

Brief Reports

Endoscopic Variceal Ligation Using Multiband Ligator

R.K. Pokharna, Sunil Kumar, P.C. Khatri* and C.K. Chahar*

From the Departments of Gastroenterology and *Pediatrics, S.P. Medical College, Bikaner (Rajasthan), India.

Correspondence to Dr. R.K. Pokharna, Type-III/8, Medical College Campus, Bikaner (Rajasthan) 334 003, India.
Email: rkpokharna2@rediffmail.com

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Esophageal variceal bleed in children is treated with endoscopic sclerotherapy (EST), which is associated with significant complications. Endoscopic variceal ligation (EVL) was found to be more effective and safe in adults. Use of EVL in children has not been studied much. Thirteen consecutive children (mean age 9.4 years) with variceal bleed were subjected to EVL by multi band ligator. Varices were eradicated in 2.8 sessions (range 2-4) and one patient had bleed during procedure. No other complications were noted. EVL could not be performed in 2 children less than 3 years of age.

Key words: Esophageal varices, Endoscopic variceal ligation (EVL), Multiband ligator.

VARICEAL bleeding is often a life threatening clinical situation in infants and children(1). Endoscopic sclerotherapy (EST) is an effective treatment for bleeding esophageal varices. However, EST is associated with substantial complications including retrosternal pain, fever, sepsis, transient dysphasia and occasionally pleural effusion. Mucosal ulcerations at the site of injection are observed in 70-80% of the patients. This is the cause of serious complications like rebleeding (up to 20%), esophageal stricture and perforation(2,3).

Stiegmann and Goff(4) developed endoscopic variceal ligation (EVL) as an alternative to endoscopic sclerotherapy. Few randomized control trials comparing EST and EVL in adults favor EVL as an effective treatment for esophageal varices in terms of

efficacy and safety(5). A single randomized control trial comparing EVL and EST in children favors EVL(7). EVL can be performed by either single band ligator or by multi band ligator. There is paucity of data regarding use of EVL with multi band ligator in children with variceal bleed. We present our experience in managing children with variceal bleed by EVL with multi band ligator.

Subjects and Methods

All consecutive children who presented with variceal bleed between January 2003 to December 2003 were included in this study. Endoscopy was done after proper resuscitation in patients with acute variceal bleed, somatostatin infusion was also given. Varices were graded on the scale based on Conn's criteria(8). Endoscopy was done by using forward viewing flexible video

endoscope (Olympus GIF-V) under conscious sedation. EVL was done with multi band ligator (Saeed multiband ligator, indigenously made) by standard technique(7). EVL sessions were repeated at interval of 10-14 days till either all the varices were obliterated or reduced to grade I or tiny thrombosed varices which could not be ligated.

In patients, in whom EVL was unsuccessful EST was performed using 1% polidoconol by standard technique(2). Treatment was assessed by survival rate, incidence of rebleeding, status of varices and complications.

The diagnosis of EHPVO, non-cirrhotic portal fibrosis and cirrhosis was made on the basis of clinical, biochemical and radiological features. Liver biopsy was done whenever it was feasible. Follow up endoscopy was done at 3 month and there after every 6 months or when patient developed upper gastrointestinal bleed.

Results

Thirteen of the total 16 children presenting with variceal bleed during study period were subjected to EVL. One patient's relative refused for endoscopic treatment and was excluded. Out of 15 children EVL could not be performed in 2 children who were less than 3 years age. The mean age was 9.4 yrs (range 4 -14 years) including 9 boys and 4 girls. Nine patients (73%) had EHPVO, while 2 patients (13.3%) each had NCPF and cirrhosis as cause of portal hypertension. Two children were actively bleeding before the endoscopic procedure, which was successfully controlled by EVL. Varices were of grade III or IV in all patients at the start of endoscopic treatment.

Variceal eradication was achieved in all patients in mean 2.8 sessions (range 2-4). Complete disappearance of varices was achieved in 10 patients while 3 patients had

grade I varices which were resistant to EVL. Number of bands required to obliterate varices were 4-12 (mean 7.18). One patient developed bleed during procedure, which was successfully controlled by sclerotherapy. No other major complications were noted during mean follow up of 6.7 month (range 2-11 months).

Discussion

Optimal treatment of esophageal variceal bleed is controversial. Endoscopic sclerotherapy and surgical procedures are preferred modalities. EST has been shown to be effective in more than 90% of patients with active variceal bleeding(9) but it is associated with various complications. It usually takes 3-6 sclerotherapy session to obliterate the varices and rebleeding rate was 9.5%(9). Consequently, EVL was developed as an alternative to EST for the treatment of esophageal varices. It means placing a rubber band around the variceal vein and it induces venous obstruction followed by mucosal inflammation, necrosis and obliteration of the variceal vein.

In a recent randomized controlled trial(7) comparing EST and EVL for bleeding esophageal varices in children with EHPVO, it was found that, EVL eradicated varices in fewer endoscopy sessions (3.9 ± 1 vis 6.1 ± 1.7). Rebleeding rate and major complication rate was significantly higher in EST group as compared to EVL group. However, there was no difference in variceal eradication rate(9). Besides this study, few small studies favor EVL. Fox, *et al.*(10) reported seven children with intra hepatic portal hypertension treated by EVL and found that variceal eradication was achieved in 4 ± 1.3 treatment session with minimal complications. Karrer, *et al.*(11) in a study of 7 children with EHPVO reported no short term or long term complication with EVL.

Key Message

- Endoscopic variceal ligation using multiband ligator is safe and effective method of eradicating esophageal varices in children.

Multiband ligator has been used in children in few studies only(7,12). Kerner, *et al.*(12) found that by using multi band ligator, varices were obliterated in 2 sessions in 26 of 28 patients with minimal complication. In these studies multi band ligator was found to be technically feasible and safe in children.

