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Case Report

# Role of cyanoacrylate glue therapy in enteral SEMS bleeding – A nightmare

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**Abstract**

Over the past century, the use of stents has evolved to a point where they are now used extensively throughout the gastrointestinal tract. Endoscopic stenting has become widely used for treatment of gastrointestinal and hepatobiliary strictures. Metallic stents are deployed in malignant strictures as a palliative procedure. Adverse events of stenting include perforation, migration, bleeding, occlusion, and pain. Finally, the use of multidisciplinary teams which include endoscopists, interventional radiologists, and surgeons allows for the exchange of ideas and procedural planning necessary for successful innovation. We present a case of successful cessation of bleeding by using cyanoacrylate glue therapy in post-enteral self-expandable metallic stent bleeding. In conclusion, glue therapy may also be considered as a mode of treatment other than conservative approach and angiographic coil embolization.

**Key words**

Cyanoacrylate glue, complication of self-expanding metallic stent, self-expandable metallic enteral stent, self-expandable metallic stent bleeding

## Introduction

Malignant obstruction of the gastrointestinal tract is a serious adverse event, occurring in up to 20% of patients with upper gastrointestinal cancers and 30% of patients with colorectal cancers. Enteral stenting has been a palliative treatment for malignant gastrointestinal obstruction. Gianturco devised the first self-expanding metallic stent (SEMS) in 1985 for endovascular use.[1] Its deployment even in a critically ill patient, avoiding the morbidity of a surgical procedure under general anesthesia, is feasible and safe. We report a case having malignant gastroduodenal obstruction with enteral SEMS who presented 2 months later with bleeding which was controlled with cyanoacrylate glue therapy.

## Case Report

A 56-year-old male presented with chief complaints of abdominal distension and postprandial vomiting since 7 days. Patient had right upper quadrant pain for which he was invstigated. Ultrasonography abdomen showed cholelithiasis with hypoechoic nodule of size 1 × 1 cm in the right lobe of the liver. Patient underwent laparoscopic cholecystectomy with biopsy of liver nodule. Histopathology report showed adenocarcinoma of gall bladder with liver metastasis. Patient was started on chemotherapy. After 20 days of chemotherapy, patient developed jaundice. Magnetic resonance cholangiopancreatography showed narrowing of distal common hepatic duct and intrahepatic biliary radicles dilatation. Subsequently, he underwent endoscopic retrograde cholangiopancreatography (ERCP) and placement of plastic stent in the strictured common hepatic duct.

After 4 months, patient presented with abdominal distension and postprandial vomiting suggestive of gastric outlet obstruction. Laboratory investigations revealed the following: white blood count 10.4 × $10^9$/l, hemoglobin 15.1 gm%, total bilirubin 0.9 mg/dl with a direct fraction of 0.4 mg/dl, aspartate aminotransferase (AST) 14.8 U/l, and alkaline phosphatase 82.6 U/l. Upper gastrointestinal (GI) endoscopy showed narrowing at the pylorus and the scope could not be passed beyond. An uncovered SEMS called enteral stent D-type 22 × 140 mm was placed. At upper GI endoscopy in left lateral position, a 0.035-inch guide wire was first advanced across the stricture. An ERCP cannula was then advanced over the

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**Figure 1:** Pyloric narrowing SEM with stenting

