



Inadequate Sedation Leads to Unexpected Postoperative Wound Evisceration during a Bedside Endoscopy

Im-kyung Kim¹, Se Hee Na², Joon Seong Park³, Man Ki Ju³, and Cheung Soo Shin²

¹Department of Surgery, Ajou University School of Medicine, Suwon; ²Department of Anesthesiology and Pain Medicine, Anesthesia and Pain Research Institute, ³Department of Surgery, Yonsei University College of Medicine, Seoul, Korea

Dear Editor:

Critically ill patients often experience upper gastrointestinal (GI) bleeding. Most patients in the intensive care unit (ICU) are in a poor state of health, and therefore difficult to transfer to the endoscopy room. In such situations, a bedside endoscopy is a useful approach for bleeding control. Here, we report a case of postoperative surgical wound evisceration after a bedside upper GI endoscopy without additional sedation in a critically ill patient.

A 79-year-old man with common bile duct cancer was admitted for surgery. He underwent segmental resection of the common bile duct and hepaticojejunostomy. On the 3rd postoperative day, he developed sudden chest pain and desaturation. Owing to a deterioration in his consciousness, he was immediately intubated. The electrocardiogram showed elevation of the ST segment, and coronary angiography was performed for a definitive diagnosis of ST-elevated acute myocardial infarction.

The patient was admitted to the ICU after coronary angiography. Percutaneous coronary intervention was not performed, and only medication therapy was suggested. Medications including anticoagulants and β -blocker were started via Levin tube. The surgical intensivist initiated enteral nutrition by stepwise escalation of caloric intake up to 28 kcal/kg/d. On the 4th day of ICU admission, abdominopelvic computed tomography confirmed an intact anastomosis and incision site. His midline incision healed completely, and all stitches were removed.

On the 16th day after ICU admission, he developed bleeding from a stress-induced gastric ulcer. The patient was still intubated and sedated using fentanyl infusion (1.0 mcg/kg/hr). The estimated Richmond Agitation-Sedation Scale (RASS) was 0. An emergency bedside esophagogastroduodenoscopy was performed by

Received on May 16, 2017

Revised on July 15, 2017

Accepted on October 11, 2017

Se Hee Na

Department of Anesthesiology and Pain Medicine, Anesthesia and Pain Research Institute, Yonsei University College of Medicine, 211 Eonju-ro, Gangnam-gu, Seoul 06273, Korea
Tel: +82-2-2019-6809
Fax: +82-2-3463-0940
E-mail: seheena@yuhs.ac

*No potential conflict of interest relevant to this article was reported.



Figure 1. Postoperative wound evisceration during a bedside upper gastrointestinal endoscopy.

a GI endoscopist with no administration of additional sedatives or relaxants prior to the procedure under a concern of low blood pressure. While the endoscopist was trying to locate the focus of bleeding, the patient showed poor tolerance, and severe agitation estimated as a +2 score using RASS scoring system. Unexpectedly, small intestine was seen to burst out from his abdominal cavity through the surgical incision site (Figure 1). The endoscopist ended the procedure, and the patient was moved to operating room for abdominal wall closure.

The incidence of significant pain is 50% or higher in both medical and surgical ICU [1,2]. Most patients in the ICU cannot report their pain due to low levels of consciousness or mechanical ventilation. Uncontrolled pain can manifest as agitation or delirium. The American Association of Critical Care Medicine and Society of Critical Care Medicine has released guidelines for management of pain, agitation and delirium (PAD) in adult patients in the ICU [3]. Recently, a large prospective

cohort study reported that implementation of PAD guidelines is associated with improvements in both in-hospital survival and incidence of delirium in ICU patients [4].

Nevertheless, with respect to sedation required for bedside procedures, evidence-based recommendations have not yet been established. According to the guidelines for sedation in GI endoscopy [5,6], the target sedation level for routine examination is conscious sedation, where a patient retains the ability to purposefully respond to a verbal or tactile stimuli while cardiorespiratory function and airway protective reflex are maintained. However, in therapeutic endoscopy, even general anesthesia or deeper sedation by an anesthesiologist is an option where a stable level of sedation of long duration is required. In our case, the patient could not be administered additional analgesics or sedatives because of hemodynamic instability, and the endoscopist could not adequately examine the operative field to locate the site of bleeding owing to the patient's agitation. To optimize the operative field, the endoscopist provided higher air insufflation, and consequently abdominal distension from excessive intra-abdominal pressure led to complete evisceration of incision site, as previously reported [7].

To the best of our knowledge, this is the first case which described a postoperative wound evisceration during a bedside upper GI endoscopy in ICU patients. Even though the ICU is becoming a more common place for invasive or surgical procedures to eliminate risks of transporting critically ill patients [8], performing bedside procedure remains as difficult as ever in those with poor prognosis. Additionally, it must be understood that the ICU environment cannot always guarantee optimal patients' preparation or instrumental support. Therefore, multidisciplinary ICU teams need to be involved to provide proper levels of analgesia and sedation when bedside procedures are planned. Devising efficient and self-reliant protocols would be a key to effective strategies for achieving a safe and successful bedside procedure.

ORCID

Im-kyung Kim <http://orcid.org/0000-0001-8505-5307>
 Se Hee Na <http://orcid.org/0000-0003-4208-0769>
 Joon Seong Park <http://orcid.org/0000-0001-8048-9990>
 Man Ki Ju <http://orcid.org/0000-0002-4112-7003>
 Cheung Soo Shin <http://orcid.org/0000-0001-7829-8458>

REFERENCES

1. Mansouri P, Javadpour S, Zand F, Ghodsbin F, Sabetian G, Masjedi M, et al. Implementation of a protocol for integrated management of pain, agitation, and delirium can improve clinical outcomes in the intensive care unit: a randomized clinical trial. *J Crit Care* 2013;28:918-22.
2. Sessler CN, Varney K. Patient-focused sedation and analgesia in the ICU. *Chest* 2008;133:552-65.
3. Barr J, Fraser GL, Puntillo K, Ely EW, Gélinas C, Dasta JF, et al. Clinical practice guidelines for the management of pain, agitation, and delirium in adult patients in the intensive care unit. *Crit Care Med* 2013;41:263-306.
4. Barnes-Daly MA, Phillips G, Ely EW. Improving hospital survival and reducing brain dysfunction at seven California community hospitals: implementing PAD guidelines via the ABCDEF bundle in 6,064 patients. *Crit Care Med* 2017;45:171-8.
5. ASGE Ensuring Safety in the Gastrointestinal Endoscopy Unit Task Force, Calderwood AH, Chapman FJ, Cohen J, Cohen LB, Collins J, et al. Guidelines for safety in the gastrointestinal endoscopy unit. *Gastrointest Endosc* 2014;79:363-72.
6. Obara K, Haruma K, Irisawa A, Kaise M, Gotoda T, Sugiyama M, et al. Guidelines for sedation in gastroenterological endoscopy. *Dig Endosc* 2015;27:435-49.
7. Ramneesh G, Sheerin S, Surinder S, Bir S. A prospective study of predictors for post laparotomy abdominal wound dehiscence. *J Clin Diagn Res* 2014;8:80-3.
8. Dennis BM, Gunter OL. Surgical procedures in the intensive care unit: a critical review. *OA Crit Care* 2013;1:6.