Early Spontaneous Slippage of Rubber Bands with Fatal Bleeding: a Rare Complication of Endoscopic Variceal Ligation

UCTN

The risk of fatal massive bleeding after successful endoscopic variceal ligation (EVL) is very low [1]. To date, only a few reports have been published in the English-language literature on life-threatening bleeding due to ulceration following variceal banding [2–4]. The present report describes an additional case of this fatal complication resulting from early spontaneous slippage of rubber bands.

A 61-year-old man with liver cirrhosis following hepatitis C virus infection was admitted to hospital with acute bleeding from the upper gastrointestinal tract. The patient had no history of treatment for esophageal varices. His blood pressure was 100/70 mm Hg, with a pulse rate of 124 beats/min in the supine position. The laboratory values on admission were: red blood cell count 2.1 × 1012/l; Hb 6.2 g/dl; Ht 19%; prothrombin time 75%; platelet count 123 000/µl. His condition was classified as representing Child–Pugh class C. After resuscitation, emergency esophagogastroscopy revealed the presence of moderate-sized esophageal varices, with oozing bleeding. No other site of bleeding was detected. EVL was successfully carried out using a Stiegmann–Goff single-shot ligator kit (Bard Interventional Products, Tewksbury, Massachusetts, USA). The bleeding site was controlled by direct ligation, with the application of a total of three rubber bands. The patient's vital signs were stabilized in the intensive-care unit with intravenous fluids and blood transfusion. On the second day after EVL, massive upper gastrointestinal bleeding was observed. Emergency endoscopy showed that the bands at the ligation sites were absent, with spurting bleeding from post-EVL esophageal ulcers. Injection therapy with 250 U of human thrombin proved ineffective; the bleeding continued, and the patient's poor condition required balloon tamponade with a Minnesota tube. The patient had no further bleeding episodes after this, but died on the following day. The postmortem examination revealed three post-banding ulcerations in the lower part of the esophagus, with no bands present at the treated sites (Figure **1**). Severe bleeding from the post-EVL ulcers resulted from early spontaneous slippage of the rubber bands and was regarded as the cause of death.

Figure **1** Gross postmortem specimen from the distal esophagus, showing three ulcerations after endoscopic variceal ligation.

Most previous case reports [2–4] have suggested that massive bleeding from EVL-induced esophageal ulcers usually occurs between 5 and 10 days after the procedure, and is linked to detachment of the O-ring. Some authors [2,3] have postulated that severe alterations in coagulation due to poor liver function (Child–Pugh C) and large post-EBL ulcers may facilitate the development of this dramatic complication. However, severe bleeding from post-banding ulcerations has also been reported in patients with grade A and B in the Child–Pugh classification [3, 4]. Several case reports have also described early slippage of bands within 24 h, as in the present case [3]. From the morphological point of view, occlusion of the variceal lumen by mature thrombus was demonstrated on day 2 after EVL and premature slippage of bands from the treated sites is associated with a high potential for bleeding [5]. Some reports [1,2] have also suggested that endoscopic intravariceal injection of cyanoacrylate glue is still the most promising approach to the management of massive variceal hemorrhage, as its success in preventing recurrent bleeding is independent of the above factors.

The present case report, along with others, thus shows that the precise risk factors associated with early slippage of rubber bands following endoscopic variceal ligation are essentially unknown. Further studies will be needed in order to identify the specific risk factors for potentially fatal complications of this type.

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I. Mishin, A. Dolghii
First Dept. of Surgery "N. Anestiadi" and Laboratory of Hepato-Pancreatico-Biliary Surgery, N. Testemitsanu Medical University, Emergency Municipal Hospital, Kishinev, Moldova.

References

[1] Seewald S, Mendoza G, Seitz U et al. Variceal bleeding and portal hypertension: has there been any progress in the last 12 months? Endoscopy 2003; 35: 136–144

[2] Sakai P, Maluf Filho F, Melo JM et al. Is endoscopic band ligation of esophageal varices contraindicated in Child–Pugh C patients? Endoscopy 1994; 26: 511–512

[3] Van Vlierberghe H, De Vos M, Hautekeete M, Elewaut A. Severe bleeding following endoscopic variceal ligation: should EVL be avoided in Child C patients? Acta Gastroenterol Belg 1999; 62: 175–177

[4] Toyoda H, Fukuda Y, Katano Y et al. Fatal bleeding from a residual vein at the esophageal ulcer base after successful endoscopic variceal ligation. J Clin Gastroenterol 2001; 32: 158–160

[5] Polski JM, Brunt EM, Saeed ZA. Chronology of histological changes after band ligation of esophageal varices in humans. Endoscopy 2001; 33: 443–447

Corresponding Author

I. Mishin, M.D., Ph.D.
First Dept. of Surgery "N. Anestiadi" and Laboratory of Hepato-Pancreatico-Biliary Surgery, N. Testemitsanu Medical University, Emergency Municipal Hospital
Str. Muncheshty 52, ap.60
2001 Kishinev
Moldova
Fax: +373-22-52 20 08
E-mail: mishin_igor@mail.ru

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