In our study we could not negotiate endoscope with ligator in 2 children less than 3 years of age. That is probably due to larger sizes of endoscope and ligator available and using conscious sedation for endoscopic procedure. Use of general anesthesia may facilitate insertion of endoscopes with ligation device of 14 mm diameter across cricopharynx(7,13). We did not use general anesthesia in any of our patients.

Contributors: RKP performed endoscopies in all cases, involved in concept, design and manuscript writing and will act as guarantor of the study. SK assisted in endoscopic procedure and was involved in collecting and analyzing data. PCK and CKC were involved in case management and drafting of the paper.

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REFERENCES

1. Prandi D, Rueff B, Roche-Sicot J, Sicot C, Maillard IN, Benhamou JP, *et al.* Life threatening hemorrhage of the digestive tract in cirrhotic patients. *Am J Surg* 1976; 131: 204-209.
2. Goncalves ME, Cardosos SR, Maksoud JG. Prophylactic sclerotherapy in children with esophageal varices: Long term result of a controlled prospective randomized controlled trial. *J Pediatr Surg* 2000; 35: 401-405.
3. Howard ER, Stringer MD, Mowat AP. Assessment of injection sclerotherapy in management of 152 children with esophageal varices. *Br J Surg* 1988; 75: 404-408.
4. Stiegmann GV, Goff JS. Endoscopic esophageal varix ligation (EVL): Preliminary clinical experience. *Gastrointest Endosc* 1988; 34: 113-117.
5. Stiegmann GV, Goff JS, Michaletz Onody PA, Korula J, Lieberman D, Saeed ZA, *et al.* Endoscopic sclerotherapy as compared with endoscopic ligation for bleeding esophageal varices. *N Engl J Med* 1992; 326: 1527-1532.
6. Gimson AES, Ramage JK, Panos MZ, Hayllar K, Harrison PM, Williams R, *et al.* Randomized trial of variceal banding ligation versus injection sclerotherapy for bleeding esophageal varices. *Lancet* 1993; 342: 391-394.
7. Zargar SA a Javid G, Khan BA, Yattoo GN, Shah AH, Gulzar GM, *et al.* Endoscopic ligation compared with sclerotherapy for bleeding esophageal varices in children with extrahepatic portal venous obstruction. *Hepatology* 2002; 36: 666-672.
8. Conn HO. Ammonia tolerance in the diagnosis of esophageal varices: A comparison of endoscopic, radiologic and biochemical techniques. *J Lab Clin Med* 1967; 70 : 442-451.
9. Sarin SK, Sachdeva GK, Nanda R, Vij JC, Anand BS. Endoscopic sclerotherapy using absolute alcohol. *Gut* 1985; 26: 120-124.
10. Fox VL, Carr-Locke DL, Connors PJ, Leichtner AM. Endoscopic ligation of esophageal varices in children. *J Pediatr Gastroenterol Nutr* 1995; 20: 202-208.
11. Karrer FM, Holland RM, Allshouse MJ, Lilly

BRIEF REPORTS

- JR. Portal vein thrombosis: Treatment of variceal hemorrhage by endoscopic variceal ligation. *J Pediatr* 1994; 29: 1149-1151.
12. Mckiernan PJ, Beatb SV, Davison SM. A prospective study of endoscopic esophageal variceal ligation using a multiband ligator. *J Pediatr Gastroenterol Nutr* 2002; 34: 207-211.
13. Price MR, Sartorelli KH, Karrer FM, Narkewicz MR, Soko RJ, Lilly RJ. Management of esophageal varices in children by endoscopic variceal ligation. *J Pediatr Surg* 1996; 31: 1056-1059.

Sexual Abuse of Street Children Brought to an Observation Home

Deepti Pagare, G.S. Meena, R.C. Jiloha and M.M. Singh

From the Departments of Community Medicine and Psychiatry, Maulana Azad Medical College, New Delhi 110 002, India.

Correspondence to: Dr. Deepti Pagare, C-601, Kalka Apartments, Sector-6, Plot no. 31, Dwarka, New Delhi 110 045, India.

E-mail: drdeeptipagare@rediffmail.com

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This study was conducted to assess the magnitude and pattern of sexual abuse among male inmates of an observation home in Delhi. A total of 189 boys aged 6 to 18 years were assessed for sexual abuse using Finkelhor's scale and Child Maltreatment History Self-Report followed by clinical examination using American Medical Association's guidelines. Majority of boys were runaways and 38.1% had suffered sexual abuse. On clinical examination, 61.1% showed physical signs and 40.2% showed behavioral signs of sexual abuse. Forcible sex was reported by 44.4% of victims and 25% had signs suggestive of sexually transmitted diseases. Strangers were the most common perpetrators of sexual abuse.

Key words: *Juveniles, Sexual abuse, STDs.*

SEXUAL abuse of a child is defined as, "the involvement of a child in a sexual activity that he or she does not fully comprehend, is unable to give informed consent to or that violate the laws or social taboos of society"(1). WHO estimates that globally, 8% of boys and 25% of girls below age 18 are estimated to suffer sexual abuse of some kind every year(1).

A community based multi-centric qualitative study revealed that sexual abuse of children in India crosses all barriers of socio-

economic classes and is widespread among both rural and urban areas and among boys and girls(2). Abusive practices were found to range from traditional systems like "Besavi" and "Vardiyar" to well organized sex trade in Mumbai, Delhi and Goa. Sexual abuse has been reported by domestic and agricultural labor(2) as well as educated high school students(3). Some clinic-based studies have also documented sexual abuse(4,5).

Perpetrators of sexual abuse find their victims in wide ranging situations and it is