Original Article

Significance of Upper GI endoscopy for the detection of upper GI bleeding in children

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Objective: To determine the significance of Upper GI endoscopy for the detection of upper GI bleeding in children visiting a tertiary care hospital, Karachi, Pakistan.

Methodology: A total of 122 Children attending the pediatric emergency and pediatric unit of civil hospital Karachi with history of upper GI bleeding were included in this study which lasted for six months from May 1, 2015 to November 30, 2015. After 24 hours of stabilization when bleeding stopped then endoscopy was done. For gastritis, biopsy was taken for histopathology. Gram -ve (S shape rod) bacteria were labeled as H. pylori.

Results: Mean age was 4.8±3.2 years with M:F ratio of 2.2:1. Esophageal varices was the most common cause of upper GI bleeding seen in 80 (65.6%) patients, followed by gastric erosion in 60 (49.2%) and H. pylori in 15 (12.3%) cases.

Conclusion: Upper GI Endoscopy is safe procedure of utmost importance in identifying the cause of upper GI bleed in children, providing valuable information on the pattern of upper GI diseases in children. Esophageal varices was the most frequent cause of upper GI bleeding followed by gastric erosions. (Rawal Med J 201;43:209-212).

Key Words: UGI bleeding, Esophageal varices, gastric erosion, H Pylori.

INTRODUCTION

Acute upper gastrointestinal (GI) bleeding is uncommon but potentially serious problem in children.[1] It accounts for about 20% of all GI bleeding in childhood and mortality is less than 1%.[2,3] Etiology in children is different than adults. Peptic ulcer disease is the most common cause (33-39%) of upper GI bleed in children in west, whereas in India, variceal bleeding was reported to be the most frequent cause (40-95%) of upper GI bleed.[4] In Hong Kong, duodenal ulcer is reported to be dominant cause (75%) of acute upper GI bleeding in children.[5] Other causes include gastric erosion (28%),[5] Helicobacter pylori (H. pylori)[7] and peptic ulcer.[7,8] Drugs can cause mucosal damage, specially non-steroidal anti-inflammatory drugs (NSAID), cox-2 inhibitor and paracetamol and in young children below 2 years drugs accounts about 56%.[2,9] Allergic eosinophilic gastritis though rare, usually occurs in infancy and adolescence.[10]

Upper GI Endoscopy is safe procedure of utmost importance in the identifying the cause of upper GI bleed in children, providing valuable information on the pattern of upper GI diseases in children. Purpose of this study was aimed to detect various causes of upper GI bleeding by doing Upper GI endoscopy in locally, as it was potentially serious problem thus emphasizing its important in children so the results could be used in planning management and prevention strategies.

METHODOLOGY

This descriptive study was carried out at Pediatric Unit, Civil Hospital, Karachi, Pakistan from May 1, 2015 to November 30, 2015, with Non probability purposive sampling. The sample size was calculated by using the 28% (gastric erosion) with 95% confidence interval and maximum error of 8%, the computed sample size was 122. Children were enrolled after taking informed/verbal consent from parents/guardian. Children with age: >2 years to 15 years, both genders, history of upper GI bleeding within 24 hours with or without having history of chronic liver disease were included in the study. Patients with bleeding diathesis (thrombocytopenia or platelets functional defect, very sick children or patient in a state of DIC were excluded from the study. Bleeding was considered Moderate when no anemia (Hb more than l0gm/dl), severe when anemia (Hb less than between 7 to

l0gm/dl) and very severe when Hb less than 7gm/dl.

In the initial 24 hours after admission, children were stabilized by giving intravenous fluids and complete blood count done, PT, APTT sent to laboratory. Children who had severe anemia were transfused packed cells (10ml/kg). After stabilization of patient when bleeding stopped then endoscopy done. Endoscopy was done by researcher himself, who had 3-year experience of performing endoscopy. Data analysis was done by SPSS Version 15.0.

RESULTS

Out of 122 children, there were 84 (68.9%) male and 38 (31.1%) female with male to female ratio 2.2:1. Mean age of children was 4.8±3.2 years. Majority (n=67, 54.9%) of cases reported within 12 hours of bleeding while 55 (45.1%) children reported after 12 hours of bleeding. The mean interval between bleeding episodes and presentation to our center was 13.5±10.2 hours. Other data characteristics are shown in Table 1.

Table 1. Data Characteristics.

