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CASE REPORT

A squamous metaplasia in a gastric ulcer scar of the antrum

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Abstract

An 81-year-old man presented with epigastric pain and weight loss for one month. He had a past history of pulmonary tuberculosis, 10 years ago. We performed a gastroscopy, which showed a linear depressed whitish gastric ulcer scar (0.8 cm in length) in the posterior wall of the prepyloric antrum. The result of biopsy was reported as squamous epithelium. Immunohistochemical staining using an antibody to high molecular weight cytokeratin (HMC) revealed positive staining in the squamous epithelium. Two years later, the lesion was followed up. The lesion remained at same site endoscopically, but no squamous epithelium could be seen microscopically.

Key words: Squamous metaplasia; Gastric ulcer scar; High molecular weight cytokeratin

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INTRODUCTION

Squamous metaplasia of the stomach is not a rare clinical entity associated with gastroesophageal reflux disease and Barrett's esophagus at the cardia of the stomach[1-3]. It has been rarely described with other associated diseases, such as peptic ulcers[4], tuberculosis[5], syphilis[6], corrosive gastritis[7], extreme cachexia[8], pernicious anemia[9] and aberrant pancreatic tissue[10]. It may coexist with neoplasms[11,12].

However, there has been no report of squamous metaplasia occurring at an old ulcer scar site in the distal antrum with none of the associated diseases described above. We confirmed squamous metaplasia by a forcep biopsy with immunohistochemistry; it had disappeared spontaneously, microscopically, by the time of follow-up gastroscopy biopsy two years later.

CASE REPORT

The patient was an 81-year-old Korean man who was admitted to the authors' institution because of general weakness and loss of weight of 1 mo duration. He had pulmonary tuberculosis 10 years before admission. The patient was found to be thin, weighing only 36 kg. Breathing sound was decreased on the left lung field. Physical examination revealed no abnormal findings in the abdomen or elsewhere. The hematology values were more or less normal. Stool was negative for occult blood. Urinalysis and ECG were normal. Endoscopy revealed a linear depressed whitish old gastric ulcer scar of about 0.8 cm in length in the posterior wall of the prepyloric antrum (Figure 1). The lesion was slightly depressed. There was no evidence of malignancy in the biopsy, and squamous epithelium was obtained from the area (Figure 2). Immunohistochemical staining using an antibody against high molecular weight cytokeratin (HMC) (Moll's No 1, 5, 10, 14) from Dako (Carpinteria, California, USA) revealed positive staining in the squamous epithelium (Figure 3). Two years later, follow-up gastroscopy was performed, and the lesion was still present (Figure 4). A biopsy showed no evidence of malignancy, and no squamous epithelium was found. The patient is continuing to receive follow-up examinations in our hospital.

DISCUSSION

Squamous cell metaplasia of the stomach is not rarely reported in association with gastroesophageal reflux and distal esophageal inflammation. Takeda *et al* described

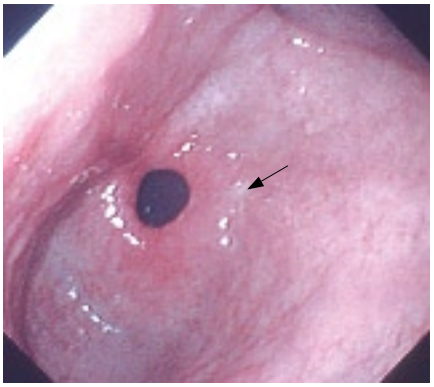

Figure 1 EGD showing a linear depressed whitish mucosal lesion of about 0.8 cm in length (arrow).

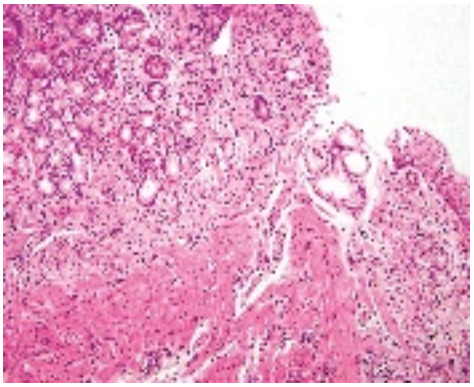

Figure 2 Photomicrograph showing squamous metaplasia (HE; original magnification, × 100).

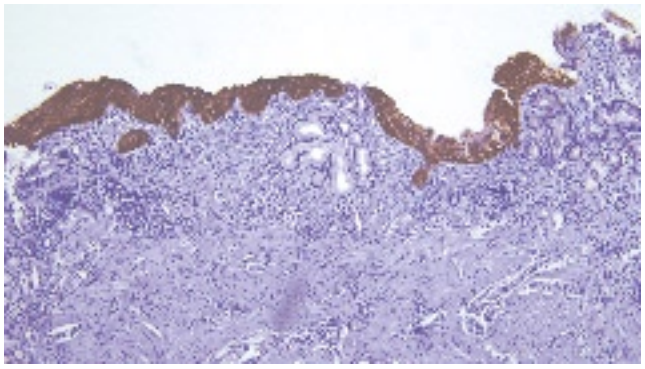

Figure 3 Photomicrograph showing an immunohistochemical demonstration of high molecular weight cytokeratin (original magnification, × 40).

Figure 4 Follow-up EGD showing a linear depressed whitish mucosal lesion without interval change (arrow).

two cases of squamous metaplasia in the lesser curvature of the cardiac region, which were recognized as white or pale mucosal areas, and the lesions were slightly depressed when sprayed with indigo carmine[1]. It has been known squamous cell metaplasia may affect the lesser curvature of the stomach preferentially, if it does not spread into the entire stomach[4]. In our case, squamous metaplasia developed at an old gastric ulcer scar site in the prepyloric antrum; this is the first reported case of squamous metaplasia in such a location and without associated disease. We confirmed the squamous metaplasia by forcep biopsy combined with immunohistochemistry (for HMC). To our knowledge, the present case is the first to describe positive immunohistochemical staining using an antibody against HMC. The distinctive staining pattern by HMC antibodies may help in the identification of squamous metaplasia. In animal studies, gastric squamous metaplasia has been experimentally induced in by the injection of pyrogallic acid[13] and methylcholanthrene[14].

It has been postulated the squamous epithelial cells develop as a progeny of a multipotent stem cells[15]. However, the pathogenesis of squamous metaplasia in the stomach remains speculative. Also, in these cases, the underlying pathogenesis of metaplasia is unknown, but it is thought to occur transiently, induced by gastric stem cells during the healing of gastric ulcers. This transient phenomenon of metaplasia was confirmed by comparing the results of the initial biopsy with those of a follow-up biopsy performed two years later. Whether squamous metaplasia of the stomach represents a premalignant change is not known. However, some reports have shown squamous cell carcinoma of the stomach sometimes develops from squamous metaplasia[4,6,7,11]. It is thought this case could have developed from gastric stem cells ontogenically, like a gastric squamous cell carcinoma. In our case, no tumorous change occurred at the metaplasia site during a two year follow-up period. Based on this evidence, close endoscopic follow-up is necessary for patients with squamous metaplasia in whom the pathogenesis of metaplasia remains to be elucidated.

In conclusion, we report a case of squamous metaplasia on the posterior wall side of the prepyloric antrum of the stomach, in an elderly male patient. Squamous metaplasia should be considered in patients with a white or pale depressed mucosal area by endoscopic examination. Careful and close endoscopic follow-up is warranted for patients with squamous metaplasia.

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