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WJGE mainly publishes articles reporting research results and findings obtained in the field of gastrointestinal endoscopy and covering a wide range of topics including capsule endoscopy, colonoscopy, double-balloon enteroscopy, duodenoscopy, endoscopic retrograde cholangiopancreatography, endosonography, esophagoscopy, gastrointestinal endoscopy, gastroscopy, laparoscopy, natural orifice endoscopic surgery, proctoscopy, and sigmoidoscopy.

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Acute upper gastrointestinal bleeding: A stitch on time saves nine

Nishkarsh Gupta, Anju Gupta

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Abstract

Upper gastrointestinal bleeding is common and often needs timely intervention for optimal outcomes. Esophageal bleeding may occur due to local advancement of malignancy or bleeding from an arterio-oesophageal fistula. We discuss the management options available for such cases.

Key Words: Esophageal bronchial artery; Upper gastrointestinal bleeding; Bleeding; Fistula; Gastrointestinal

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Core Tip: Esophageal bronchial artery fistula is a rare serious cause of upper gastrointestinal bleeding and needs to be managed appropriately. If unrecognized, it can be catastrophic. We discuss the management options for upper gastrointestinal bleeding due to these fistulas as a response to a previously published article.

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TO THE EDITOR

Acute upper gastrointestinal bleeding (UGIB) is a relatively common medical emergency with approximately 400000 cases/year and corresponding mortality rates of up to 16%[1]. In the index report, authors describe a rare case of UGIB due to an

esophago-bronchial artery fistula, in a patient with carcinoma of the esophagus with an esophageal metallic stent *in situ*[2]. The local advancement of the esophageal malignancy probably contributed to the UGIB as in this case the bronchial artery was non-aneurysmal.

Arterio-esophageal fistula (AEF) is a rare abnormal communication between the aorta and esophagus, with thoracic aortic aneurysm being the commonest association[3]. It can present as massive bleeding which can be potentially life-threatening. It is difficult to be diagnosed by endoscopy and therefore, requires a high index of suspicion. Another type of AEF is subclavian artery-esophageal fistula which has been previously reported in few patients with prolonged nasogastric intubation and such patients should be screened for the possibility of an aberrant aortic arch system to avoid this fatal complication [4,5].

Esophageal bronchial artery fistula is a rare serious cause of UGIB, which can be fatal if unrecognized. Bronchial artery aneurysm/pseudoaneurysm is commonly associated in such cases. Jadeja *et al*[6] reported a case of an esophageal-bronchial artery fistula due to pseudoaneurysm resulting from an endobronchial ultrasound-guided transbronchial needle aspiration. The case was successfully managed by endoscopic therapy and coil embolization.

Any patient with UGIB needs to be resuscitated with intravenous fluids, blood and blood products, vasopressors, and hemostatic agents as appropriate. In patients who become drowsy, confused, or hypoxemic, they would need prompt airway protection with endotracheal intubation to avoid aspiration and respiratory compromise. Antibiotics may be needed especially in patients with variceal bleeding and coexisting ascites or endocarditis.

Studies have shown improved outcomes with an urgent endoscopic management in the critically ill patients with hemodynamic instability or continuing transfusion requirements[7]. Urgent evaluation allows the identification of the type of bleeding, permits targeted therapy, and allows stratification of the sequelae of the bleeding which allows urgent risk stratification, and it also allows the early identification of the patients who would be suitable candidates for an early interventional radiological procedure or surgical intervention. In the index case also, since active bleeding was not seen on endoscopy, the patient could be further evaluated using computed tomography, which revealed signs of fistula between the bronchial artery and the esophagus. Even though there was no active bleeding, bronchial artery embolization was done as the signs of fistula formation were observed. Stent removal and re-stenting were done endoscopically along with embolization. Arteriography can provide a definitive diagnosis of source of bleeding and also yield temporary hemostasis by tamponade[4].

Endoscopy may be done under sedation or general anesthesia with endotracheal intubation depending on patient's sensorium and haemodynamic status. However, in the present report the mode of anesthesia has not been commented upon. Various nonoperative endoscopic hemostatic techniques have been recommended in cases where an active bleeding vessel can be identified as a source of UGIB. These treatment options include esophageal stenting, endoscopic fibrin application, injection therapy, thermal cautery, and endoclip application[8,9,10,11,12,13]. An epinephrine-saline solution injected in four quadrants surrounding the lesion is usually employed for endoscopic injection therapy. Mechanical hemostasis with hemoclips has been found effective for peptic ulcer bleeding with the advantage of minimal tissue disruption, leading to a likely faster ulcer healing. Recently, OverStitch (Apollo Endosurgery Inc., Austin, TX, United States) has been developed as an attractive minimally invasive device for endoscopic suturing which can potentially be useful for closing small perforations and fistulas without the need for surgical intervention[12,13].

Argon plasma coagulation is a technique which appears to be the most effective for broad ill-defined lesions such as vascular ectasias but also has been effectively employed in bleeding ulcer therapy[9].

Hemospray (Cook Medical, Winston-Salem, NC, United States) is a promising new therapy recently introduced for the management of UGIB. It is a hemostatic powder that acts as both a cohesive and an adhesive substance and thereby creates a mechanical barrier[10]. Cryotherapy has gained wider recognition particularly as a management modality for arteriovenous malformation. It allows for tissue destruction *via* freezing by nitric monoxide at a temperature of -89.5°C and creating an ice layer on the surface of the mucosa[9,11].

To conclude, AEF is a rare cause of UGIB and needs a high index of suspicion and interdisciplinary management. Minimally invasive endoscopic or interventional radiology treatment modalities are effective in managing the majority of such cases.

FOOTNOTES

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