Complete Esophageal Occlusion Following Esophageal Variceal Band Ligation: An Unusual Complication; A case Report.

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Abstract 

Esophageal variceal band ligation has become the treatment of choice for treatment of bleeding esophageal varices. Although generally considered to be safer than endoscopic sclerotherapy, numerous complications of esophageal band ligation have been reported. These include esophageal perforation, pain, rebleeding, mesenteric vein thrombosis, altered esophageal motility, septic complications resulting from bacteremia and esophageal stenosis. Severe and complete stenosis following endoscopic variceal ligation has been very rarely reported. We report the case of a patient with liver cirrhosis who developed complete dysphagia following band ligation for esophageal varices. He was found to have total occlusion of the esophageal lumen on barium study and later an upper endoscopy confirmed the presence of a band occluding the lumen. The Band was removed resulting in relief of symptoms. Later on patient had recurrence of symptoms due to stricture formation at the same site. This was treated with Through The Scope (TTS) balloon dilatation of the stricture resulting in complete long term resolution of symptoms. The possible mechanisms and technical aspects of this complication are discussed. 

Introduction: 

Variceal bleeding is a severe complication of cirrhosis leading to significant morbidity and mortality. Treatment of acute variceal bleeding has improved dramatically since the era of the mechanical balloon tamponade. Advances include endoscopic band ligation or sclerotherapy, and vasoactive drugs such as somatostatin, octreotide, vasopressin and terlipressin. Variceal band ligation has shown better efficacy and fewer hazards than sclerotherapy but still is not free of complications. This case report is of a patient who developed an esophageal variceal band ligation (EVBL) related complication. 

Case Summary: 

Forty five years old lady, who was a known case of hepatitis C related cirrhosis, got admitted in emergency with complaints of melena for 3 days. She had past history of similar episodes over last 6 months and had undergone EVBL 3 months ago. Patient had ascites for last 6 months as well for which she was being treated
with diuretics. She was taking propranolol 30mg/day in three divided doses, cap omeprazole 20mg/day and a multivitamin regularly.

Patient underwent an upper GI endoscopy. She had two short columns of high grade varices with red signs in the distal esophagus. Band ligation of varices was done at two sites with Saeed six shooter (Wilson-Cook) in view of the recent bleeding and high risk stigmata. The procedure was uneventful and so was the patient’s recovery. She was discharged the same day and advised to take a liquid diet for 48 hours in addition to her regular medications.

Patient was brought into the emergency room the same evening with complaints of complete dysphagia with inability to tolerate even a sip of water. She also complained of retrosternal tightness. Urgent barium study was performed and complete holdup of contrast was seen in the distal esophagus coinciding with the area of band application as shown in figure 1. Patient had upper GI endoscopy after lavage of esophagus to clear residual barium. Complete obliteration of lumen with a band and surrounding ulceration was noted at distal end as shown in figure 2. Variceal band responsible for complete closure of lumen was dislodged with the tip of upper GI endoscope. We were able to remove this rather easily. Luminal obstruction was relieved with removal of band and scope was easily maneuvered across the occluded part as seen in figure 3.

Patient was discharged with advice for semisolids only for next 2 days. She was able to take liquids easily but experienced some difficulty on taking semisolids. Repeat EGD was done after 3 weeks. Tight stricture was noted at 32cm from incisor which was dilated with Through the Scope (TTS) balloon. Esophageal varices were completely sclerosed. Patient had an uneventful recovery with mild retro-sternal pain and odynophagia lasting for one day. She is currently able to take normal diet. A repeat EGD more than a year later has shown no residual stenosis and low grade varices.

**Discussion:**

Esophageal variceal band ligation (EVBL) has a lower incidence of complications and mortality as compared to sclerotherapy along with better outcome.\(^3\)\(^4\) Common complications noted are esophageal ulceration,\(^5\) recurrent bleeding, odynophagia and rarely esophageal perforation.\(^6\) Repeated sessions of therapeutic interventions are more prone to result in esophageal stricture formation. It is likely that smaller varices are more prone to ulceration and stricture formation due to a greater injury to the surrounding mucosa. It is therefore conceivable that ligation of smaller size varices would carry greater chance of ligation of esophageal mucosa leading to ulceration and stricture formation. Motility disturbances in esophagus are seen in significant number of patients, more so after sclerotherapy.\(^7\)

With the introduction of multi-band ligators obviating the need for insertion of over-tubes, complication rate has dropped to negligible proportions. At the same time as the number of patients undergoing band ligation is increasing, complications like retro-sternal pain, bleeding from ulcer at banding site and transient odynophagia are still being observed. Most of these complications are however self-limiting with no need for further treatment.\(^8\)
Complete dysphagia after variceal band ligation is rarely seen and despite adequate literature search, we were unable to find any study or case report related to this complication that has documented this complication so well. This complication occurred at a center well versed with this technique and at the hands of an experienced endoscopist. The procedure had apparently gone smoothly and the post-procedure recovery had also been uneventful. However the patient presented with severe dysphagia within a few hours of the procedure indicating a banding related complication rather than a stricture. The other differential could be medicine related esophageal injury like Potassium Chloride tablets that may be given to decompensated cirrhotic patients on diuretics. However no such history was elicited in this case.

This case highlights the need for the endoscopist to be sensitive to such complications and be equipped to deal with them adequately. In our clinical practices a large number of patients complain of post endoscopic variceal ligation pain and mild to moderate degree of dysphagia. However complete dysphagia leading to inability to swallow saliva should alert the endoscopist to the possibility of ligation related occlusion and requires urgent intervention.

Overall EVL continues to be a safe and effective procedure for primary and secondary prophylaxis of variceal bleeding. Several studies have suggested that the incidence of complications related to this procedure is very low. However Tripathi et al 9 have recently shown that the rates of the first variceal bleeding was lower in patients treated with Carvedilol as compared to EVL with no significant difference in mortality. This study along with other reports suggesting a significant decrease in Oxygen delivery in patients undergoing EVL 10 and other procedure related complications caution against indiscriminate use of this procedure for primary prophylaxis of esophageal varices. Clinical experience would also suggest that repeated use of band ligation for secondary prophylaxis in lower grade varices may be associated with a higher risk of complications. It will be prudent to individualize therapeutic options of either EVBL along with beta blockers or beta blockers alone for primary prophylaxis according to size of the varix and state of underlying liver disease thus avoiding undue complications of band ligation. 11

We conclude that 1) Esophageal Variceal Ligation is a safe procedure but can result in significant complications in a small number of patients. Patient selection for EVL should consider factors like severity of underlying liver disease, medical condition of the patient, tolerance and compliance with beta blocker therapy and endoscopic expertise available in the area. 2) Particular caution needs to be exercised in selecting the right sized varix for ligation, avoiding excessive suctioning of mucosa surrounding varices and a gentle examination of the esophagus following the completion of EVL to detect such complications. 3) Finally severe chest pain and dysphagia following EVL should alert the clinician to the possibility of a complication and dealt with in an expeditious manner.

References:


