The recoil of a firearm, in traditional settings such as Moroccan fantasia (tbourida), can cause severe internal injuries despite the absence of an apparent external wound. We present a rare case of intestinal perforation secondary to abdominal contusion during such an event.

### CASE PRESENTATION

This is a 45-year-old male patient with no significant medical or surgical history. He was admitted to the emergency department 18 hours after suffering abdominal trauma caused by a rifle recoil during a traditional fantasia (tbourida) game. The patient reported abdominal pain localized to the hypogastrium, accompanied by vomiting of food, without hematemesis or melena. There was no external gastrointestinal bleeding. The patient's course occurred in an unquantified fever. On admission, the clinical examination found a conscious patient with a Glasgow Coma Scale (GCS) score of 15/15, hemodynamically stable (blood pressure 100/60 mmHg, heart rate 120 beats per minute), respiratory rate 22 cycles per minute, body temperature 37.1°C, profuse sweating, without altered consciousness. Abdominal examination revealed a skin abrasion accompanied by a bruise in the hypogastric region as well as generalized abdominal guarding indicating peritoneal irritation.

A digital rectal examination revealed no rectal bleeding or signs of rectal perforation. Abdominal X-rays showed fluid and air levels suggestive of obstruction, with no visible pneumoperitoneum. Given the suspicion of gastrointestinal perforation, an exploratory laparotomy was performed, revealing a frank perforation of the small intestine, as shown on the intraoperative image. The patient then underwent an appropriate surgical procedure, including resection of the affected intestinal segment followed by an end-to-end anastomosis.

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- **Abdominal X-ray:** Images of fluid and air levels, without pneumoperitoneum.



Image 1: Abdominal X-ray showing fluid levels

- **Exploration chirurgicale (photo opératoire) :** présence d'une perforation visible de l'intestin grêle.



Figure 2: visible perforation of the small intestine.

### DISCUSSION

Small bowel perforation following blunt abdominal trauma is a rare but serious condition that can be life-threatening if not treated promptly. The pathophysiological mechanism is most often based on a direct impact against the rigid abdominal wall, causing sudden crushing of the intestinal loops against the spine or posterior wall, as described in several cases of sports or accidental trauma (1,2). In our observation, the violent recoil of a rifle during a fantasia demonstration—a traditional context rarely cited in the medical literature—caused hypogastric contusion followed by frank perforation, illustrating a mechanism of intraluminal hyperpressure or focal devascularization with secondary rupture (3). This type of trauma is all the more formidable because it can develop insidiously; The average diagnostic time in such cases often exceeds 6 to 12 hours, as shown by several studies, which significantly increases morbidity and mortality due to peritoneal superinfection (4). The initial clinical examination may be nonspecific, hence the critical importance of the injury mechanism in the diagnostic orientation. Signs such as generalized guarding, tachycardia, and vomiting should raise alarms, although cases of "blank" pictures have been described, especially in young patients or in compensated shock (5,6).

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On the paraclinical level, plain abdominal X-rays remain of little contribution, revealing pneumoperitoneum in only 30 to 50% of cases according to some series (7). In contrast, abdominopelvic CT with injection of contrast agent is now the reference examination, making it possible to objectify the presence of free fluid, parietal thickening, mesenteric emphysema, or even to directly visualize a digestive breach (8). In our case, the diagnosis was made during exploratory laparotomy in the face of frank peritonitis, with intraoperative confirmation of a perforation of a small bowel loop, requiring segmental resection with end-to-end anastomosis. It is important to emphasize that the postoperative morbidity rate is directly correlated with the time to surgery; several authors recommend an optimal therapeutic window of less than 12 hours after the trauma to avoid serious infectious complications (9). In centers with the required expertise, diagnostic laparoscopy is increasingly used as an initial alternative in stable patients, allowing both direct visualization of the viscera and, in some cases, minimally invasive treatment (10).

Therefore, this case illustrates the importance of a rigorous history taking incorporating the patient's sociocultural context, repeated clinical examination, and early use of modern imaging to avoid detrimental diagnostic delay. Knowledge of atypical injury mechanisms, such as those associated with traditional practices such as fantasia (tbourida), should be integrated into trauma teaching, particularly in regions where these practices are common.

### CONCLUSION

This case highlights the seriousness of intestinal perforation following blunt abdominal trauma, especially when it occurs in an atypical context such as a traditional practice. Diagnosis is based on strong clinical suspicion supported by imaging and confirmed surgically. Prompt management remains essential to avoid serious complications and improve the prognosis.

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