

Successful treatment of severe reflux esophagitis with erythromycin in a patient with progressive systemic sclerosis and proximal gastrectomy

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A case of severe reflux esophagitis related to progressive systemic sclerosis (PSS) and proximal gastrectomy was successfully treated with oral erythromycin (EM). A 53-year-old woman was troubled with severe heartburn related to PSS for a long period and had undergone proximal gastrectomy for a gastric cancer a few months before. She was not readily made free from heartburn by any anti-ulcer drugs and she could barely eat. Therefore she underwent continuous intravenous hyperalimentation (IVH). She was referred to our hospital for IVH. Nine months after the proximal gastrectomy, we gave oral erythromycin to her in expectation of improvement of the heartburn. Gradually she recovered from the heartburn and became able to eat small amounts.

EM is an agonist of motilin which is a gastrointestinal hormone. EM acts on the stomach and intestine not through the autonomic nervous system but through the circulation system of the blood. This is the reason why EM is effective in the residual stomach and intestine. In the case of severe esophagitis which is related to PSS and/or proximal gastrectomy and which resists anti-ulcer drugs, oral EM should be considered as a second therapy.

Key words: erythromycin, progressive systemic sclerosis, reflux esophagitis, heartburn, proximal gastrectomy

INTRODUCTION

After proximal gastrectomy, some patients feel heartburn as a symptom of reflux esophagitis. In these cases, even if they are given anti-ulcer drugs, they are not readily made free from the heartburn. Heartburn with reflux esophagitis related to progressive systemic sclerosis (PSS) is a refractory symptom. Using oral erythromycin (EM), we successfully treated a case of severe heartburn with reflux esophagitis related to PSS and proximal gastrectomy.

CASE REPORT

A 53-year-old woman was referred to our hospital in Jul 2000 for continuous intravenous hyperalimentation (IVH). From 40-year-old, she had heartburn related to PSS and the symptom was gradually worse (Fig. 1). A few months before, she underwent proximal gastrectomy for the gastric cancer reconstructed by jejunal pouch. She could drink and eat little due to heartburn as before the operation. Therefore she underwent continuous IVH. We gave mosapride and/or omeprazole to her in expectation of improving severe heartburn, but the symptom was not improved. In Jan. 2001, we examined her upper digestive tract by endoscopy. We recognized mild stenosis at the anastomosis and found remnants of food throughout the esophagus (Fig. 2). But the scope could pass through the anastomosis easily, and we found few remnants of food in the jejunal pouch. According to these findings, we thought the

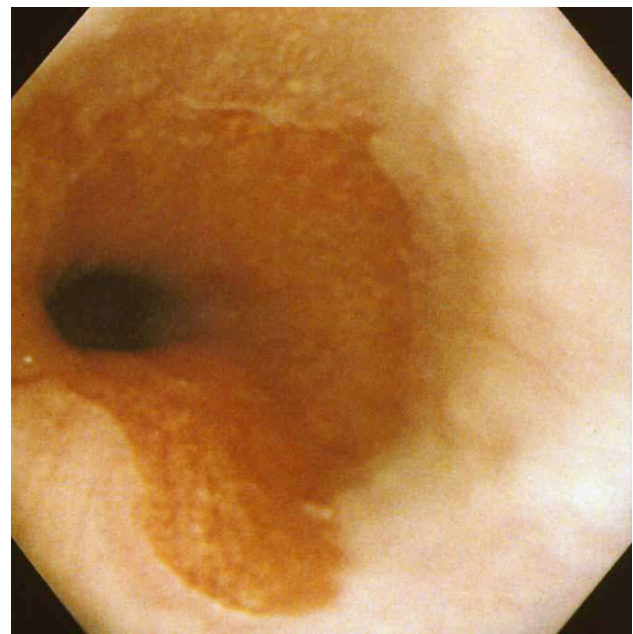


Fig. 1 Endoscopic findings of the esophagus before proximal gastrectomy. We found mucosal break and white muddy mucosa.

