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Case Report

Intramural Duodenal Hematoma in Adult following Sclerotherpy of Bleeding Ulcer

Karina Correa Ebrahim[1], Dayanne Alba Chiumento[1], Barbara Pereira de Lara[1], Itamar Regazzo Pedreschi Porto[2], and Ivan Roberto Bonotto Orso[3]*

[1]*Resident of General Surgery of São Lucas Hospital -Assis Gurgacz Foundation University Center, Brazil*

[2]*Department of Intensive Medicine of the São Lucas Hospital-Assis Gurgacz Foundation University Cen-tre, Brazil*

[3]*Department of the São Lucas Hospital - Assis Gurgacz Foundation University Center, Brazil*

***Corresponding author**

Ivan Roberto Bonotto Orso, General Surgery of the São Lucas Hospital - Assis Gurgacz Foundation University Center, Antônio Alves Massaneiro Street, 414, Downtown, Cascavel - Paraná, ZIP CODE 85812-090, Brazil, Tel: 55 (45) 21017700; Fax: 55 (45) 21017722; Email: ivan@gastro.com.br

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Abstract

Duodenal intramural hematoma is an uncommon condition in adults, and is usually associated with ab-dominal trauma. Most non-traumatic related cases are associated with anticoagulants treatments, blood dyscrasia, pancreatic diseases, arterial aneurysm rupture or endoscopic procedures. On this article, we will present a 28 years old male patient case, with previous immunosuppression condition due to renal and pancreas transplantation whom developed duodenal intramural hematoma after endoscopic treatment on a bleeding stomach and duodenal ulcer and its following chosen treatment.

ABBREVIATIONS

DIH: Duodenal Intramural Hematoma; DU: Duodenal Ulcer; GI: Gastrointestinal; UDE: Upper Digestive Endoscopy; CT: Computed Tomography

INTRODUCTION

Intramural Duodenal Hematoma [IDH] is a condition typically associated with abdominal trauma [1] and complications due to endoscopic procedures is exceptionally rare [2-3]. Non-traumatic IHD cases are most of the time associated with anticoagulants treatments, blood dyscrasia, pancreatic diseases, arterial aneurysm rupture or duodenal mucosa endoscopic procedures [4]. The published studies shows that duodenal hematomas are frequently seen in patience's with hepatic cirrhosis and renal failure, which often determine a predisposition to bleeding [5-6]. We report a case of IDH after duodenal ulcer sclerotherapy [UD] in an immunosuppressed, young adult patient.

CASE REPORT

A 28-year-old, white male patient have undergone through kidney and pancreas transplantation procedure. Three years after the procedure, the transplanted kidney stop working and he became dialytic once again, due to delayed graft rejection. He was taking immunosuppressant: Prednisone 10mg per day plus tacrolimus 15mg per day. He has stopped to take the steroid for two month and tacrolimus for three weeks, according to the family.

He was first admitted to another facility to treat suppurative appendicitis, and was submitted to laparotomy and appendectomy treatments. Throughout the postoperative time period, he presented an alveolus-dental abscess, which rapidly spread to a subgaleal abscess. Neurosurgery drainage was required in order to stabilize his condition.

After the intracranial abscess drainage intervention, the patience was transferred to our care. He presented a septic shock condition, coagulopathy, hemodynamic instability and anemia, melena and actively bleeding through the nasogastric tube. An Upper Digestive Endoscopy [UDE] was performed, and an active bleeding ulcer was identified [Forrest IB] in the gastric antrum and another, inside the anterior wall of the duodenal bulb. The platelet count before UDE was 135,000 p/mm^3, and coagulation tests showed no changes.

Sclerotherapy [glucose and adrenaline solution] and endoscopic clip was performed simultaneously, in order to control the gastric ulcer bleeding. The duodenal ulceration was extensive: with fibrinous background and visible vessel making the bottom of the ulcer too stiff, for the clipping procedure application. The procedure was performed in the intensive care unit bed; therefore it was not possible to use thermal therapy. As

a result, the bleeding was successfully controlled due to isolated sclerotherapy with glucose and adrenaline application. No anticoagulants, aspirin or non-steroidal anti-inflammatory drugs were used prior to hospitalization or during hospitalization. In addition to the daily replacement of intravenous vitamin an additionally correction of calcium [maintaining an ionic calcium > 1,3] therapy was maintained for optimal blood coagulation.

Two days after endoscopic treatment was preformed, hemoglobin levels lower again, however without apparent bleeding. A new endoscopy procedure was carried out and there were no signs of stomach bleeding. In the duodenal bulb, a voluminous extrinsic duodenal compression was found, collapsing the bulb and second duodenal portion lumen. Abdominal computerized tomography [CT] was performed and it illustrated a paradouodenal retroperitoneal hyper intensive case, with important luminal reduction of the duodenum, compatible with a Duodenal Intramural Hematoma condition (Figures 1,2).

