EDITORIAL

Comparison Between Endoscopic Sclerotherapy and Band Ligation for Haemostasis of Variceal Bleeding at National Centre for Gastrointestinal and Liver Disease, IbnSina Specialized Hospital – Khartoum

Alaeldin A.Hamoda[1], AbdulmagidMMusaad[2], Nassir A Arabi[3]

1. Senior registrar of general surgery(GNCPS).
2. FRCSI, Professor of GI surgeryfaculty of medicine, Omdurman Islamic university, department of GI surgery IbnSina Specialized Hospital.
3. MD, MRCS-ED,Assistant professor of surgery, faculty of medicine, Omdurman Islamic University, department of GI surgery IbnSina Specialized Hospital

Corresponding author: AlaeldinAHamoda,E-mail: spelcastro@gmail.com,Tel: +249918100677

Abstract:

The objective of this hospital-based and prospective study was to compare the outcome of endoscopic variceal sclerotherapy and band ligation regarding early and late rebleeding. Oesophagealvariceal bleeding is the most common cause of upper gastrointestinal tract haemorrhage. Patients with oesophageal variceal bleeding have higher rates of rebleeding, complications, and death than patients with non-variceal bleeding such as ulcer bleeding(1). Between the year Dec. 2016 –Apr. 2017 a total of 140 patients were reviewed. Variables selected for the study included: intervention type: whether it was sclerotherapy or banding , OGD findings at presentation, presence of shock upon presentation, duration of having the disease before the intervention and outcome of each procedure . Males were (110) females (40). The Majority of patients presented with hematemesis and melena (74.28 %), hematemesis alone occurred in (28.57%) and melena alone in (7.14%) of patients. All patients were diagnosed as portal hypertension due to PPF (Belharziasis) and most of them were from Gezira State. Most of the patients had portal hypertension for more than two years (41.4%). Sixty patients presented with different stages of shock (42.9%).Sengestaken tube was used to control bleeding in (5%) of patients. On the other hand 79.4% of patients received blood during resuscitation. Regarding OGD findings, nearly all patients were found to have OV alone (97.6). Previously only six patients underwent splenectomy, three between 1-2 years, one before five years and one in less than one year. Of the 140 patients (49.3%) were treated with Sclerotherapy and (50.7%) underwent band ligation. With regard to rebleeding, of those who were treated with Sclerotherapy, (14.49%) of patients rebled early, (26.09%) rebled late, (49.28%) did not rebleed and seven patients lost their follow up. Comparing to Sclerotherapy, re bleeding in band ligation were found early in(15.95%), (23.19%) presented as late, (57.97%) did not rebled and two patients lost the follow up..

In conclusion: Treatment of oesophageal variceal bleeding with band ligation has lower rates of re-bleeding. Chronicity of portal hypertension appears to be a significant risk factor for re-bleeding after both procedures.

Key words: Oesophagealvariceal, Hematemesis, sclerotherapy, band ligation;portal hypertension, Oesophago-gastro-duodenoscopy (OGD), Sudan

EDITORIAL

Introductin:

Oesophagealvariceal bleeding is the most common (as many as 30%) in all patients presenting with upper gastrointestinal tract haemorrhage [(1)]. Acute oesophagealvariceal bleeding is an intractable complication of portal hypertension. Patients with oesophagealvariceal bleeding have higher rates of rebleeding, complications, and death than patients with non-variceal bleeding such as ulcer bleeding [(2)]. Traditional measures have included balloon tamponade, vasoconstrictors, and surgical intervention, but these measures did not significantly reduce the rate of rebleeding, complications and improve survival.

Endoscopy has the advantage of allowing specific therapy at the time of diagnosis; it is also important to exclude bleeding from other sources (e.g. peptic ulceration). Variceal haemorrhage maybe treated endoscopically, either by injection sclerotherapy or by band ligation.

Here in Sudan endoscopic injection sclerotherapy is an essential component in the management of bleeding oesophageal varices caused by portal hypertension. It is a feasible and a cost-effective therapeutic strategy, but other options for treatment such as variceal banding are either expensive or unavailable in all centres [(3)] . Endoscopic band ligation is regarded as the main therapeutic option for acute oesophageal variceal bleeding, while sclerotherapy may be used in the acute setting if ligation is technically difficult. Unfortunately there are no reported or published papers about the experience, efficacy or complications of variceal band ligation to confirm its superiority to sclerotherapy in Sudan.

