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Diagnosis and Treatment of Upper Gastrointestinal Bleeding for the Primary Care Physician

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ABSTRACT

Upper gastrointestinal bleeding (UGIB) is a highly prevalent medical-surgical emergency that must be treated early due to its high morbidity and mortality. It presents as bleeding from the esophagus, stomach or proximal duodenum, and is divided into non-variceal and variceal etiology. Among non-variceal ulcers, peptic ulcer stands out as the most frequent, being this produced by an imbalance between protective and aggressive factors.

On the other hand, in variceal-type hemorrhages, gastroduodenal varices stand out, which are a consequence of increased portal pressure. The incidence of UGIB worldwide varies considerably between literature and mortality between 5 and 14% according to different studies. Unfortunately, there are no reliable national figures for incidence and prevalence. The physician must have a good understanding of the clinical presentation and pathophysiology in order to be assertive in the suspicion, diagnosis and management of this pathology. Regarding treatment, the confrontation is divided into emergency management and then endoscopic management, since early intensive resuscitation can reduce morbidity and mortality in patients with upper gastrointestinal bleeding.

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INTRODUCTION

Digestive bleeding (HD) is defined as any loss of blood from the digestive tract. It is a frequent disease in emergency services, with a mortality rate between 5-10%, depending on the etiology of the bleeding, comorbidity, age, amount and location. There are different classifications of gastrointestinal bleeding, however, the main ones are according to the site of origin and amount of bleeding. Depending on their location or site of origin, they can be classified into upper gastrointestinal bleeding (UGH), originating from the pharynx to the angle of Treitz (or duodenojejunal junction), and lower gastrointestinal bleeding (LGB), originating from distal to this point to year. It is important to mention that up to 10% to 20% of hemorrhages initially considered low are UGIB, this is relevant, so UGIB should be suspected in bleeding suspected as low, they are hemodynamic instability, high BUN/crea ratio and hematocrit bass. According to the amount of bleeding, they are classified as exsanguinating or massive, severe, moderate and mild, following the classification of the American College of Surgeons (1994).[1,2]

EPIDEMIOLOGY

UGIB is around 4-6 times more common than UGIB, with a worldwide prevalence of 48-160 per-100,000 people per year. It is twice more frequent in men than in women and predominates in advanced ages, with a similar mortality rate in both sexes. The gastroduodenal origin has currently been reported as the most frequent. UGIB has a mortality of 6-10%, being directly related to the cause of the bleeding and the patient's comorbidities. Sung et al, showed that 80% of patients with UGIB due to peptic ulcer died from causes not associated with bleeding. In the particular case of peptic ulcers, a mortality of 5-10% has been confirmed, with age and comorbidities being the main determinants. Patients with bleeding gastroesophageal varices, meanwhile, report mortality of up to 20% per event in the United States.[3,4]

CLINICAL MANIFESTATIONS

The forms of presentation of HDA are variable, among them are: Hematemesis: vomiting of fresh blood or digested blood remains. However, a respiratory (hemoptysis) or otorhinolaryngological origin must be ruled out, in the case of swallowed blood on some occasions. [5]

Melena(figura 1): black, pasty, sticky, foul-smelling, tar-like stools. It is the most frequent form of presentation of HDA, however, it can also be HDB with slow transit in which the hemoglobin has already undergone digestion and has been degraded by the enteric flora. The intake of food or drugs that can simulate mane, such as beets, bismuth salts, iron consumption, among other substances that usually stain the stool, should always be ruled out. The minimum amount of blood lost for melena to occur is estimated at 50 cm3 and can persist for up to 5 days after bleeding has ceased. [5]

