



A RARE SURGICAL COMPLICATION OF THE NONSTEROIDAL ANTI-INFLAMMATORY DRUGS WITH ASSOCIATED PNEUMORETROPERITONEUM

General Surgery

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ABSTRACT

Perforation of a duodenal ulceration, caused by chronic nonsteroidal anti-inflammatory medication treatment, is a rare clinical event. Symptoms are usually insidious and non-specific, so only clinical suspicion can lead to a proper diagnostic and optimal clinical management. We present a case of perforated duodenal ulceration, with pneumoretroperitoneum, which presented to the hospital with diffuse abdominal pain, sub-fever and altered general condition. CT scanning was essential in diagnosing the location, the extent and the nature of the lesion. No abnormalities were evident at the initial inspection of the peritoneal cavity. After mobilization of the duodenum, a perforation was found on the medial wall of the duodenum II, near the lower knee, through which the bile flowed. Perforation suture, nasoduodenal tube and postoperative parenteral nutrition were the key points of the surgical management.

KEYWORDS

gastrointestinal bleeding; gastrointestinal complications; NSAIDs; ulcer; pneumoretroperitoneum; duodenal perforation; surgery

INTRODUCTION

Around the world, one of the most commonly used medical therapy is the nonsteroidal anti-inflammatory drugs (NSAIDs). The nonsteroidal anti-inflammatory drugs represent a group of non-opioid medicines that have anti-inflammatory, analgesic, antipyretic and antithrombotic properties (1), are prescribed by the physician or even used over-the-counter for acute or chronic pain management in pathologies that involve inflammatory processes.

NSAIDs-induced gastrointestinal lesions are intricate and involve or depend on a series of multiple factors. They can be divided into topical mechanisms that result in direct damage of the gastrointestinal mucosa and systemic mechanisms that are mediated by the COX-inhibition (2). Chronic drug usage of the non-steroidal anti-inflammatory agents is linked with upper gastrointestinal adverse drug reactions (ADRs) (3), some of them may pose a significant threat to the patient's life – bleeding, gastric or duodenal ulcers, obstructions and even perforations. Cardiovascular and renal manifestations have also been associated with the prolonged use of NSAIDs (4).

Gastroprotective agents, anti-secretory agents, alternative NSAID formulas and nonpharmacologic therapies represent valid strategies used for the prevention of the gastrointestinal complications (5).

CASE REPORT

We report the case of a 65-year-old woman admitted to the emergency department of our hospital for abdominal pain, predominantly localized in the epigastric region that debuted for 6 days, kept intensifying and was accompanied by pyrosis, acid regurgitation and even vomiting.

She stated that her option was to treat herself conservatively at home during this period of almost a week and that she had no personal or family history of gastric ulcer.

The patient reported that was under prolonged treatment with

nonsteroidal anti-inflammatory drugs (NSAIDs) that were prescribed to her for a chronic rheumatic disease. During the morning of the seventh day, the pain intensified and generalized being accompanied by the development of a subfebrile state, determining us to hospitalize her in order to provide the right therapeutic conduct.

At the time of admission in the hospital, the patient had a normal blood pressure accompanied by tachycardia, with a heart rate of about 110 beats per minute and had a body temperature of 37.6°C. The abdominal examination revealed a diffuse sensitive abdomen, with localized pain in the epigastric region, lacking elasticity in some way, but with no clear signs of peritoneal irritation.

The blood count indicated a mild leukocytosis of 13.400/mm³ with marked neutrophilia and the hemoglobin level was 11.9g%. The rest of the biological parameters were unremarkable and in the normal range. We performed a FAST ultrasound that did not illustrate anything pathological in the abdominal and pelvic region. The computed tomography examination identified the pneumoretroperitoneum, along with a degree of pulmonary scleroemphysema, according to the age of the patient. The decision for performing an immediate exploratory laparotomy was made.

While exploring the peritoneal cavity along with the abdominal organs, at first sight, nothing special was identified. One single aspect gained our attention and it was represented by the retraction of the mesocolon associated with the induration of the right portion of the transverse colon over the pancreatic and duodenal region. Upon its gentle release, a breach was identified in the posterior parietal peritoneum, with a diameter of almost 2/1 cm, accompanied by a serous fluid, which extruded through it.

