Novel Use of Esophagogastroduodenoscopy Post-Operatively, with Minimal Insufflation, for Evaluation of Operative Repair for an Acute Gastric Bleed

Sameh Shoukry, MD., Azzan Arif, MD., Penelope Mashburn, DO.

SAGES Society of American Gastrointestinal & Endoscopic Surgeons

Steward Western Reserve Health Education
A Steward Teaching Affiliate

Key Take-away:

The use of a post-operative EGD in an OR setting, with careful advancement and minimal insufflation, appears to be a viable option for post-operative evaluation of an upper GI bleed.

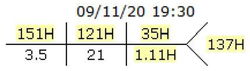
While this does not change the standard of care for fully equipped facilities, it does present a new option for smaller facilities in a community setting, where they may have experienced surgeons but no IR capability.

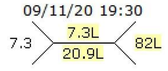
BACKGROUND

In cases of upper gastrointestinal (GI) bleeds, fluid resuscitation, blood transfusion, acid suppression, and endoscopic intervention help achieve adequate hemostasis in most cases[1]. When these measures fail, mainly after repeated endoscopy, hemodynamic instability, or an ulcer greater than 2 cm, surgical intervention with ligation of the gastroduodenal artery and pyloroplasty is indicated[2]. Here we present the case of an 87-year-old female who failed to achieve adequate hemostasis with medical management and two esophagogastroduodenoscopies (EGD). Therefore, our surgical intervention included a gastroduodenostomy, suture ligation, insertion of a nasogastric (NG) tube past the gastroduodenostomy site for monitoring and management, and closure with a combination of falciform and omental patches. A unique approach involving a post-procedural repeat EGD was performed in the operating room (OR) for concerns of a recurrent bleed since Interventional Radiology (IR) was not available. The patient tolerated all procedures well, and this case report may contribute to a solution for re-evaluating acute GI bleeding at facilities where IR is not immediately available.

VITALS / LABS AT THE TIME OF CONSULT

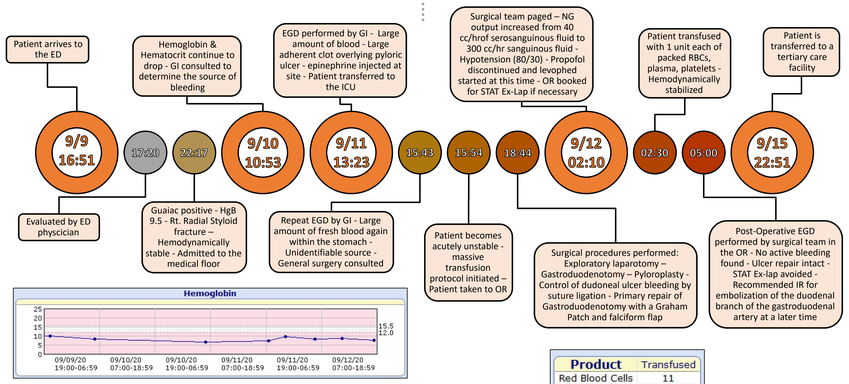
Temp	Pulse	Resp	BP	Pulse Ox
97.2 F L	60	16	117/62	98
09/11/20 15:11	09/11/20 15:05	09/11/20 15:05	09/11/20 15:05	09/11/20 15:05





PRESENTATION OF CASE

An 87-year-old female with a past medical history of dementia, hypertension, and hypothyroidism initially presented to the emergency department after a fall with no reported loss of consciousness. Family and social history were non-contributory and she was not on any anticoagulation. Her physical exam was significant for wrist pain, decreased skin turgor, and limited orientation. Neuroimaging was negative for intracranial bleed or fracture and an X-ray of the wrist demonstrated a right distal radial fracture. Her labs were significant for anemia with a hemoglobin of 9.8, acute kidney injury with a creatinine level of 1.56, and occult blood in the stool. Urinalysis was positive for bacteria, leukocyte esterase, and numerous white blood cells. The patient was admitted for observation and management of acute kidney injury, urinary tract infection, anemia, and dehydration.



