

Upper Digestive Bleeding in Children: Diagnosis and Treatment at Lome

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Abstract

Introduction: The diagnostic and therapeutic possibilities of upper gastrointestinal bleeding are limited in children especially infants in the tropics.

Goal: To describe the fibroscopic and therapeutic aspects of these hemorrhages at pediatric of Campus university hospital of Lomé to retain a therapeutic protocol.

Methodology: Acted analytical and descriptive retrospective study from 1st January 2007 to 31th December 2012 (six years), on records of children aged fewer than sixteen.

Results: Of 42 children, 28 with mean age of 5.5 years, 20 boys (sex ratio 2.5) were included, either an annual rate of seven cases. Treatment before admission was made based on non-steroidal anti-inflammatory (64.3%), and traditional powders (7.1%). The main clinical signs were hematemesis (100%), melena (32.1%), iterative vomiting (32.1%), abdominal pain (25%), dizziness (17.9%), seizures (14.3%), pallor palmar-plantar (78.6%), and anemic coma (21.4%). The associated morbidities were severe malaria (50%), acute nasopharyngitis (7.1%), and accidental ingestion of caustic soda (7.1%). The consultation period was between 24 and 48 hours in 20 cases. The fibroscopic diagnoses were Mallory Weiss syndrome (46.4%), esophagitis (25%), gastric ulcer (21.4%), and congestive gastritis (7.1%). Anemia was found in blood counts in 21 cases. Specific treatment was made based anti-secretory (17 cases) or packed red blood cells (13 cases). The outcome was favorable in 24 cases but three cases of death following a hemodynamic shock were found.

Conclusion: Accurate diagnosis of upper gastrointestinal bleeding requires early upper gastrointestinal endoscopy in any child with hematemesis and/or melena for its proper care.

Keywords: *Gastrointestinal Bleeding; Hematemesis in Children; Upper Gastrointestinal Endoscopy*

Introduction

Upper gastrointestinal bleeding is defined as the shedding of more or less blood from a blood vessel above the Treitz ligament in the gastrointestinal tract [1]. It can manifest as abdominal pain, dizziness, convulsive seizures, deterioration of the general state, or by states of shock.

It can be expressed in 80% of cases in the form of hematemesis and/or melena or in the form of rectal bleeding if it is abundant [2]. The annual incidence of upper gastrointestinal bleeding is 143 cases per 100,000 inhabitants in France and 62 cases per 100,000 inhabitants in the Netherlands [3,4]. The esophago-gastroduodenal fibroscopy is essential for the diagnosis of upper gastrointestinal bleeding by making it possible to specify the lesion in question in more than 80% of cases, thus conditioning immediate management and subsequent therapeutic orientation [5]. The major problems in the treatment of upper gastrointestinal bleeding are the risk of long-term or short-term of bleeding recurrence and the high cost of management [5]. It seemed appropriate to evaluate the management of upper gastrointestinal bleeding in children. It is in this perspective that we have undertaken this work. The aim is to describe the fibroscopic and therapeutic aspects of upper gastrointestinal bleeding in children in the pediatric ward of Campus University Hospital Center (CHU-Campus) in Lomé, the capital city of Togo, in order to define a protocol to improve their management.

Patients and Methods

The pediatric unit of the CHU-Lomé Campus served as a study framework. It is the second reference service for children’s health in Togo. We carried out a retrospective and descriptive study from January 1st 2007 to December 31st 2012, which corresponds to 6 years.

In the study, all children under 15 years of age who had hematemesis and underwent oesogastro-duodenal fibroscopy were included. The oesogastro-duodenal fibroscopy was done under sedation with a probe adapted to age and weight. The children also benefited from a blood count to clarify the degree of anemia and to decide on blood transfusion.

The parameters were age, sex, level of education, reason for consultation, personal and family history, time of consultation, physical examination data, results of paraclinical examinations, treatment, monitoring, and evolution. The data used to carry out this work were collected from a survey sheet.

Results

Epidemiological and socio-demographic data

Of 42 children hospitalized for suspected upper gastrointestinal bleeding, 28 were retained in six years according to our inclusion criteria; which equates to an annual frequency of seven cases. This study involved 8 girls (28.57%) and 20 boys (71.43%), a sex ratio of 2.5. The average age of the children was 5.5 years with extremes of 1 and 180 months. There were 16 infants including four under six months old. Fathers were artisans (75%), and public servants (25%). The mothers were shopkeepers (30.29%), housewives (32.14%), craft’s women (28.57%), and civil servants (09%).

Reason for consultation

Hematemesis being our inclusion criterion was present in all cases. Other signs associated with hematemesis were melena (32.14%), food vomiting (32.14%), abdominal pain (25%), dizziness (17.86%), and seizures (14.29%).

