Incidence of esophageal varices in patients with upper gastrointestinal bleeding

ABSTRACT

Objective: To determine the frequency of esophageal varices as a cause of upper gastrointestinal bleeding.

Methodology: This descriptive cross sectional study was conducted in the emergency room and the department of medicine Khost Provincial Hospital Khost -Afghanistan. Duration of data collection was six months starting from January 5, 2021 to June 4, 2021. The study included one hundred and six patients suffered from upper GI bleeding. After initial history and clinical examination, upper GI endoscopy was performed to evaluate the cause of bleeding and all the relevant data was entered in the specific proforma designed by researchers.

Results: One hundred and six patients (60 male and 46 females) of upper GI hemorrhage were included in the study. Mean age was 45.78 years (SD ±14.86) with age range of 21- 85years. Twenty patients had esophageal varices while 28 patients had duodenal ulcer, 31 had gastric ulcer, 14 had Gastric carcinoma,9 patients had gastroduodenal erosions, three patients had Mallory Weiss tear and one patient had esophageal growth.

Conclusion: In this area (Khost – Afghanistan) where this study was conducted, esophageal varices are the second most common cause of upper GI bleeding.

KEY WORDS: Endoscopic findings, Esophageal varices, Esophageal growth, Gastroduodenal erosions, Gastric ulcer Hematemesis, Melena, Peptic ulcer.

INTRODUCTION

Upper gastrointestinal (GI) hemorrhage is a serious emergency associated with noteworthy morbidity and mortality. In all over the world, it has been remaining a common cause for admission to hospitals. Both hematemesis and melena or either alone, are famous manifestations of Bleeding from gastrointestinal tract.[1] Upper GI hemorrhage may rarely present in the form of hematochezia.[2]

The definition of hematemesis is vomiting of gross blood.[1] In United States , the annual incidence of upper GI hemorrhage is approximately 48-160/100,000 with a mortality of 5%.[3] Increasing age, comorbidities and hemodynamic compromise (tachycardia or hypotension) are three independent clinical predictors of death in patients hospitalized for upper GI hemorrhage.[4]

A number of sources that upper GI hemorrhage may originate from , are:

1. Esophageal varices & portal hypertensive gastropathy.
2. Peptic ulcer disease.
3. Gastric neoplasms.
4. Gastro-duodenal erosions
5. Erosive esophagitis.
6. Mallory Weiss tear.
7. Others as angiodysplasia, Dieulafoy's lesion, aortoenteric fistula, hemobilia, hereditary hemorrhagic telangiectasia, uremia and coagulation disorders.[5]

Between different geographical areas of the world, the multifactorial etiology of upper GI bleeding varies widely. Peptic ulcer and esophageal varices are the two most common causes of the GI bleeding and of the two the esophageal varices are the most common cause of upper GI bleeding in India.[6] Esophageal varices are dilated submucosal veins that build up in patients with causal portal hypertension. Cirrhosis of liver is the most common cause of portal hypertension.More recent data propose that the amount of cases as a consequence of peptic ulcer disease has decreased.[7]

Variceal bleeding is the cause of bleeding in cirrhotic patients in 50-60%.Rebleeding in upper gastrointestinal bleeding occurs in 7-16%, despite endoscopic therapy. Rebleeding is especially high in variceal bleeding and peptic ulcer bleeding. Mortatality ranges between 3 and 14% and didn't change in the past 10 years.[8] Mortality risk is about 24.1 % after each episode of variceal bleeding . Until gastroesophageal varices are obliterated, the risk of rebleeding is about 29.4% high.[9] After variceal hemorrhage, one year survival can be poor. The severity of the liver disease, the size of the varices and the presence of red markings on the varices are considered the three independent predictors of bleeding .[10]

The study which was conducted to find out the frequency of esophageal varices in upper GI

bleeding; a common medical emergency in our Khost province of Afghanistan. The potentially fatal complications of chronic hepatitis and cirrhosis like esophageal varices are reduced by avoidance and on time treatment of the mentioned diseases.

METHODOLOGY

This is a descriptive cross sectional study.It was conducted in the emergency room and the department of medicine Khost Provincial Hospital Khost - Afghanistan. The data was collected in six months , starting from January 5, 2021 to June 4, 2021. One hundred six patients of upper GI bleeding were included in the study. Nonprobability purposive sampling technique was used.All the patients who are adult coming to the hospital with upper gastrointestinal bleeding in the form of hematemesis or melena were included. Exclusion criteria were : 1. when in the upper or lower airway ,there was a source of bleeding. 2. Non-cooperative patient as those with the advanced hepatic encephalopathy. 3. Because of some medical problems such as severe cardiac or respiratory illness or hemodynamically unstable patient was not fit for endoscopy. 4.Patients who rejected hospital admission for further investigations and treatment.

