



# Endoscopic Hemostasis of Post-Sphincterotomy Bleeding with Placement of Multiple Plastic Stents - 2 Cases Report

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## Abstract

It was not rare to have post-sphincterotomy bleeding (PSB) after endoscopic sphincterotomy (EST) in endoscopic retrograde cholangiopancreatography (ERCP). Severe PSB will be a challenge to treat endoscopically with traditional hemostasis methods. Some physicians had placed self-expandable fully-covered metallic stents (FCMS) to treat severe PSB with satisfactory results. We tried to place multiple plastic stents to make the similar tamponade effect as it did with FCMS. Two old female patients had severe delayed PSB after endoscopic sphincterotomy. Both could not have hemostasis after traditional injective therapy with epinephrine. We then placed 3 plastic stents in one and 2 stents in the other patient and achieved immediate hemostasis without complication. Both of them had no recurrent bleeding during follow-up. The 2 patients had stents removed 2 weeks later respectively and had no sequela. Severe PSB may be treated effectively with multiple plastic stents placement as with FCMS.

**Keywords:** Post-sphincterotomy bleeding; Endoscopic sphincterotomy; Self-Expandable fully-covered metallic stents; Plastic stent

## Introduction

It is not rare to have post-sphincterotomy bleeding (PSB) after endoscopic sphincterotomy (EST) in endoscopic retrograde cholangiopancreatography (ERCP) [1]. Traditionally, the methods used for endoscopic hemostasis for PSB are the same used for bleeding from other gastrointestinal tracts: injective therapy; thermal coagulation therapy; or endoclips, etc. However, it could be challenging to perform these methods with a side-viewing endoscope. Although endoscopic hemostasis was usually successful, once effective hemostasis could not be achieved, surgical intervention or angiographic embolization was required [1]. Some physicians had placed temporary fully-covered metal stent (FCMS) into the biliary trees to stop bleeding with good results [2-5]. We reported 2 cases had delayed PSB, successfully treated with multiple plastic stents placement.

## Case Presentation

The first case was a 76-year-old female patient. She had gallbladder (GB) and common bile duct (CBD) stones with acute cholangitis and had undergone ERCP once 5 years ago. EST was done and some CBD stones were removed then. She refused to have cholecystectomy at that time. She was admitted due to jaundice with fever and chills. The laboratory data were WBC 7,250/ $\mu$ L, Hb 11.5 g/dL, platelet  $142 \times 10^3$ / $\mu$ L, total bilirubin 3.9 mg/dL, gamma glutamyl transferase 480 U/L, AST/ALT 195/112 U/L, and alkaline phosphates 1,351 U/L. Empiric antibiotics were prescribed and ERCP was arranged for her under the tentative diagnosis of GB and CBD stones with acute cholangitis. The patient had a lot of dark greenish bile coming out from the major papilla in ERCP. The previous sphincterotomy was enlarged by the sphincterotome but no definite stone was removed. Endoscopic retrograde biliary drainage (ERBD) was done with a plastic stent (7 cm, 10 Fr, OASIS, Wilson Cook Medical, Winston-Salem USA) for prophylaxis. The procedure was smooth and no active bleeding was noted. Laparoscopic cholecystectomy was done on the next day. Delayed PSB was suspected during the laparoscopic surgery for anemia and much blood in duodenum was noted. The surgeon held the surgery and arranged emergent endoscopy with the side-viewing duodenoscope for her. Active bleeding from the site of the sphincterotomy was noted. We injected 8 cc of 1:10,000 epinephrine and the bleeding ceased. The laparoscopic cholecystectomy was completed smoothly after endoscopic treatment. However, the patient had tarry stool and drop of hemoglobin in the next day. She underwent duodenoscopy again and active bleeding