The duodeno-pancreatic detachment revealed the existence of a duodenal perforation, with a diameter of about 1 cm, located on the medial wall of the second duodenal segment, near the lower knee,

having a very probable drug etiology (NSAIDs), which generated a sero-bilious peritoneal collection of about 300 ml, in the retroperitoneal space.

Having all these intraoperative findings and collaborating them, we decided and practiced the suture of the perforated ulceration (Figure 1). The retroperitoneal cavity was decontaminated by performing a controlled lavage followed by its drainage.

The surgical management ended with abundant peritoneal lavage and the placement of two more drain tubes, located in the subhepatic region and in the Douglas pouch. Also, a nasoduodenal transpyloric tube was inserted intraoperatively.

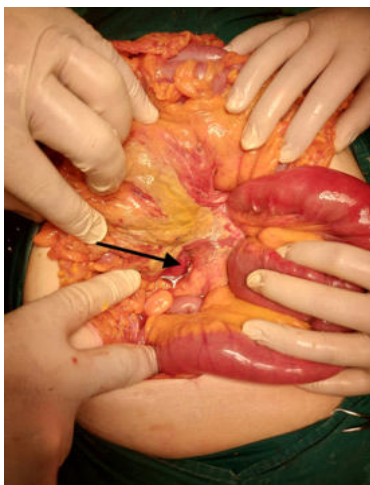


Figure 1. The duodenal ulceration after the surgical management

The patient was kept on full parenteral nutrition for about 10 days after the surgery, with antibiotic prophylaxis and blood transfusion in order to correct her anemia.

On the 11th postoperative day, the patient started to progressive resume the oral and selective alimentation. The patient had a postoperative evolution without any noticeable events and she was discharged in the 15th day after the surgery.

DISCUSSION

It is known that excess nonsteroidal anti-inflammatory medication can lead to the formation of ulcers that can be located at any level of the digestive tract. These lesions usually generate bleeding, but can sometimes be complicated by perforation. When such post-drug use ulcerations are located on retroperitoneal digestive segments, the clinical picture is rough and nonspecific, the presentation of the patient to the hospital is delayed and the diagnosis becomes relatively difficult to state.

Simple abdominal radiography and ultrasound have only occasional diagnostic efficacy. CT scanning, on the other hand, may be useful, even without contrast, in the diagnosis of retroperitoneal digestive perforation and airway collection, being of paramount importance in such situations. With oral and/or intravenous contrast, it may demonstrate extravasation of the contrast medium in the presence of a perforation. However, in some cases, even computed tomography may be negative on admission, or might illustrate subtle findings, such as small amounts of unexplained fluid and unusual bowel morphology, that may be underestimated or even ignored.

Diagnostic laparoscopy does not provide any improvement over classical surgical methods in investigating the duodenum. Due to its anatomical location, diagnostic laparoscopy represents a poor choice in order to determine a duodenal injury.

Exploratory laparotomy provides an important chance to diagnose and treat the duodenal lesions. Surgical management of the duodenal perforation depends on:

- versus the destruction of the duodenal wall
- the circumference of the duodenum that is being affected
- vascular impairment
- damage of the bile ducts or
- deterioration of the pancreas.

CONCLUSIONS

Perforation of an isolated duodenal ulceration is a rare condition, but possible in the context of excessive and prolonged treatment with nonsteroidal anti-inflammatory medication. When it is located on the duodenum II-IV, it can generate a retroperitoneal aerolichidian collection. Under these conditions, the clinical picture is nonspecific and often insidious. Clinical suspicion and relevant paraclinical investigations, quickly performed, helps the clinical diagnosis.

Because our case was diagnosed at a relatively early stage, the surgical approach, after the pancreatic-duodenal detachment, was to suture the perforation, with proper washing and drainage of the abdominal cavity, without resorting to more complex surgical procedures, such as Roux-en Y duodenojejunostomy or even a feeding jejunostomy. Supported by prolonged parenteral treatment and nutrition, the patient's evolution was favorable, which demonstrates the righteousness of the therapeutic attitude.

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- the anatomical relationship of the pathologic entity with the Vater ampulla
- characteristics of the lesion – if we discover a simple ulceration