During the data collection period of six months, totally one hundred six(106) patients of upper GI bleeding were included in the study. The patients of upper GI bleeding on the basis of hematemesis and melena, were diagnosed clinically. These patients were admitted through the emergency room and the medical outdoors of Khost Provincial Hospital Khost – Afghanistan. Regarding admission and further treatment, informed consent was taken. Taking history, which included the duration and amount of hematemesis and color of the vomitus,made the provisional diagnosis. About precipitating factors such as alcohol taking , NSAIDs use or the use of anticoagulants was asked. Inclusive general physical examination was performed. Digestive , respiratory, cardiovascular and central nervous system were examined along with examination for epigastric tenderness and signs of chronic liver disease. Upper GI endoscopy performed which served both diagnostic and therapeutic purposes. Endoscopic evaluation of patients with upper GI bleeding was done by the endoscopy unit of Lemar diagnostic and therapeutic Center Khost city – Afghanistan. Procedure was done using 4% Xylocaine throat spray. No sedating premedication was used. For growth and gastric ulcer with doubt of malignancy , biopsies were taken from growth and the ulcer periphery and were sent for histopathology. For analyzing of data ,Statistical Package for Social Science (SPPS) version 20 was used. Descriptive statistics for numerical data i.e. age was calculated as mean ± SD, while categorical data i.e. gender, esophageal varices and other causes of upper GI bleeding were calculated as frequencies and percentages. Test of significance was not used and level of significance (p- value) was not estimated, because this was a descriptive study and no need for p- value estimation .

RESULTS

The study included a total of one hundred six,60 (56.6%) male and 46 (43.4%) female patients. Mean age was 45.78 years (SD ±14.86) with age range of 21- 85 years. Fifty nine (55.66%) patients presented with both hematemesis and melena while 25 (23.59%) patients had only melena and 18 (16.98%) patients had hematemesis alone.Twenty (18.86%) patients 12 male and 8 female had variceal bleeding. The provisional etiological diagnosis of cirrhosis of liver was confirmed in all patients with variceal bleeding. Jaundice was present in 12(60%)patients. All patients had one or other signs of cirrhosis such as abdominal distention/ascites, splenomegaly, spider nevi, gynecomastia, decreased area of liver dullness and loss of normal distribution of hair. Viral markers serology showed that 9(45%) patients were positive for anti HCVantibodies and 8(40%) patients were positive for hepatitis B surface antigen. In the remaining 03(15%) patients, viral markers were negative. One of them had Wilson's disease and two were non-alcoholics steatohepatitis. Two patients had portal hypertensive gastropathy along with esophageal varices. Tachycardia, hypotension and pallor were detcted in 9(45%) patients while the remaining were hemodynamically stable.

Gastric ulcer was diagnosed in 31 patients (29.2%), 17 males and 14 females. Epigastric pain history was present in 16 patients. Five patients suffered from mild epigastric tenderness. Eight patients (5 males &3 female) were using aspirin for osteoarthritis. In six
patients upper GI bleeding caused hypotension and tachycardia .

Table 1: Shows the serology for viral markers.

Type of virus	Numbers	Results	%
HBs Ag	8	Positive	**40**
	12	Negative	**60**
Anti HCV	9	Positive	**45**
	11	Negative	**55**

Twenty eight (26.41%) patients were suffering from duodenalulcer (15 males; 13 females). The history of duodenal ulcer with hunger pains and relief

of symptoms with food and antacids was present in 19 patients while the other patients didn't give such history. Twenty patients were positive for stool H.pylori antigen.None of the patients was alcoholic. Hypotension,pallor and tachycardia were present in six patients while the remaining were hemodynamically stable.

Nine (6 male 3 female) had Acute gastroduodenal erosions. Seven (7)patients had the history of NSAIDs ingestion for various reasons. Onset of hematemesis was sudden with mild epigastric pain and tenderness.

Table 2: Endoscopic diagnosis of patients suffered from upper gastrointestinal hemorrhage.

