

Endoscopic features of radiation gastritis after irradiation of hepatocellular carcinoma

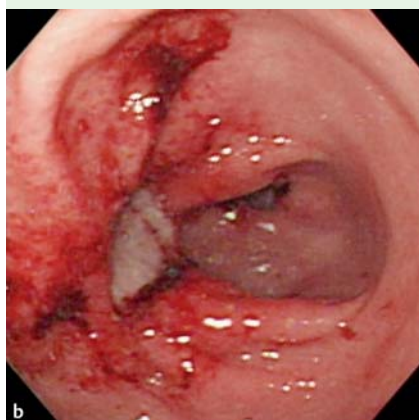
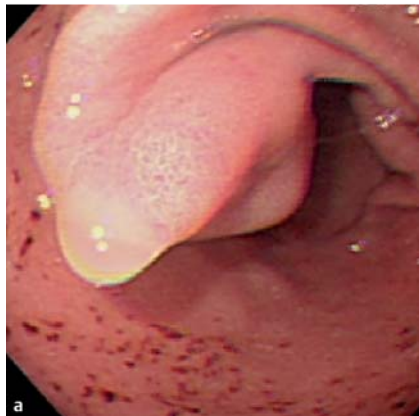


Fig. 1 Typical endoscopic appearance of acute radiation gastritis showing: **a** evidence of dark red petechiae that were scattered circumferentially in the proximal antrum; **b** patchy lesions and a concomitant gastric ulcer, which perforated 1 week later. In both cases the hemorrhagic gastritis had regressed 5 months later without ablative therapy.

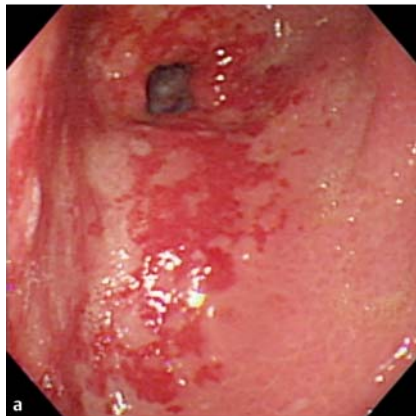
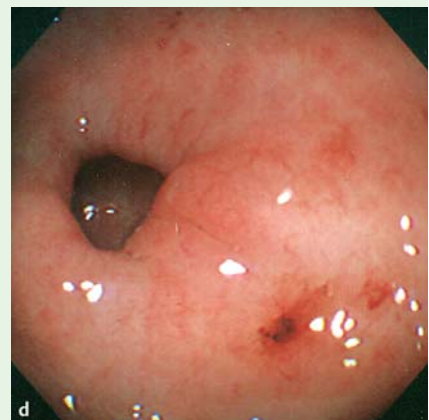
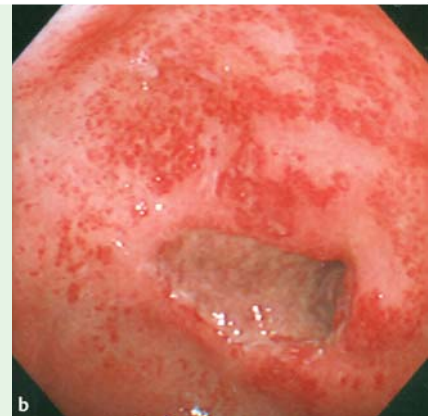


Fig. 2 Typical endoscopic appearance of radiation gastritis in the late period showing: **a** confluent red patches in the antrum and a pyloric ulcer; **b** bright red petechiae and an annular ulcer



in the distal stomach; **c** telangiectasias and shallow ulcers in a focal area of antrum; **d** faint red patches and telangiectasias in the distal stomach.

Radiation gastritis has rarely been reported [1]. In this study, radiation gastritis was defined on endoscopy as a red lesion, usually larger than 2 cm, that was sharply demarcated from the surrounding normal mucosa, and was found in a focal area of the stomach when erosive gastritis had been excluded. Overall, 31 patients were diagnosed as having radiation gastritis. Of these, 22, 13, and 3 also developed gastroduodenal ulcers, radiation duodenitis, and radiation colitis, respectively. The predominant lesion was in the antrum in 30 patients; the prepyloric antrum was involved in 27 patients. A total of 59 endoscopies were used to study the color and morphology of the gastritis lesions. Of the

eight endoscopies performed within 90 days of initiating radiotherapy (acute period), four demonstrated red lesions and four faint or dark red lesions (● Fig. 1 a); four showed petechiae (● Fig. 1 a), three had patchy lesions (● Fig. 1 b), and one showed telangiectasia. Of the other 51 endoscopies performed thereafter (late period), 47 demonstrated red lesions and four faint or dark red lesions; 38 demonstrated patchy lesions (● Fig. 2 a), 10 showed petechiae (● Fig. 2 b), and three showed telangiectasia (● Fig. 2 c, d). Acute gastrointestinal radiation toxicity arises from direct irradiation damage to the mucosa [2] and capillaries [3]. In this study, acute radiation gastritis often appeared as petechiae and inflammatory lesions of varying degrees of redness. Late gastrointestinal radiation toxicity primarily arises from chronic obliterative

endarteritis due to radiation damage to the endothelial cells of the arteriole [4,5]. Irradiation indirectly leads to ischemic injuries (ulcers) and angiogenesis. Angiogenesis, instead of inflammation and petechiae, predominates in late radiation gastritis, which may explain the red (often bright red) lesions of radiation gastritis in this period (● Fig. 2 a–c). In this study, radiation gastritis usually involved the prepyloric antrum, which was probably due to the characteristic anatomy of the irradiated area (predominantly celiac and portal vessels) and the differing radiosensitivity of the tissues [2].

Endoscopy_UCTN_Code_CCL_1AB_2AD_3AF

Competing interests: None

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DOI <http://dx.doi.org/10.1055/s-0033-1344421>
Endoscopy 2013; 45: E280–E281
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Stuttgart · New York
ISSN 0013-726X

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