Methodology:

This was a prospective hospital based study conducted at National Centre for Gastrointestinal and Liver Disease, Ibn-Sina Specialized Hospital. during the period from Dec 2016 – April 2017. A total of 140 patients were reviewed. All the subjects were patients with portal hypertension presenting with acute variceal haemorrhage secondary to schistosomal periportal fibroses, patients excluded were the patients diagnosed with any other cause of Upper Gastrointestinal Bleeding rather than variceal bleeding from schistosomal periportal fibroses, and patients who died during resuscitation before endoscopy . Verbal and written consents were obtained. The 140 patients were randomly assigned into two groups , sclerotherapy group and band ligation group. All patients underwent endoscopy by different operators, whenever hemodynamic stability was achieved. The plan of whether to do sclerotherapy or band ligation was taken at the timing of endoscopy, with no specific criteria for that .The endoscopic tower used was FUJINON with 2.5% ethanolamine-oleate used for injection sclerotherapy , and standard rubber band used for band ligation . Analysis of data was done by Microsoft Excel and comparison between groups was done by Statistical Package of Social Sciences version 20 to calculate means and find the levels of statistical differences: the P value of < 0.05 was considered to be significant.

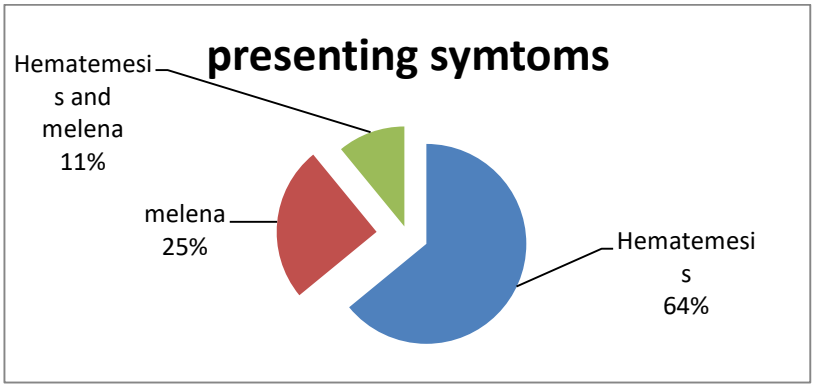
EDITORIAL

Results:

Recruited patients were 140 with mean age of 46.24. with a (3.6:1) male to female ratio, all patients were diagnosed as portal hypertension duo to PPF (bilharziasis) and most of them were from Gezira State with disease duration less than 6 months in (4.3%), (17.1%) from 6 months to one year,(37.1%) between 1-2 years and (41.4%) more than two years.

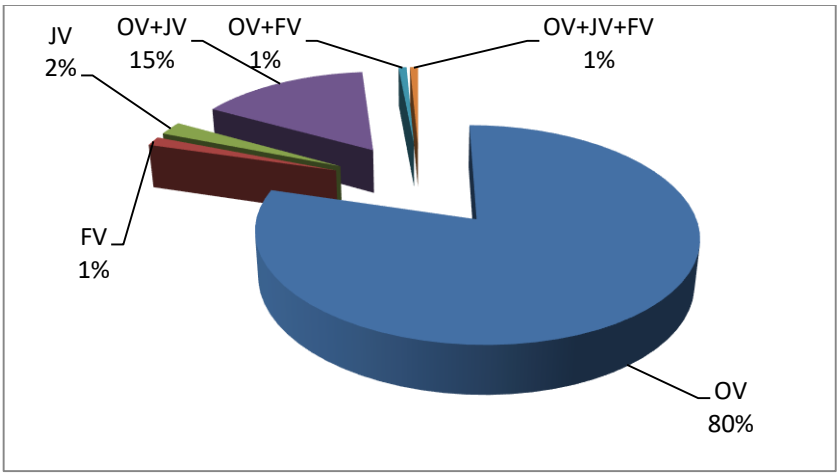
In this study 96.4% of patients presented with hematemesis and 64.7% with melaena and 64.7 with both .Fig 1.

Sixty patients presented with different stages of shock (42.9%) and (77.1%) of patients presented with normal vital sings



Fig(1): Showing the presenting complains

Regarding OGD findings,(97.6%) were found to have oesophageal varices (OV) alone, (15.3%) OV and JV, (2.2%) junctional varices (JV), (1.5%) FV, (0.7%) OV with FV and (0.7%) had OV plus JV and FV. Fig 2



Fig(2): Showing the endoscopy findings

Previously only six patients underwent splenectomy, three between 1-2 years, one before five year and one less than one year.

EDITORIAL

Of the 140 patients (49.3%) were treated with Sclerotherapy and (50.7%) underwent band ligation. With regard to rebleeding, of those who were treated with Sclerotherapy, (14.49%) of patients rebled early, (26.09%) rebled late, (49.28%) did not re bleed and seven patients were lost to follow up. Compared to Sclerotherapy, re bleeding in band ligation was found early in(15.95%), (23.19%) presented as late, (57.97%) did not bleed and two patients were lost to follow up. (Table 1).

