

# Successful Treatment of Radiation-Induced Hemorrhagic Gastritis by Prednisolone

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## Abstract

Radiation-induced gastritis is a rare cause of gastrointestinal bleeding. Currently, the standard method for treatment of radiation-induced hemorrhagic gastritis has not been established. We presented a 53-year-old female patient with hemorrhagic gastritis and recurrent melena following external radiotherapy for cholangiocarcinoma. Endoscopic local injection and anti-secretory therapy were performed for hemostasis, but the symptoms still occurred off and on. Finally, high dose prednisolone was prescribed to her. The response was dramatic, and bleeding stopped 2 days later. She was then discharged with stable condition. There was no gastrointestinal bleeding in subsequent 5-month follow-up period. In conclusion, steroid therapy can effectively treat some patients with radiation-induced hemorrhagic gastroenteritis. ( J Intern Med Taiwan 2006; 17: 39-42 )

**Key Words** : Radiation, Hemorrhagic gastritis, Prednisolone

## Introduction

Unlike radiation proctopathy, radiation-induced gastritis is a rare cause of gastrointestinal bleeding. We presented a 53-year-old female patient with hemorrhagic gastritis following external radiotherapy for cholangiocarcinoma. She was successfully treated by prednisolone therapy.

## Case report

A 53-year-old woman was diagnosed as cholangiocarcinoma of right lobe liver with main portal vein thrombosis and lymphadenopathy in March 1998. She received right lobectomy and lymphonode resection in April 1998. Four courses of intrahepatic arterial infusion chemotherapy with epirubicin, cis-

platin and VP-16 were administered at our Department of General Surgery from April 1998 to September 1998. Besides she had also received several courses of chemotherapy and fractionated external beam radiotherapy at Sun Yet-Sen Cancer Center of Koo Foundation later. In December 1998, the patient began to suffer from intermittent melena, and she was admitted to our Gastrointestinal Ward two months later. On account of anemia (hemoglobin: 8.3 g/dL), blood transfusion was administered. A panendoscopy revealed diffuse hyperemic mucosa with telangiectasis from body of stomach to second portion of duodenum (figure 1). In addition, multiple hemorrhagic patches with active oozing were found over antrum (figure 2). Local injection and local spray with diluted epinephrine were done, but bleeding persisted. Lansoprazole and sucralfate were given in initial 1 month of hospital course. However, upper gastrointestinal bleeding with hypovolemic shock still occurred off and on. Under the impression of radiation-induced gastroenteritis, prednisolone, 40 mg daily, was prescribed to her, and its response was dramatic. Bleeding stopped 2 days later, and series blood examinations showed stable hemoglobin levels. She was discharged with stable condition 14 days following prednisolone therapy. Two months later she received follow-up panendoscopy, which revealed erythematous patches over antrum and body only. She received maintenance prednisone therapy (5 mg daily) later, and no gastrointestinal bleeding recurred in subsequent 5-months.

## Discussion

Radiation therapy delivered to the upper abdomen may damage the gastric wall<sup>1,2</sup>. The initial injury is characteristically acute inflammation of gastric mucosa. If injury progresses, vasculopathy of submucosa may occur and progress to obliterative endarteritis, vasculitis, and endothelial proliferation, leading to mucosal ischemia, ulceration, telangiectasia, and fibrosis<sup>3-6</sup>.

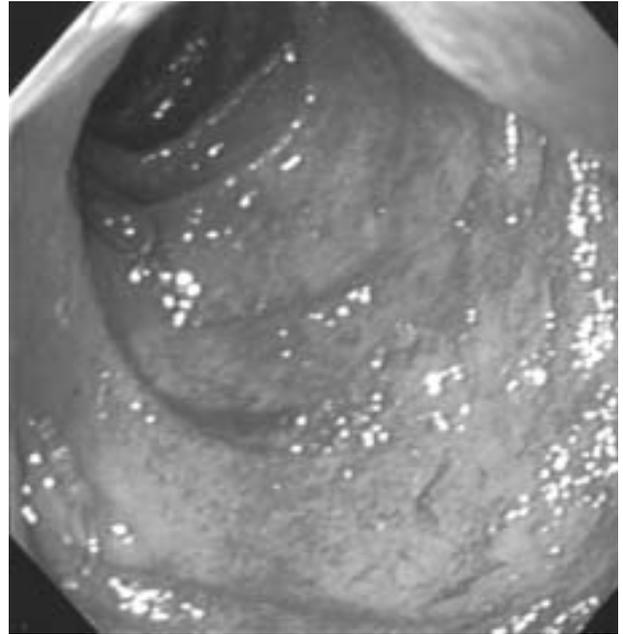


Fig.1. Hyperemic mucosa with telangiectasis in the second portion of duodenum.