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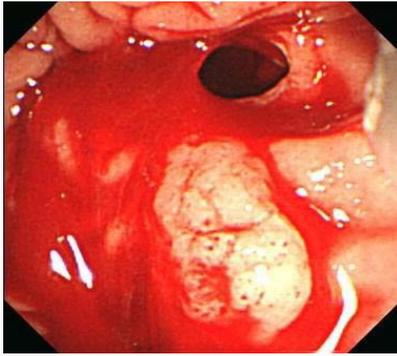
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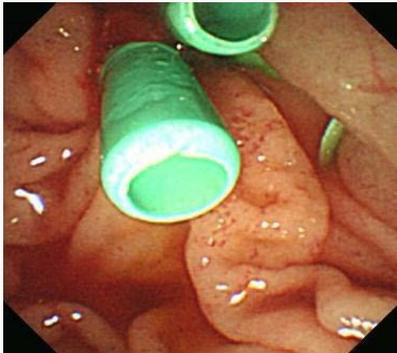
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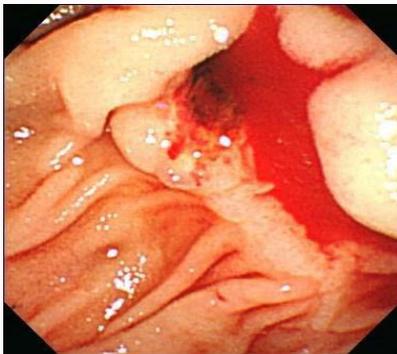
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**Figure 1:** Severe active bleeding from the sphincterotomy site was noted.



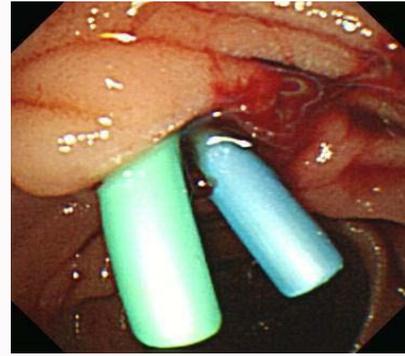
**Figure 2:** Three plastic stents were placed into the biliary tree and bleeding was stopped.



**Figure 3:** Active bleeding was noted from the sphincterotomy site.

was noted from the sphincterotomy (Figure 1). We injected 8 cc of 1:10,000 epinephrine but could not stop the bleeding. Hemostasis with endoclips were tried but failed for technical difficulty. We tried to make local tamponade effect with plastic stents. Three plastic stents (5 cm, 11.5 Fr, OASIS, Wilson Cook Medical, Winston-Salem USA) were placed consecutively into the biliary tree till the orifice was tight (Figure 2). The bleeding ceased immediately. The patient had no more recurrent bleeding during follow-up. She was discharged 4 days later with a good general condition. The stents were removed 2 weeks later and no sequela was noted.

The second case was an 85-year-old female patient. She was admitted due to CBD stones with acute cholangitis. The laboratory data were WBC 10,540/ $\mu$ L, Hb 7.3 g/dL, platelet  $363 \times 10^3/\mu$ L, INR 1.13, total bilirubin 2.1 mg/dL, AST/ALT 154/118 U/L. She underwent ERCP and EST was done. The procedure was uneventful and no active bleeding was noted. She had tarry stool and drop of hemoglobin next day. Delayed PSB was suspected. She underwent duodenoscopy



**Figure 4:** After two plastic stents were placed, the bleeding was stopped.

and active bleeding was noted from the site of sphincterotomy (Figure 3). We placed 2 plastic stents (5 cm, 11.5 Fr and 5 cm, 10 Fr OASIS, Wilson Cook Medical, Winston-Salem USA) consecutively till the orifice was tight and the bleeding ceased (Figure 4). She was discharged in good general condition 2 days later. We removed the 2 stents 2 weeks later and no complication was noted.

## Discussion

PSB usually was not severe and could be managed well by traditional endoscopic hemostasis if indicated. However, it is difficult technically to perform endoscopic hemostasis with a side-viewing endoscope. Some endoscopists treated PSB by placing temporary FCMS into biliary trees [2-5]. The results were satisfactory. To achieve the similar effects with less cost and less effort, we tried to use multiple plastic stents placement.

And we treated 2 cases of severe PSB successfully. Multiple stents placement had been well accepted as an alternative treatment for benign biliary stricture [6]. It is safe and easy to do for the endoscopists. The mechanism of placement of FCMS to treat PSB is making a tamponade effect to compress the bleeder. We can achieve the similar tamponade effect by placing multiple plastic stents. The number of plastic stents should be placed depends on the amount needed to make the orifice of sphincterotomy tight.

## Conclusion

It would be more cost-effective and easier to place and easier to remove with plastic stents than FCMS for treating PSB.

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