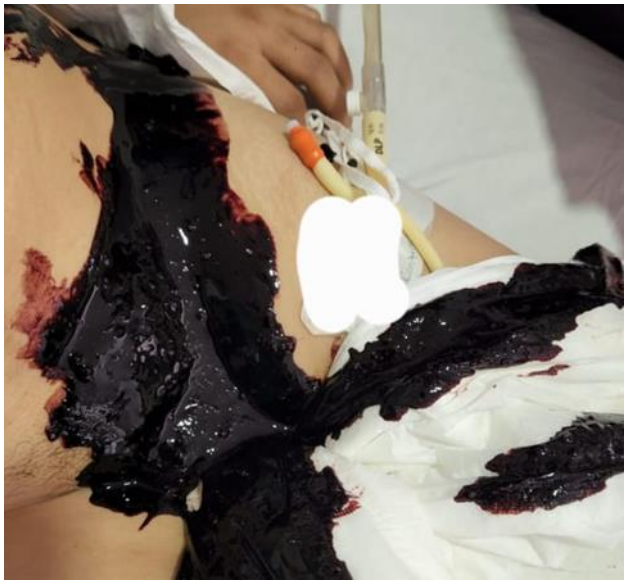

Figure 1. Melena.

Hematochezia: anal bleeding of a red color with clots. These are generally hemorrhages of the distal colon and rectum and when they have a higher origin (5% of cases) they indicate an acceleration of transit, patients in whom special care must be taken because it may indicate significant blood loss. [6,7]

Anemia due to chronic occult bleeding: the patient may consult due to symptoms or signs of anemia, be a laboratory finding or be evidenced in an occult bleeding test. Anemia due to chronic bleeding is usually of the iron deficiency type (microcytic, hypochromic), while those due to acute bleeding are normocytic and normochromic. [8,9]

ETIOLOGIES

The most frequent causes are gastroduodenal peptic ulcer, gastroesophageal varices and erosive lesions of the gastric mucosa. On the other hand, there are certain UGIBs in which the etiological diagnosis is not reached (undetermined), mainly due to the fact that the endoscopy was performed late and the acute lesions stopped bleeding. In general, UGIBs are divided into variceal and non-variceal causes. This differentiation is important because it implies a change in behavior and prognosis and because the prevalence of variceal UGIB has increased in recent years due to the increase in patients with chronic liver damage (CHD). [9]

It has been reported that non-variceal causes are more frequent than variceal ones, however, the figures for this relationship are not exact. Siau et al estimate that variceal causes correspond to 8% of UGIB. In patients with GHD, there are controversies regarding the first etiology. Galindo et al posit the ulcer cause, while others such as DeLaney et al and Villanueva et al posit the variceal cause in 50% and 75% of these cases, respectively. [10]

In a Canadian study that included 2020 patients with UGIB, pre-endoscopic factors were identified that increased the probability that UGIB was due to variceal causes, such as alcohol abuse, lack of antithrombotic use, hematochezia, hematemesis, and GHD stigmata . Thus, the history of GHD with clinical stigmata was associated with a 46% probability of variceal hemorrhage, while when all the criteria were present, this probability increased to 94%.[11]

DIAGNOSIS

A good history and physical examination allow an early clinical suspicion, where the confirmation of hematemesis and melena are key, making it necessary to establish the origin of the bleeding. In addition, performing an assessment of severity with risk stratification is essential for the patient's prognosis. On the other hand, this pathology is suspected in asymptomatic patients thanks to laboratory tests such as a complete blood count or an occult blood test, for which a series of basic laboratory tests must be performed to confirm the clinical suspicion. [12]

Management begins from the moment the patient is presented to the health service with a rapid initial assessment to determine the urgency of the situation. For this, a primary and secondary evaluation will be carried out. The primary evaluation will consist of evaluating the airway, breathing,

and circulation, and the secondary evaluation will consist of completing the history and physical examination. [13]

The reason for dividing priorities when a patient with this condition is admitted is because there is evidence that early intensive resuscitation with correction of hemodynamic parameters, hemoglobin and coagulopathies can reduce mortality in patients with UGIB. Thus, it is imperative to remember that the initial treatment for any patient with UGIB is resuscitation. This consists of restoring blood volume using intravenous fluids (crystalloids or Ringer's lactate), blood transfusions, and supplemental oxygen. [14]

In a patient with massive intestinal bleeding, it is essential to control the source of the bleeding before continuing with the usual management protocol for these patients. Fortunately, most UGIBs are self-limiting or the patient is stable enough for secondary evaluation. In the event that primary medical care is unable to provide definitive control of bleeding, immediate timely referral to a higher complexity center is recommended. On the other hand, if the patient is stable in the primary evaluation, and no comorbidities are found in the secondary evaluation that increase the risk of future complications, the patient could potentially be treated on an outpatient basis. [15]