Table(1): Showing Endoscopic Intervention and the Time of re-Bleeding

	Early	Late	Total number	*p*
Sclerotherapy	14.49%	26.09%	28	*0.47*
Banding	15.94%	23.19%	27	*0.58*
Both sclerotherapy and banding	0%	2.86%	1	*0.99*

Discussion:

Oesophagealvariceal bleeding is the most common cause of upper gastrointestinal tract haemorrhage[(1)]. This study compared the outcome of endoscopic varicealsclerotherapy versus band ligation regarding early and late re bleeding , We considered having two comparison groups in the determination of sample size , since we had two parameters for each sub-group the size of the sample was sufficient to have 95% confidence level and 5% margin of error.

140 patients were admitted with acute variceal bleeding all of them due to portal hypertension. From this study it was observed that portal hypertension due to schistosomiasis constituted the bulk of the problem which goes well with the literature as to Moawiaalbalal et al , found that 93% of patients admitted in a GIT center in Medani with variceal bleeding were having portal hypertension due to schistosomiasis[(2)]. Another data from Mohammed Salih Idris center showed that 77% of bleeding was variceal in origin.[(4)]

The experience with sclerotherapy in Sudan is well established. Baha et al under the title "Endoscopic sclerotherapy experience in Sudan" which reviewed 1070 patients with 10 years duration, proved that endoscopic sclerotherapy was essential and cost-effective for the management of bleeding oesophagealvarices[(4)] . Although band ligation is widely performed now and it is also feasible and has less complications regarding rebleeding. There was no published papers regarding experience with band ligation in Sudan . In our study 15% of patients developed early rebleeding, and 18% developed late rebleeding, in the contrary to Abdolmonium et al who concluded that 5days – 6weeks rebleeding was 32% and 3% respectively in patients with ppf and osaphgealvariceal bleeding in the same center[(5)].

Table (1) compares the efficacy of both endoscopic sclerotherapy and band ligation regarding early and late rebleeding, of all patients who had early rebleeding, (47.61%) of them had sclerotherapy, (52.39%) had band ligation and no one developed early rebleeding after both procedure. And of those who had late bleeding (51.43%) of them underwent sclerotherapy, (45.33%) band ligation and (2.87%) both procedure. Forty patients out of sixty nine (57.97%) who underwent band ligation and 34 patients out of 69 (49.28%) who underwent sclerotherapy did not experience hematamesis or

EDITORIAL

melaena in the 6 months duration of follow up. In this study Endoscopic Band Ligation was superior to Endoscopic Injection Sclerotherapy for avoidance of rebleeding. G. E. Esmat et al. conducted a meta-analysis for compression between the Endoscopic Band Ligation versus the Endoscopic Injection Sclerotherapy groups and found that recurrence of bleeding was significantly less in the Endoscopic Band Ligation versus the Endoscopic Injection Sclerotherapy groups (24.2% versus 42.9%; p 0.04). In addition. Lo et al also., re- ported 17% rate of re-bleeding with Endoscopic Band Ligation vs. 33% with Endoscopic Injection Sclerotherapy[6] .Villanueva et al. , reported 12% incidence rate for re-bleeding for Endoscopic Band Ligation versus 21% for Endoscopic Injection Sclerotherapy[7]. The results reflected the good quality of endoscopic management of eosaphgealvarices , whether it was banding or sclerotherapy although band ligation was superior to sclerotherapy.

Table (2) shows observed that the presence of shock was associated with increased likely hood of rebleeding in both groups with a statistical significance .but this seems to be less reproducible between other literature .

Table(2): Showing the Status of Shock on Presentation and the Timing of Re-Bleeding

	Early rebleeding	Late Re-bleeding	Total number	*p*
Shock	61.90%	62.9%	35	*0.64*
No Shock	38.09%	37.1%	21	*0.53*

Table (3), shows having the disease for more than one year will increase the risk of rebleeding by two folds. Similarly Ibrahim sz et. al studied the risk factors for bleeding in patints with symptomatic oseophealvarices secondary to schistosomal portal hypertension , and found that chronicity of the disease appers to be a significant factor in that the bleeders had longer duration than non bleeders (80% vs 37.5% p<0.01)[8].

Table (3): Relation of the disease duration on presentation to the timing of re-Bleeding

	Early Re-bleeding	late Re-bleeding	Total	*p*
Short Duration	6.76%	14.3%	7	*0.29*
Long Duration	87.7%	90.84%	49	*0.32*

Conclusion:

- Sclerotherapy is the standard first line therapy for patients with eosaphagealvaricesbleeding , band ligation maybe more difficult to perform specially during active bleeding , but has proven more efficacy in treating

eosaphagelvarices for 6 months. Treatment of esophageal variceal bleeding with band ligation has lower rates of early and late rebleeding.

- Chronicity of portal hypertension appears to be a significant risk factor for re bleeding after both procedures. Presence of shock at presentation was associated with increased likely hood of re bleeding after both procedures.

We recommend that conducting a further large scale randomized controlled trials to be done. It will be helpful in firmly establishing the efficacy of EVL for patients with esophageal variceal bleeding.

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EDITORIAL

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