At that time, a conservative treatment was administrated: open nasogastric tube, total parenteral nutrition, correction of coagulopathies, proton pump inhibitor, serial clinical reassessments and serial laboratory tests.

The patient did not present any new bleeding or hematoma progression on abdominal CT performed five days after the beginning of treatment. Yet, he presented unsatisfactorily progression with severe coagulopathy, sepsis, hemodynamic instability and multiple organ and system failure. No success was achieved in reversing his critical condition, and the patient died soon after.

DISCUSSION

Eighty percent of patients with duodenal mural hematoma have a history of abdominal trauma. Jewett et al. [7], reviewed 182 cases, including children and young adults with a mean age of 8 years old that confirms this association. Although the retroperitoneal position of the duodenum, which is partially attached to the anterior spine; this organ is more prone to injury if sufficient pressure is applied to the abdominal wall. In addition, the duodenal submucosa has a rich vascular plexus and presents a higher risk of bleeding [8-11]. Non-traumatic duodenal hematomas are reported in patients that undergo anticoagulants treatment, coagulopathy, and have a history of pancreatic disease, renal failure, duodenal aneurysm rupture or endoscopic therapy procedures with manipulation of the duodenal mucosa [9,12].

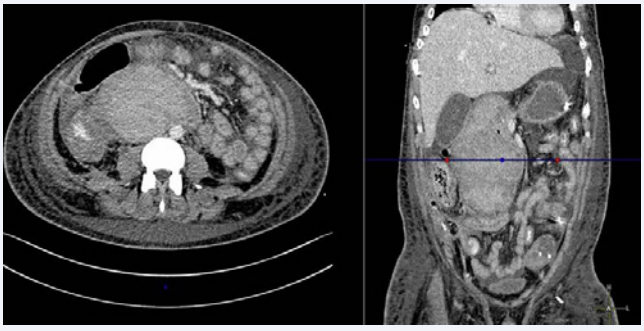

Figure 1,2 Intramural duodenal hematoma on CT.

Endoscopic hemostatic procedures, such as local epinephrine injection, sclerotherapy and hemoclip are commonly used as tools for hemorrhagic ulcers treatment. Combined therapy, in which diluted epinephrine injection precedes thermal coagulation or mechanical hemostasis, provides the best approach for successful outcomes [13]. The risk of complications with endoscopic treatment is uncommon [0.5%] and includes mostly of pneumonia aspiration and intestinal perforation [14]. Although risks are generally considered minimal, IDH may develop as a complication after diagnostic or therapeutic endoscopy, especially in patients susceptible to bleeding [9,15]. Rohrer et al. [16], reported that local epinephrine injection may cause damage to the mucosa to various degrees, leading to the onset hematoma. Some cases of duodenal hematoma after endoscopic therapy with sclerotherapy are described in the literature, and epinephrine has been used in all cases [8].

A typical IDH case presents intestinal obstruction, abdominal pain and vomiting. The hematoma expansion can compress and obstruct the duodenal papilla causing cholestasis and pancreatitis. Diagnosis can be confirmed through imaging tests, such as abdominal ultrasonography or CT scan [10,12].

Current management of IDH proposes a conservative approach, with a nasogastric tube and possibly the use of parenteral nutrition.

Due to the abundant irrigation of the area, it was commonly expected that the hematoma will be rapidly be absorbed. Surgical treatment should be reserved for cases in which perforation is suspected [9]. If there is a history of anticoagulant use, it should be suspended immediately, and fresh frozen plasma administered in order to reverse patient's condition [13].

The pathogenesis of bleeding in these situations, as in the case described, is probably multifactorial and cannot be explained on the basis of a single mechanism. Iatrogenic trauma [needle, endoscope, instrument, injection] and the underlying conditions play an important role in this case. Prolonged procedures, repeated endoscopic maneuvers and needle injection trauma may cause desquamation of the underlying mucosal, submucosal and fixed serosa, resulting in submucosal vessels rupture and, consequently, the formation of the hematoma [13,14]. Patience's that present the following combining factors, culminate bleeding and hematoma formation: co morbidities, platelet dysfunction, anemia, dialysis, accumulation of drugs due to lack of renal clearance, anticoagulation during hemodialysis and hemodialysis [13,16].

There are published cases that describe conservative treatment failures in cases of post-sclerotherapy IDH, which gets aggravated with jaundice, acute pancreatitis, continued bleeding, duodena perforation and death [2]. This case is usually associated with very ill patients, and usually deteriorates their health condition.

CONCLUSION

This case report describes an uncommon case of intramural duodenal hematoma after endoscopic hemostasis with sclerotherapy in a critically ill patient with chronic renal failure and immunosuppression. It is important to consider this kind

of complication when performing endoscopy in critical care patients especially in those with coagulopathy, renal disorders and other comorbidities.

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