The following day, she was reported to have a melanotic stool and her hemoglobin rapidly dropped from 9.8 to 6.1. Gastroenterology was quickly consulted for esophagogastroduodenoscopic (EGD) evaluation, due to concern for an upper gastrointestinal (GI) bleed. Once the endoscope was advanced into the stomach, a sizable amount of fresh blood was seen and the exam was aborted. Endotracheal intubation and resuscitation measures were employed before the endoscope was again reintroduced. A large pyloric ulcer with an adherent blood clot was identified and the area was injected with 10 ccs of epinephrine (1:10,000) and the scope was once again withdrawn. The patient was transferred to the intensive care unit for continued resuscitation and intubation management.

Four hours later, the patient was re-evaluated for adequate hemostasis with a third EGD. Once again, a large amount of fresh blood was identified with limited visualization of the bleeding source. The endoscope was withdrawn, and general surgery was consulted.

The patient was taken to the operating room emergently for an exploratory laparotomy. An eight cm gastroduodenostomy incision was made and a pulsatile, bleeding ulcer was quickly discovered in the second portion of the duodenum. Hemostasis was achieved via suture ligation by placing multiple 3-0 silk sutures in a figure of eight fashion.

A nasogastric (NG) tube was advanced past the gastroduodenostomy, and the incision was closed with interrupted 3-0 silk sutures. The falciform ligament was mobilized and placed over the gastroduodenostomy incision but since the flap did not cover the incision completely, a smaller segment of omentum was placed on the gastroduodenostomy and both were sutured to the serosa of the bowel with 3-0 silk suture.

Primary closure of the fascia was with 0-loop polydioxanone suture (PDS) in a bi-directional fashion and the skin was stapled closed. The patient tolerated the procedure well and remained intubated. She was transferred back to the ICU in stable condition for additional care and resuscitation.

On postoperative day (POD) 1, the patient was noted to have become hypotensive and a total of 600cc of sanguineous fluid was seen to have drained from her NG tube. The patient was again resuscitated, and pressors were initiated. Since IR was not available at this facility over the weekend, a repeat EGD was performed where the stomach was minimally insufflated to allow for adequate visualization. The scope was very carefully advanced and the ulcer was noted to have a hemostatic clot, the repair intact, and no active bleeding was seen. The patient again tolerated the procedure well and was returned stable to the ICU. She recovered well and was resting comfortably after the procedure.

CONCLUSIONS

Throughout the admission, the patient received eleven units of packed red blood cells, seven units of fresh frozen plasma, and two units of platelets. The patient remained stable in the ICU but, she was transferred on POD 1 after the post-operative EGD to a tertiary care center with IR capability for possible embolization. The patient was transferred in critical condition with stable vital signs, without pressors or anti-hypertensive agents. Of note, she continued to do well and did not require any additional blood products or IR intervention since her transfer. She remains in their ICU on POD 7 in stable condition.

In this case, the patient continued to have GI bleeding after medical and endoscopic management, meeting indications for definitive surgical intervention in the setting of an acute upper GI bleed. Adequate ulcer hemostasis and repair of the gastroduodenostomy were achieved in this case but, a large amount of sanguineous output through the NG tube prompted re-evaluation. This was unique in that it involved an EGD performed in a fully prepared OR, in case of a rebleeding or perforation scenario. Insufflation was kept to a minimum, just enough for adequate visualization, without risking perforation. In this case, no further bleeding was identified and hemostasis over the ulcer was confirmed. This technique presents a possible viable avenue for facilities without available IR intervention to reassess patients with acute GI bleeds if necessary, although the transfer to a facility with IR remains the best course of action.

REFERENCES

[1] V.K. Kapoor, A. Sharma, A. Behari, R.K. Singh, Omental flaps in pancreaticoduodenectomy., JOP. 7 (2006) 608–15. http://www.ncbi.nlm.nih.gov/pubmed/17095840.

[2] K. Søreide, K. Thorsen, J.A. Søreide, Strategies to improve the outcome of emergency surgery for perforated peptic ulcer., Br. J. Surg. 101 (2014) e51-64. https://doi.org/10.1002/bjs.9368.