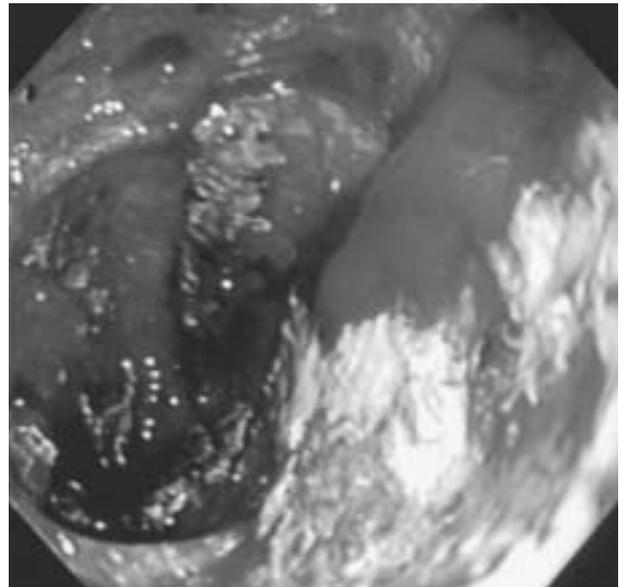


Fig.2. Multiple hemorrhagic patches with active oozing were found over antrum.

The diagnosis of radiation-induced gastritis is based on a high index of clinical suspicions for patient who received radiation therapy for upper abdomen lesions. The clinical presentations include epigastric pain, dysphagia, dyspepsia, heart burn sensation or melena. Endoscopy should be arranged for the patients presenting with aforementioned symptoms following radiation therapy for upper abdomi-

nal organs. The characteristic finding of radiation-induced gastric injury is the presence of telangiectasia, as seen in our patient. Other endoscopic findings include diffuse erythema of mucosa, shallow or deep ulcers and scar formation.

Currently, the golden standard method for treatment of radiation-induced hemorrhagic gastritis has not been established. Argon plasma coagulation is a new method of noncontact electrocoagulation in which high-frequency energy is delivered to the tissue through ionized argon. This technique is well suited for the coagulation of large bleeding surfaces and has the advantage of a limited depth of penetration (2 to 3 mm), thus minimizing risks for transmural necrosis and stricture formation, fistulization, and perforation<sup>7</sup>. It had been reported for successful hemostasis of radiation-induced hemorrhagic gastritis, colitis and proctitis<sup>7,8,9</sup>. Epsilon-aminocaproic acid, a fibrinolysis inhibitor which inhibits plasminogen activator, was reported effectively in control bleeding of radiation gastritis<sup>5</sup>. It helped fibrin deposits to control bleeding from multiple bleeding sites and mucosal ectasias in radiation-damaged gastrointestinal mucosa<sup>5</sup>. Kochhar et al. reported that steroids successfully treated radiation-induced proctosigmoiditis<sup>10</sup>, and Giuseppe et al. reported hydrocortisone prevented acute radiation proctitis during conformal radiotherapy for prostate carcinoma<sup>11</sup>. However there is still insufficient data concerning the steroid effect on radiation-induced hemorrhagic gastritis.

The endoscopic injection therapy with diluted epinephrine plus anti-secretory therapy was initially done for hemostasis in our patient with severe radiation gastroenteritis, but the effect was poor. At the time there was no machine of argon plasma coagulation in our hospital. We therefore tried high-dose prednisolone therapy, and it effectively controlled bleeding.

Radiation-induced severe hemorrhagic gastritis is rare. Currently argon plasma coagulation hemostasis is thought as more suited method. Due to the in-

accessibility of argon plasma coagulation, we therefore tried high-dose prednisolone therapy. It is effective in our patient. In conclusion, steroid therapy may effectively treat some patients with radiation-induced hemorrhagic gastroenteritis who have poor responses to endoscopic and anti-secretory therapies. However current data is still insufficient, and further large studies are needed.

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# 以類固醇成功治癒放射線治療導致之 出血性胃炎：一病例報告

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## 摘 要

臨床上因放射線治療導致的出血性胃炎並不常見，目前亦無有效的治療方式。本文報導一位53歲的膽管癌女性病患在接受放射線治療後，發生出血性腸胃炎，合併有反覆性的解黑便及出血性休克。在以內視鏡腎上腺素局部注射合併氫離子阻斷劑藥物治療下，仍有反覆出血的情形。在氫氣電漿凝固止血治療法無法獲得的情況下，最後我們嘗試著以高劑量口服類固醇施以治療。結果病患的病情迅速改善，於投藥第二天後便未再有出血情況，且於二週後順利出院。在為期五個月的門診追蹤期間，並未再有出血情形。顯示類固醇對於控制某些放射治療後所引起的出血性胃腸炎有很好的效果。