Circumstances of occurrence of hematemesis

The circumstances of occurrence of hematemesis were represented by severe malaria (50%), as summarized in table 1.

Table 1: The circumstances of occurrence of hematemesis.

Circumstance	Effective	Percent
Severe malaria	14	50.00
Repeated itching	04	14.29
Acute rhino-pharyngitis	02	7.14
Irregular daily meal	04	14.29
None	04	14.29

Treatments received by patients before the onset of upper gastrointestinal bleeding

The treatments received before the onset of bleeding were nonsteroidal anti-inflammatory drugs (NSAIDs) (64.27%) and traditional powders (7.14%). In 32.86% of cases, no treatment was given before the onset of upper gastrointestinal bleeding.

Delay between onset of illness and consultation

The consultation time was fewer than 24 hours in 10.71% of cases, between 24 and 48 hours in 71.43% of cases, and more than 48 hours in 17.86% of cases.

Data from the clinical examination

Some patients had more than one clinical signs at the same time. The clinical signs found are illustrated in table 2.

Table 2: The clinical signs found on examination.

Clinical sign	Effective	Percent
Severe palmoplantar pallor	20	71.43
Pale palmo-plantar pallor	02	7.14
Altered consciousness	06	21.43
Abdominal tenderness	07	32
Jaundice	02	7.14
painful hepatomegaly	02	7.14
Abdominal collateral vein circulation	01	

Paraclinical data

Esogastro-duodenal fibroscopy revealed objective lesions as Mallory Weiss syndrome (46.43%), gastric ulcer (21.43%), congestive gastritis (7.14%) and esophagitis (25%).

Anemia was found in 75% of cases with hemoglobin levels between three and five grams per deciliter (g/dl) in 7.14% of cases; five and 8 g/dl in 35.71% of cases; and eight and 11 g/dl in 32.14% of cases.

Treatment

The children received treatment with ranitidine (60.7%), red blood cell (46.4%), iron with vitamins (39.3%), omeprazole (28.6%) amoxicillin and metronidazole (21.4%). Oxygen therapy was necessary in six cases.

Evolution

The evolution was favorable in 85.71% of the cases. One patient had relapsed 72 hours after discharge. Three (10.71%) patients died as a result of haemodynamic shock.

Discussion

Limits

The main limitation of our study is the difficulty of obtaining some data or clarification of certain symptoms related to the fact that the study is retrospective. Nevertheless, the recorded data give fairly accurate information to obtain reliable results.

Epidemiological data

In our study, the average age was 5.5 years, with a predominance of the age group of 0.5 to 2.5 years (42.86%). Our results are similar to those of ACHAHBAR who found a mean age of 5.5 years with a predominance of infants (39%) at Hassan II CHU in Fes in 2013 in Morocco [6] and those of Sonia., *et al.* 33.39% in Tunisia in 2013 [7]. These unanimous results could be explained by the fact that certain etiologies are more frequently found in infants, on the one hand, and in our countries, on the other, the main causes such as peptic esophagitis, which is the most frequent etiology. Digestive hemorrhages at all ages (37% of cases) and especially in infants (57% of cases) [8]. Drug ulcerations of the esophagus or stomach do not benefit from preventive methods that could have significantly reduced the prevalence of gastrointestinal bleeding. We found a male predominance (71.43%), with a sex ratio of 2.5; similar to that of Achahbar in 2013 and by Idrissi., *et al.* in Morocco in 2010, which found rates of 56.5% and 58% respectively [6,9].

Reason for consultation

The main reason for consultation was hematemesis (100%) in our study. Our results are superior to those of Achahbar [6] (71.5%) and Mouterde., *et al.* [10] in France (89%). This could be explained by the fact that externalized bleeding is a sign of extreme gravity in the eyes of the population of our country which motivates consultation. Usually, in front of an illness, one tries first of a treatment at home then recourse to the hospital in case of failure.

In our study, melena was found in 9 cases (32.14%). According to Mouterde., *et al.* [10], upper gastrointestinal bleeding can be manifested in the form of melena (20%) and non-externalized diagnosed in the presence of malaise or shock (20%). A complete assessment is necessary in the exploration of unexplained shock states in children.

Previous disease

In our study, 50% of patients had a history of severe malaria. This non-negligible percentage is explained by the fact that our study was conducted in a malaria-endemic area where children are the most affected. In our study the notion of iterative vomiting was found in 25% of children. Benhamou., *et al.* [11] had demonstrated that Mallory Weiss syndrome following violent or vomiting efforts during a gastrointestinal infection or malaria, for example, hematemesis is generally not severe.

