



Efficacy and Clinical Outcomes of Endoscopic Variceal Ligation with N-butyl-2-cyanoacrylate in Paediatric Patients in a Tertiary Care Centre- A Retrospective Study

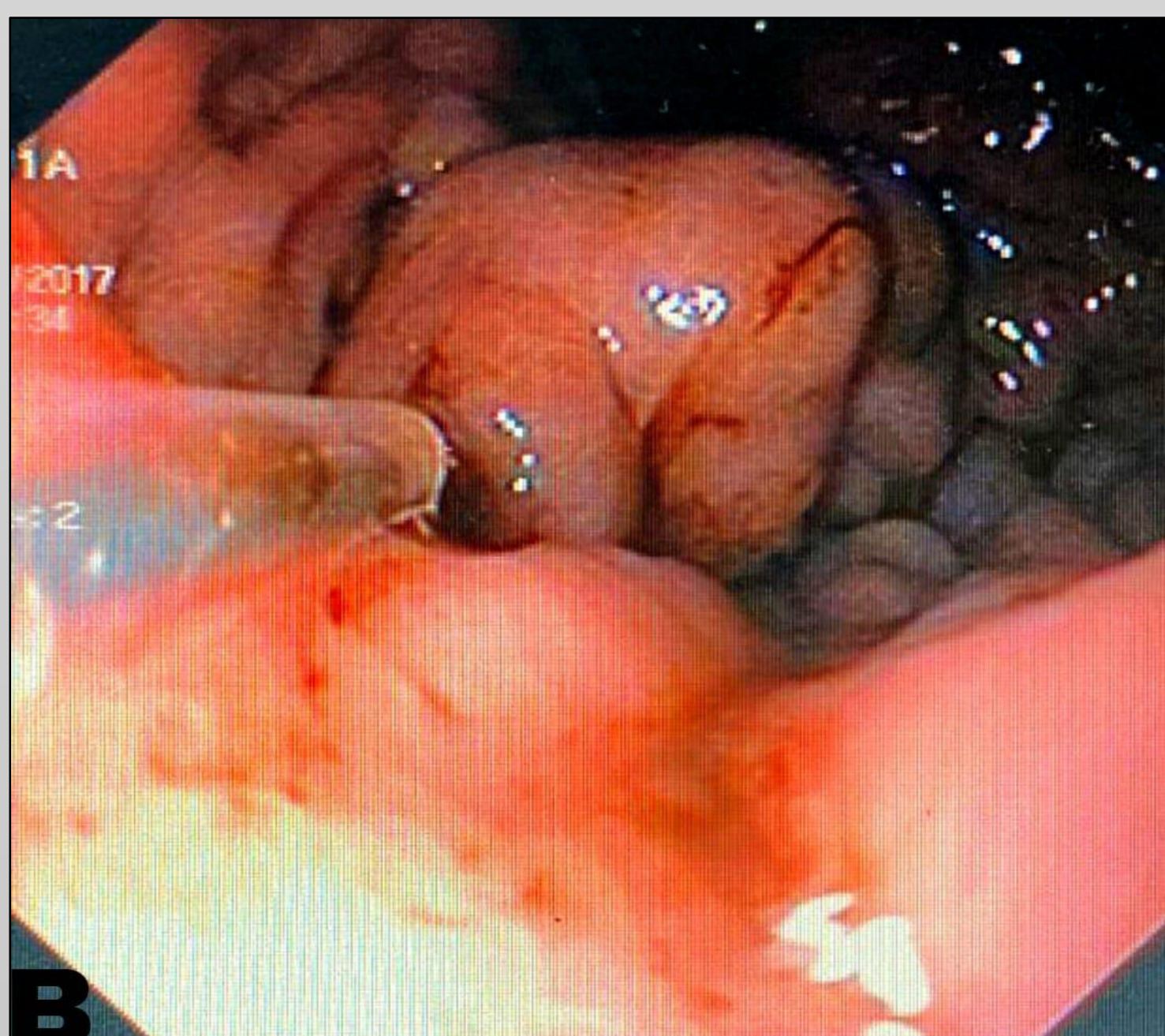


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Background

- Acute variceal bleeding (AVB) from gastroesophageal varices (GVs) is a life-threatening complication in patients with portal hypertension. Bleeding from gastric varices is less common and treatment options are not standardized.
- Endoscopic variceal obliteration (EVO) with N-butyl-2-cyanoacrylate glue or balloon-occluded retrograde transvenous obliteration (BRTO) are the two most common treatment modalities and information on these are limited to adult series.
- There is a paucity of information about gastric varices and its treatment in children.