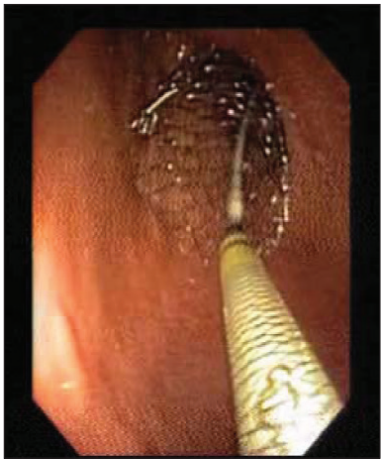

**Figure 2:** Enteral stenting

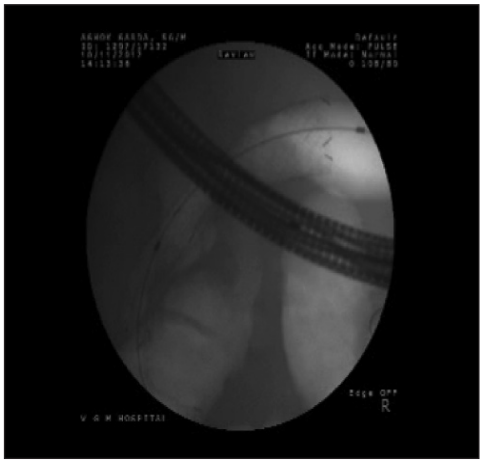

**Figure 3:** Fluoroscopic image C-SEMS

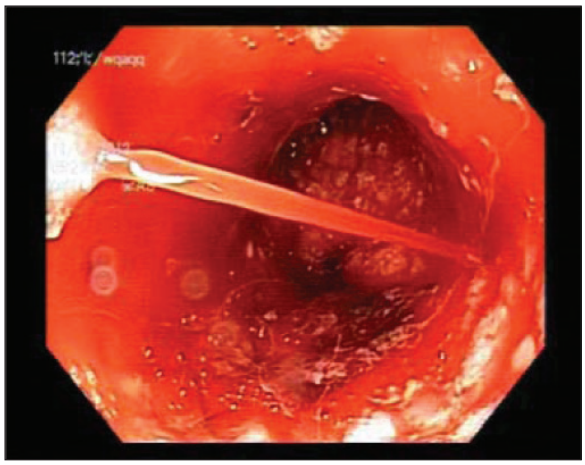

**Figure 4:** Duodenal spurter

guide wire and contrast was injected to assess the length of the stricture. After measuring the length of the malignant stricture, a stent of appropriate length and diameter was chosen so as to bridge the stricture adequately. The SEMS delivery system was then advanced over the guide wire, and after satisfactory position of the delivery catheter was confirmed by fluoroscopy, the SEMS was deployed [Figures 1-3].

After 2 months of enteral stenting, the patient presented with hematemesis. Upper GI endoscopy was performed with double-channel therapeutic endoscope. Irrigation device was used to produce a forceful water jet to clean the bleeding site. Endoscopy showed blood clots inside the stomach as well as inside the SEMS, which were removed using Roth Net basket. Scope passed through the stent which showed a spurting vessel from medial duodenal wall. Clipping was attempted using metallic Biclip (Hemoclip) which failed to secure hemostasis. Following this, using a 21-gauge sclerotherapy needle, 0.5 ml of cyanoacrylate was injected at the base of spurter and bleeding was instantaneously controlled [Figures 4-6].

Patient was shifted to the cath lab wherein angiography was done through femoral route with selective cannulation of gastroduodenal artery. There was no ongoing bleed. The metallic stent served as a marker for angiographic study, wherein microcoils were injected into the feeding branch prophylatically by the interventional radiologists to eliminate the possibility of rebleeding.

## Discussion

Endoluminal stenting has gained widespread acceptance and is gaining popularity due to the high success rates in relieving symptoms from malignant obstruction with relatively low adverse events rates. Self-expandable metal stents are effective as surgical interventions in patients with malignant obstruction of the upper GI tract, while also being safer and cheaper. Nevertheless, the placement of stents is associated with potential adverse events, namely, perforation, obstruction, migration, and bleeding. By practicing good technique and taking the appropriate precautions, the rates of these adverse events can be kept quite low.

Sandeep *et al.*, while reviewing the adverse events of endoluminal stenting, reported bleeding in 0–10%, and most

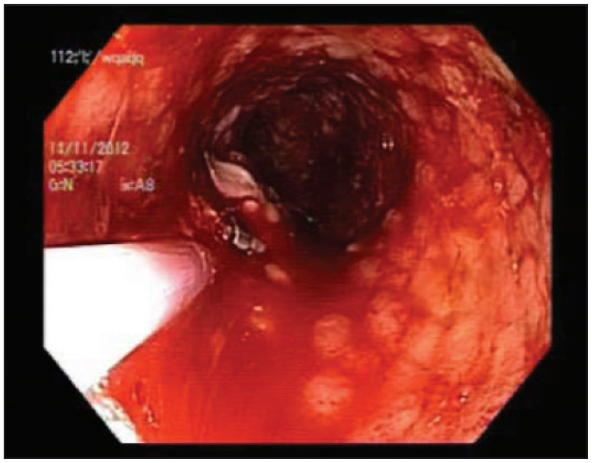

**Figure 5:** Injecting glue in spurter

**Figure 6:** Angiographic coil embolization

of them were treated conservatively.[2] Martin and Laasch reported potential early adverse events including bleeding in 5% following gastroduodenal stent insertion; most of these complications were managed conservatively.[3] In another study reported by Varadarajulu *et al.*, bleeding was seen in 5% which was also treated conservatively.[4] Kim *et al.*, reported upper GI bleeding in 4 of the 207 cases (1.9%) after SEMS deployment, of which 2 were treated conservatively and another 2 required coil embolization.[5]

SEMS placement is as safe and effcacious as surgical bypass in patients with malignant obstruction of the upper GI tract. We controlled bleeding in our patient with glue injection and subsequently performed coil embolization as a prophylactic measure to prevent recurrence of bleeding. Extensive literature search did not reveal any report on the use of injection of cyanocrylate for the control of the post-SEMS bleed.

## Conclusions

Cyanoacrylate glue therapy may be considered as one of the modes of treatment other than the conservative and angiographic coil embolization management of emergency arterial bleeds following SEMS deployment, which can be life saving.

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