In our study, the notion of taking NSAIDs before the onset of hematemesis was found in 28.57% of cases. Lesions resulting from taking NSAIDs are usually gastric rather than duodenal and occur more often in the gastric antrum [12]. In pediatric patients, ulcers due to NSAIDs are not frequent enough as in adults [12]. Mulberg., *et al.* [13] reported a series of 17 children treated with NSAIDs, 76% of whom had ulcer (20%), gastritis (46%) and endoscopic lesions, oesophagitis (10%). The prescription of nonsteroidal anti-inflammatory drugs must be rational and justified in view of the risks to which children are exposed. The notion of accidental ingestion of soda was found in 7.14% of our patients. Okoko., *et al.* [14] found a rate of 37.8% in 2011 in Congo Brazzaville. Boudabbous., *et al.* [15] in 2014 in France found a rate of 11.41%. These results can be explained by the fact that ingestion of caustics is a frequent accident in children [16]. We found an irregular meal intake in 14.29% of children. Dietary fiber is thought to protect the gastric and duodenal mucosa [18]. To prevent peptic ulcers, children should be given several small meals at regular intervals, and their stomachs should not be left empty for a long time.

Consultation time

The consultation time was long, between 24 and 72 hours, in 71.43%.

In fact, in the presence of upper gastrointestinal haemorrhage, which constitutes a pediatric emergency, parents should immediately consult a center equipped for adequate care. The delay in consultation may be related to the financial difficulties that oblige parents to consult first in some peripheral health facilities or in traditional healers who do not have the necessary technical platform. The management of upper gastrointestinal bleeding remains expensive compared to the low socio-economic level of the patients, and the majority of them do not benefit from any medico-social coverage.

Data from the physical examination

Among clinical signs, pallor was found in 82.14% of patients. This relatively high percentage is explained by anemia caused by upper gastrointestinal bleeding. Paleness is a sign that must be sought systematically in any patient who bleeds.

Para-clinical data

The hemoglobin level was used to evaluate the impact of the bleeding. However, recent haemorrhage may not alter hemoglobin [18]. In our series, anemia was found in 75% of cases and was considered severe (hemoglobin level fewer than 7 g/dl) in 42.85% of cases. This finding is consistent with literature data [1,18].

Esophago-gastroduodenal Fibroscopy (FOGD) leads to a precise lesion diagnosis in the presence of upper digestive hemorrhage in 85 to 90% of cases [19]. The completion of a FOGD within 24 hours after admission of a patient suspected of upper gastrointestinal bleeding allows a reduction in transfusion requirements, the endoscopic repetition rate and the emergency surgery rate [20-22]. The influence of this delay on mortality remains controversial [20-22]. A meta-analysis of three randomized trials did not show any benefit in achieving early FOGD in terms of mortality, hemorrhagic recurrence, or surgery [22]. Nevertheless, in high-risk patients, early endoscopy may be useful.

In our series, the FOGD revealed a predominance of Mallory Weiss syndrome in 46.43% of cases and gastric ulcer in 21.43% of cases. Our results are clearly superior to those of Sonia, *et al.* [7] in Tunisia who report Mallory Weiss syndrome in 1.79% of cases, gastric ulcer in 1.95% and Achahbar [6] in Morocco who found Mallory Weiss syndrome in 1, 49% of cases and gastric ulcer in 5.22% of cases. These authors had found in the course of their study a primacy of gastritis at rates of 40.71% and 44.04% respectively. In most tropical infections, digestive signs, especially vomiting, are in the foreground; which could explain the results recorded.

Treatment

In our study, Mallory Weiss syndrome was found in the majority of cases (46.43%), treated with proton pump inhibitors (PPI) or anti secretory associated with antiemetics. Only 6 patients received treatment for eradication of helicobacter pylori because of their gastritis or gastric ulcer. However, in the case of gastric or duodenal ulcers, the eradication of helicobacter pylori is associated with a more rapid disappearance of endoscopic signs of bleeding, without any significant change in the risk of early bleeding recurrence [23].

Evolution

The evolution was favorable in 85.7% of the cases. However, one patient had a bleeding recurrence. Achahbar [6] and Hanane [9] reported recurrence in 14.9% and 1.09% respectively. Mortality in our study (10.71%) was lower than that of Chaabouni, *et al.* [24] in Tunisia (22.9%). Achahbar [6] did not register any deaths. Our results could be explained by the shorter or longer consultation time (greater than 24 hours in 71% of children) making it difficult to take care of, especially in some children already showing signs of anemia.

Conclusion

The main etiologies of hematemesis were Mallory Weiss syndrome and gastric ulcer confirmed by fibroscopy which is the examination of choice with its triple interest: diagnostic, therapeutic and prognosis. Thanks to the dosage optimization of pediatric medications, ulcerative and inflammatory diseases are effectively treated. Surgical management of gastrointestinal bleeding was not necessary. Our study found a high mortality during digestive haemorrhage due to the abundance of bleeding, distance from care centers and lack of financial means to pay for adequate treatment.

Conflicts of Interest

None.

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