Case Report

Gastric Pneumatosis after Endoscopic Argon Plasma Coagulation

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Abstract

Introduction: Endoscopic argon plasma coagulation (APC) is gaining widespread usage but its risk is underreported. Clinical Picture: A 74-year-old man who received radical radiotherapy for gastric carcinoma 6 months ago was admitted for anaemia and maelena. Gastroscopy revealed haemorrhagic radiation gastritis. Endoscopic APC was performed but terminated when he complained of severe epigastric pain. Computed tomography scan showed gastric pneumatosis. Treatment: His pain subsided with a period of overnight rest and observation. Outcome: He continued to have 3 sessions of endoscopic APC at monthly intervals and at 10 months post-treatment, his haemoglobin remained stable at 11.1 g/dL. Conclusions: This case report highlights a complication of gastric pneumatosis and discusses the safe usage of this modality of endoscopic haemostasis. This is to increase cognisance of this potentially fatal complication among endoscopists.

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Key words: Computed tomography, Haemostasis, Maelena

Introduction

Argon plasma coagulation (APC) is a major haemostatic modality for large surface bleeding areas.[1] It effects thermal coagulation with limited and controlled tissue depth by using high-frequency monopolar electrosurgical current via an ionised argon gas stream. When used endoscopically, a flexible probe passed through the accessory channel provides non-contact end-on and tangential flow effect. In spite of its expanding field of therapy, there has been a paucity of reports on its complications and safety tips on its usage.

Case Report

A 74-year-old man was diagnosed with localised gastric cardia adenocarcinoma when he presented with intermittent dysphagia. He chose to be treated with chemotherapy and fractionated external beam radiotherapy of 54 Gy. Six months post-treatment, he was admitted, complaining of maelena with a haemoglobin of 5.7 g/dL. Gastroscopy revealed haemorrhagic gastritis in the body and antrum of the stomach (Fig. 1). Biopsy did not reveal malignancy at the site of previous involvement but radiation-induced gastritis. Endoscopic APC was performed using a 7 Fr

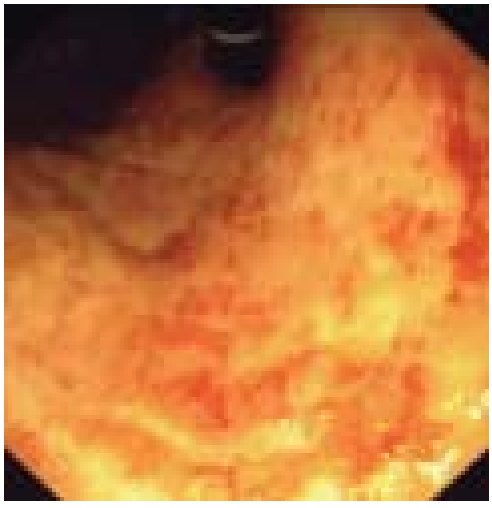

Fig. 1. Retroflexed end-on endoscopic view showing multiple telangiectasias, typical of radiation gastritis at the proximal stomach.

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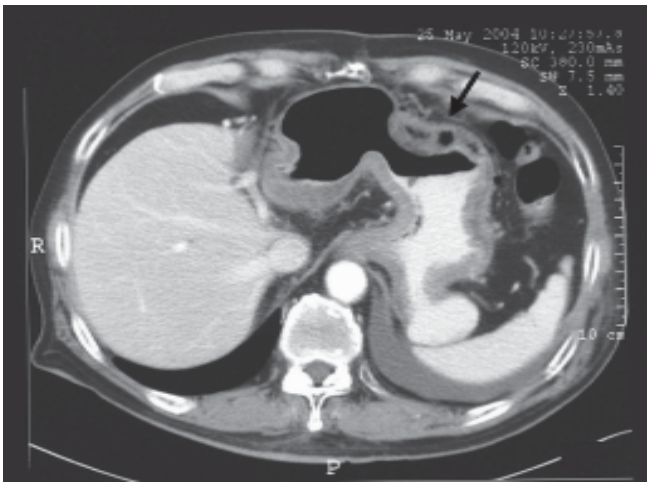

Fig. 2. Axial computed tomography scan of the abdomen with oral contrast in the stomach showing focal linear gas within the anterior gastric wall.

probe through a single channel upper endoscope at a setting of 60W and a flow rate of 2 L/min. He complained of severe epigastric pain, which required treatment to be stopped. His vital signs were stable with no tachycardia and there were no gross areas of endoscopic mucosal discontinuity. A computed tomography (CT) scan (Fig. 2) was performed. He had no abdominal signs and the pain subsided overnight. The next day, he was discharged with a course of oral antibiotics and proton-pump inhibitor. Following that, he had 3 more sessions of endoscopic therapy at monthly intervals. He remained well and at the last review, 10 months after the last therapy, his haemoglobin was stable at 11.1 g/dL.

Discussion

Mucosal disruption occurs when there is deep thermal injury caused by contact of the probe, high-power or high-argon gas flow. Combined with this, gastric over-distension and patient retching can cause air to be forced into the gastric wall.[1,2] As this dissected gas is reabsorbed quickly, iatrogenic gastric pneumatosis is usually treated expectantly. Nevertheless, it can be potentially disastrous if left unrecognised and unchecked as it can lead to gastric perforation. It also causes patient discomfort and shortens treatment sessions. Hence, one must be cognisant of this potential complication to optimise therapy.

Mucosal contact with the probe during energy discharge must be avoided. Initial setting (preferably the lower limit) of the appropriate recommended power and argon gas flow with small increments helps to titrate optimal therapy. To avoid over-distension, regular pause with repeated suctioning is required when using single-channel scope. The double-channel scope, albeit its larger diameter allows simultaneous suctioning during the procedure without the need to remove the probe. It is also essential to keep the duration of the therapy within the patient's level of tolerance.

The dissection of the gastric submucosa and deeper layers by the high flow gas causes acute abdominal pain simulating a perforation. It is difficult to distinguish gastric pneumatosis from iatrogenic perforation as both have minimal abdominal signs unless the rent in the latter is big with heavy soilage. An erect chest or decubitus abdominal X-ray may help to detect free intra-abdominal free gas, otherwise a CT scan may be necessary for the diagnosis of either condition. Hence, cognisance and safe usage of endoscopic APC is the key to optimal therapy and prevention of such complications.

REFERENCES

1. Grinsberg GG, Barkun AN, Bosco JJ, Burdick JS, Isenberg GA, Nakao NL, et al; American Society for Gastrointestinal Endoscopy. The argon plasma coagulator. Gastrointest Endosc 2002;55:807-10.
2. Pear BL. Pneumatosis intestinalis: a review. Radiology 1998;207:13-9.