Characteristics	No	%
Age Distribution		
≤ 5	**87**	**71.3%**
6-10	**25**	**20.5%**
> 10	**10**	**8.2%**
Gender Distribution		
Male	**84**	**69%**
Female	**38**	**31%**
Frequency of Bleed		
Single Episode	**51**	**41.8%**
Multiple Episode	**71**	**58.2 %**
Severity of Blood		
Moderate	**40**	**32.8%**
Severe	**55**	**45.2%**
Very Severe	**27**	**22.1%**
Causes of upper gastrointestinal bleeding		
Esophageal Varices	**80**	**65.6%**
H/O CLD +ve	**67**	**83.75**
H/O CLD -ve	**13**	**16.25**
Gastric Erosion	**60**	**49.2%**
H. Pylori	**15**	**12.3%**

Table 2. Causes of upper GI bleeding (N=122).

Age (Years)	Esophageal Varices	Gastric Erosion	H. Pylori
Causes of Upper Gastrointestinal Bleeding in Age Groups			
≤5	57 (71.3%)	41 (68.3%	11 (73.3%)
6 - 10	20 (25%)	12 (20%)	3 (20%)
> 10	3 (3.7%)	7 (11.7%)	1 (6.7%)
Causes of upper Gastrointestinal Bleeding according to Gender			
Male	58 (72.5%)	48 (80%)	9 (60%)
Female	22 (27.5%)	12 (20%)	6 (40%)
Causes of upper gastrointestinal Bleeding and severity of bleeding			
Moderate	28 (35%)	20 (33.3%	5 (33.4%)
Severe	40 (50%)	30 (50%)	8 (53.3%)
Very Severe	12 (15%)	10 (16.7%)	2 (13.3%)
Causes of upper gastrointestinal Bleeding and duration of bleeding			
≤12	45 (56.3%)	40 (66.7%	10 (66.7%)
> 12	35 (43.7%)	20 (33.3%)	5 (33.3%)
Causes of upper gastrointestinal Bleeding and frequency of bleeding			
Single Episode	24 (30%)	21 (35%)	4 (26.7%)
Multiple Episode	56 (70%)	39 (65%)	11 (73.3%)

Causes of UGI bleeding revealed that 51 (72.5%) were esophageal varices, 48 (80%) gastric erosion and 9 (60%) H. pylori. Forty (50%) cases of esophageal varices, 30 (50%) cases of gastric erosion and 8 (53.3%) cases of H. pylori presented with severe UGI bleeding. The causes of upper GI bleeding in duration of disease and frequency of bleeding are shown in Table 2.

DISCUSSION

Advances in endoscopy, radiology and the development of newer therapeutic modalities have helped to pin point the cause of bleeding more accurately and to treat it effectively. Chronic GI bleeding may present as recurrent melena or with recurrent heme positive stools with or without anemia. These are the patients who present the greatest diagnostic challenge and therapeutic dilemma.[11] Rare causes of UGIB include aortoenteric fistula, gastric antral vascular ectasia, angiectasias and Osler-Weber- Rendu syndrome.[12]

In this study, esophageal varices were the most common cause of upper GI bleeding found in 65.6% cases. This is in agreement with reports by from

Saudi Arabia[13] and India.[14,15] In our study, gastric erosion was the second common cause of UGI found in 49.2%, which is similar to other studies.[16,17] A study from Iran reported that the most common cause of upper GI bleeding in children was gastric erosions found in 28% children.[6]

H. pylori were the third common cause of UGI found in 12.3% cases. In India, 60% of the population has evidence of H. pylori infection by 10 years of age.[88] The present study observed H. pylori infection with lesser frequency than other reports.[15,18] This difference may be due to lower age of our patients as with increasing the age, the causes of upper GI bleeding became more similar to adult.[16,17]

In our study, bleeding was frequent in male and in lower age group (i.e. <5 years). A study from Saudi Arabia showed mean age of presentation was 10 years and 14.35% had H Pylori gastritis.[20] A different study from Pakistan showed gastritis the most common abnormal endoscopic finding, seen in 14.5% of patients and the mean age of patients was 8.5 years [19], while in our study the most common cause of upper GI bleeding was esophageal varices (65.6%).

CONCLUSION

Esophageal varices were the most frequent cause of upper gastrointestinal bleeding found in 65.6% children and gastric erosion disease constituted the second common lesions presenting with upper GI bleeding in children. Upper GI Endoscopy is safe procedure in the identifying the cause of upper GI bleed in children, providing valuable information.

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