A - Endoscopic picture of a gastric varix in a 11 year old boy (before glue injection).
B - Endoscopic picture of a gastric varix in a 11 year old boy (after glue injection).

Methodology

- We conducted a retrospective cohort study among paediatric patients (1-18 years) who presented to our centre with AVB from gastric varices.
- Between 2011-2021, we identified 538 among 4539 cases (12%) of portal hypertension with bleeding from gastric varices. Of these only 14 cases (2.6%) had a diagnosis of gastric variceal bleeding in children.
- Details of 13 patients were extracted with non-availability of records of 1 patient. Cyanoacrylate glue in 0.5-1 ml were injected into the gastric varices.
- Patients were evaluated for efficacy, safety and complications associated with the treatment. Endoscopy was repeated after 3 weeks for assessment of variceal size and need for repeat glue injection.
- Data collected were entered into Microsoft Excel 2020 and analysed with help of SPSS 26.0.

Results

- The mean age of the patients was 13.3+/-5.2, with males (54%) and females (46%).
- The mean age at first presentation to hospital with gastrointestinal bleeding was 8.7+/-3.6, with hematemesis (62%) being the most common presentation.
- 8 patients had type 1 gastroesophageal varices and 3 patients had type 2 gastroesophageal varices.
- All 13 patients had stigmata of recent gastric variceal bleeding. The most common cause of portal hypertension was extra hepatic portal venous obstruction (EHPVO) (54%).

Results

- The mean age at glue therapy treatment was 11.3+/-5.3.
- Immediate haemostasis was achieved in all 13 patients (100%).
- Rebleeding was seen among 3 (23%) patients, which occurred after 1 month of glue therapy.
- 1-3 sessions were required for obliteration of gastric varices (77%).
- There was one case of death among the 13 children: a patient with decompensated Wilson's disease.
- Complications like anaphylactic shock, treatment-associated infection, gastric perforation, and distant emboli were not encountered.

| Parameters | | N (%) |
|--------------------|--|----------|
| Etiology | EHPVO | 7 (54%) |
| | Cirrhosis | 4 (31%) |
| | Biliary atresia | 1 (7%) |
| | Chronic calcific pancreatitis with splenic vein thrombosis | 1 (7%) |
| | Presenting symptom | Malena |
| Presenting symptom | Hematemesis | 10 (77%) |
| | Both | 3 (23%) |
| | Gastric variceal classification | GOV1 |
| GOV2 | | 3 (23%) |
| IGV1 | | 2 (15%) |
| Associated Varices | Oesophageal | 10 (77%) |
| | Duodenal | 3 (23%) |

Table1: Clinical characteristics of patients (n = 13) with gastric varices.

EHPVO, extrahepatic portal venous obstruction; GOV1, gastroesophageal varices type 1; GOV2, gastro-esophageal varices type 2; IGV1, isolated gastric varices type 1.

Discussion

- A previous study showed that the most common cause of gastric varices was EHPVO; re-bleeding rates were 14% within 6 months of follow up. [1]
- A randomized controlled trial in adults showed that N-butyl-2-cyanoacrylate injection is superior to sclerotherapy with alcohol [2] and another trial showed its superiority over endoscopic band ligation [3] in gastric variceal bleeding.
- However, a recent randomised controlled study among adults showed that BRTO was more effective than cyanoacrylate injection in preventing rebleeding from GV's, with similar frequencies of complications and mortalities. [4]

Conclusion

- Our series suggests that endoscopic vascular obliteration using cyanoacrylate glue injection is safe and effective in children with gastric variceal bleeding.
- However, a prospective study among the children needs to be performed to gain insight into the true efficacy of glue injection therapy as compared to other available modalities of treatment for gastric variceal bleeding.

References

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