Risk stratification systems should be used. The validated scales for this are the Rockall Classification and the Glasgow-Blatchford scale. [16]

The Rockall Classification's main purpose is to predict the mortality and risk of rebleeding in patients with UGIB, and based on this, to estimate the performance of an upper gastrointestinal endoscopy (EDA) prior to or during management9. The Glasgow-Blatchford scale consists of the use of 5 parameters (BUN, hemoglobin, systolic blood pressure, pulse, other markers) to assess risk. It has shown greater usefulness and superiority than the previous one in multiple previous studies, since it allows the risk assessment of patients with UGIB based on a series of clinical and quantitative variables without prior performance of an EDA. In addition, it estimates the patient's mortality and prognosis. Its main use is to identify high-risk patients who will need an emergency EDA, blood transfusion or even surgery to control UGIB. [15,16]

1. Proton pump inhibitors: PPI infusions are used in suspected HDA. Activation of intra-gastric pepsin by the acid medium inhibits platelet aggregation and facilitates clot rupture. Early administration of PPIs accelerates re-epithelialization of the gastric mucosa. [15]

2. Prokinetic drugs: The administration of these drugs such as metoclopramide or erythromycin have been shown to improve endoscopic diagnostic performance in patients with non-variceal UGIB. In addition, they reduce the need for repeat EDA. [16]

3. Splanchnic vasoconstrictors: This group is made up of octreotide (desomatostatin analog) and terlipressin (vasopressin analog). [16]

4. Antibiotics: Antibiotics are recommended for all varices with acute bleeding, due to a high rate of aggravating infection that affects the prognosis and etiopathogenesis of bleeding. As a result of variceal bleeding, these patients are at risk of developing spontaneous bacterial peritonitis. There is evidence that a 7-day treatment with a broad-spectrum antibiotic would reduce rebleeding rates. [17]

5. Non-selective beta blockers (propranolol): This group of drugs helps reduce portal pressure, thus reducing the risk of rebleeding. [17]

6. Tranexamic acid: Drug derived from amino acid lysine, it has a considerable antifibrinolytic effect and prevents the degradation of fibrin mesh. Current evidence shows that the use of this drug reduces the risk of rebleeding and mortality in non-variceal UGIB, without increasing thromboembolic risk. However, its routine use in clinical practice has not been recommended as more clinical trials are needed.[19]

ENDOSCOPIC MANAGEMENT

The gold standard for diagnosis, prognosis stratification and treatment of an UGIB is an EDA. It has a sensitivity close to 98%, and a specificity that varies between 30% and 100%. It has been seen that those patients with EDA of less than 24 hours or early, benefit much more than those who do it in a longer time. There is a significant difference between both groups due to higher mortality, degree of bleeding, longer hospital stay and higher recurrence of the pathology. With the EDA, it is possible to verify the site of bleeding, epithelial and mucosal damage, and carry out the Forrest classification, which positions patients, according to the variables of rebleeding, surgery, and mortality, in different risk strata. For non-variceal UGIB, treatment is reserved for Forrest Ia to IIb lesions. During endoscopy, immediate treatment can be performed mechanically, with injection therapy, thermal therapy or with spray and clips. [17,18]

CONCLUSION

HDA is a pathology with high morbidity and mortality. The decrease in its incidence worldwide can be explained by new medical and surgical treatments, or by better management with validated and constantly updated scales. On the one hand, medical management consists of PPIs,
vasoconstrictors, selective NSAIDs and other drugs that help contain bleeding. On the other hand, surgical management comprises multiple procedures, with upper gastrointestinal endoscopy being the gold standard for the management and treatment of UGIB. Finally, the importance of knowing the management of this pathology is concluded when a patient comes with this syndrome, where a primary evaluation (emergency management) and a secondary evaluation must be immediately provided, where the clinical history will be completed and the treatment will be decided. conduct to follow, finally leading to the prognosis and treatment of the pathology.

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