Serial No.	*Causes of upper GI hemorrhage*	Male	Female	Total	Percentage
1	Esophageal varies	12	8	20	18.86%
2	Gastric ulcers	17	14	31	29.2%
3	Duodenal ulcers	15	13	28	26.41%
5	Mallory Weiss tear	1	2	3	2.83%
6	Gastric carcinoma	8	6	14	13.2%
7	Esophageal growth	1	0	1	0.94
8	Gastro duodenal erosions	6	3	9	8.49
Total		60	46	106	100

Gastric growth (Carcinoma of the stomach) was responsible for upper gastrointestinal bleeding in 14 patients (13.2%). These patients were more than 40 years old and had a history of hematemesis, melena,loss of weight,epigastric pain and anemia. Clinical examination showed marked weight loss and mild epigastric tenderness. Endoscopy revealed gastric ulcers with suspicion of malignancy and growths which were proved by histopathology. One patient had esophageal growth suffering from dysphagia and hematemesis.

Mallory Weiss tearwas responsible for upper gastrointestinal bleeding in three patient (2.83%).

DISCUSSION

Acute upper gastrointestinal bleeding (UGIB) continues to be a common cause of hospital admission and morbidity and mortality.[11] The most common etiology of upper GI bleeding is peptic ulcer disease, followed by erosive gastroesophagitis, gastroesophageal varices, Mallory-Weiss tears, Dieulafoy's lesions, gastric antral vascular ectasia (GAVE), portal hypertensive gastropathy (PHG), aortoenteric

fistula, malignancy, and other rare conditions.[12]The primary diagnostic test for evaluation of upper GI bleeding is endoscopy. Endoscopy for upper GI bleed has a sensitivity of 92%–98% and specificity of 30%–100%.[13]

Peptic ulcer and esophageal varices are accounted the two most common causes of the gastrointestinal bleeding. Gastric carcinoma was the third common cause of upper GI bleeding in this study, but it is said that variceal bleeding has been found a relatively unusual cause of upper GI bleeding in the Western countries 5.1%.[14] In the United States, among the total cases of upper GI bleeding, the percentage of variceal bleeding varies from 4% to 20% [15] and bleeding due to peptic ulcers account higher than 50%.[16] But in the region, for example in Pakistan , the Variceal bleeding revealed the most common cause of upper GI bleeding in several studies.[17,18] A study conducted in Nepalabout the causes of upper gastrointestinal bleeding ,revealed that esophageal varices were (47.5%) and peptic ulcer disease (33.3%)[19]. A study which was completed on 114 patients in 2019 in Himalaya medical institute in India, outlined some of the most important causes of bleeding from upper gastrointestinal tract with gastric and esophageal varices being the most significant (56.14%) followed by peptic ulcer (14.91%).[6] The reasons that in our study the variceal bleeding was the second most common cause of gastrointestinal bleeding are :

1.In Pakistan Meta-analyses estimated the pooled mean HCV prevalence at 6.2% among the general population, 34.5% in high-risk clinical populations, 12.8% in populations at intermediate risk, 16.9% among special clinical populations, 55.9% among populations with liver-related conditions and 53.6% among people who inject drugs.[20] In Afghanistan Meta-analyses estimated HCV prevalence at 0.7% among the general population, 32.6% among PWID and 2.3% among populations at intermediate risk.[21]

2. The prevalence of H.pylori is another reason that percentage of peptic ulcer is higher than esophageal varices as a cause of GI bleeding. A study conducted in Pakistan , total of 201 (45%) cases were found positive for *H. pylori out of 450 dyspeptic idividuals*[22] *while in Afghanistan,* 152 patients with dyspepsia were included in a study ; 59 were men

(40.0%), and 93 were women (60.0%). The overall seroprevalence of *H. pylori* was 75.6%.[23]

But the result of our study is consistent with results of Iranian study. A study which was completed in Shiraaz medical university Iran in 2009 on 572 patients showed that 44% of bleeding from upper gastrointestinal tract was caused by Peptic ulcer.[24]

CONCLUSION

It is worth mentioning to realize that gastrointestinal bleedingis a fatal and challenging problem and caused mostly by peptic ulcer and esophafeal varices in Afghanistan.Esophageal variceal bleeding is a shocking complication of portal hypertension and is an important cause of disability and death in patients with upper GI bleeding. Once variceal bleeding has occurred , the prognoses are poor, so prevention of chronic hepatitis and cirrhosis is extremely crucial .

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