Utilization of Balloon Tamponade Technique in Acute Massive Lower GI Bleed in Emergency Department; A Case Report and Literature Review

Vikram Raj, DO1; Nima Khoshab, MS1; Michelle Burgett-Moreno, BA1; Sarkis Arabian, DO2,4; Farabi Hussain, MD3,4; Massoud Rabiei, BS1; Eugene Kwong, MD1,4; Michael M. Neeki, DO, MS1,4

1. Department of Emergency Medicine, Arrowhead Regional Medical Center, Colton, CA; 2. Department of Internal Medicine, Arrowhead Regional Medical Center, Colton, CA; 3. Department of Surgery, Arrowhead Regional Medical Center, Colton, CA; 4. California University of Science and Medicine, Colton, CA

Abstract

Here we present a case of acute lower GI bleeding in the emergency department (ED), in which gastrointestinal and surgical specialists were not emergency available to render their support. A quick intervention using a balloon tamponade technique with a Minnesota tube helped in stabilizing the patient.

Introduction

- Lower gastrointestinal (GI) hemorrhage accounts for approximately 1-2% of all acute hospital admissions and 5-12% of cases result in mortality.
- Approximately 87-95% of cases are due to bleeding from the colon and an estimated 10-25% are from the small bowel.2,4
- With colonoscopy or angiography, aggressive attempts to treat hemorrhage and determine the site of bleeding can be initiated simultaneously, but 10-25% of acute lower GI hemorrhages will still ultimately require emergent surgical intervention and 10% will require surgical intervention prior to identification of the site of bleeding.1,5

Case

A 76 year old, wheelchair bound male with history of hypertension, chronic kidney disease, and a prior thoracic/abdominal aortic repair, presented to the ED at Arrowhead Regional Medical Center with an altered level of consciousness and generalized weakness.

ED staff noticed the presence of bright red blood on his wheelchair during transport. Upon presentation, he was hypotensive (74/48 mm Hg) and altered (GCS of 9). He was intubated using rapid sequence intubation to protect his airway. The bleeding progressively worsened in the ED; his hemoglobin and hematocrit were notably low (6.6 g/dl). Blood products and vasoconstrictors were administered via 18 gauge antecubital lines and an internal jugular central line. Furthermore, calls were made to the gastrointestinal, surgery, and interventional radiology team who were not available at that time.

ED team was unable to localize the source of bleeding using direct visualization secondary to heavy hemorrhage. Intra-rectal pressure to tamponade the source using standard gauze was rendered unsuccessful. Subsequently, a 20 fr Foley balloon filled with 20 cc of normal saline was used with direct pressure to the site, which also proved ineffective in slowing bleeding.

The following morning the gastroenterology team performed a flex sigmoidoscopy, in which the Minnesota tube was removed and a circumferential ulcerated mucosa was catherized at the dentate line. The patient was extubated, observed overnight, and discharged 48 hours from his arrival to the ED.

Case (continued)

The next morning a CT scan was obtained, which showed a large rectal varix. The patient was taken to the operating room for a transanal approach to the bleeding varix. The Minnesota tube was able to tamponade the bleeding source, allowing time for the surgical intervention. The patient was discharged with an improved hemoglobin and stable vital signs.

Discussion

- To the best of our knowledge, balloon tamponade treatment with the Minnesota tube has only been reported in two other cases of lower GI bleeding, when re-bleeding emerged following transanal rectal surgery and in the case of rectal variceal bleeding.7,8
- Sub-maximal balloon inflation is only recommended for a maximum of 12 hours as well intensive monitoring.7
- Potential complications include: ulceration, pressure necrosis, compression of visceral wall, and perforation especially in cases of excessive or prolonged inflation.7

Figure 1: CT image of Minnesota tube placement

Figure 2: Minnesota Tube

Figure 3: Distal and Proximal end of tamponade balloons (Source: Georgiou C. BJOG 2009)

Conclusion

The use of balloon tamponade is an important device for emergency physicians to keep in mind as a rescue therapy in cases of lower GI bleeding when surgical intervention and specialist teams are not emergently available.

References