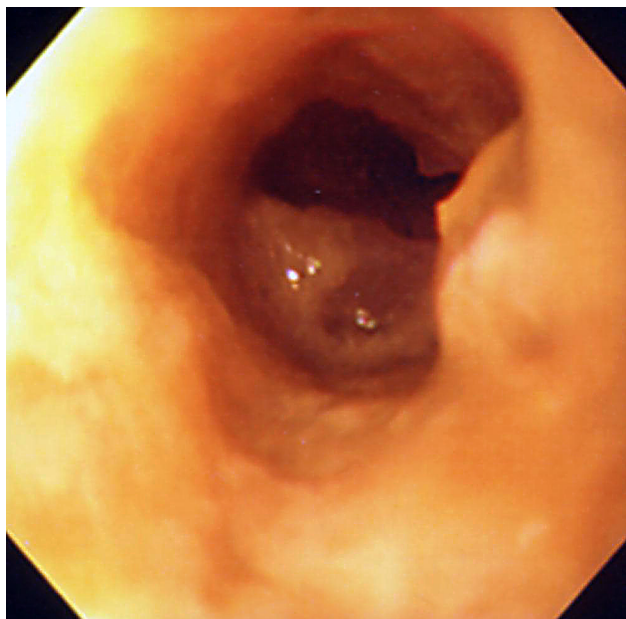


Fig. 2 Endoscopic findings of the esophagus before giving EM. We found remnants of foods throughout the esophagus.

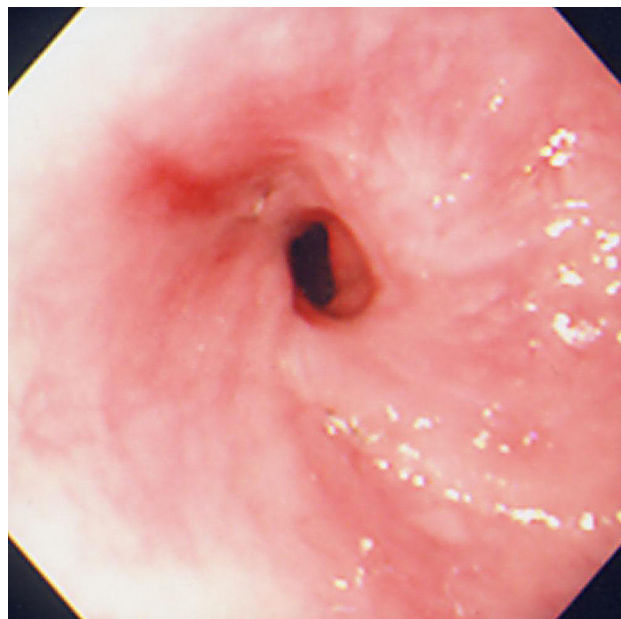


Fig. 3 Endoscopic findings of the esophagus after giving EM. There were no remnants of food and the esophageal mucosa was clear.

patient had peristaltic dysfunction from the esophagus to the jejunal pouch. From Feb. 2001, we gave her oral EM (200 mg four times daily) to improve peristaltic function. One month later, the heartburn was improved gradually and she could start eating. In Jun. 2001, we examined the upper digestive tract again. We could find no remnants of foods in the esophagus and the esophageal mucosa was clear (Fig. 3). In Jul. 2001, she was free from IVH. In Oct. 2001, she stopped taking EM. Subsequently, she felt heartburn sometimes, but the symptom was not so severe as before taking EM. She has been receiving nutrition only by eating, and now keeps her body weight at a good level.

DISCUSSION

Gastrointestinal and esophageal motor disturbances are common in patients with PSS and most of these patients suffer esophagitis in varying degrees [1]. Atrophy of the smooth muscle and fibrous replacement are seen in the lower esophagus, and lead to reflux and hypomotility [2, 3]. In addition, decreased lower esophageal sphincter pressure causes severe gastroesophageal reflux and its complications, including Barrett metaplasia, ulcers and strictures [4, 5].

We experienced a case with severe esophagitis associated with PSS and proximal gastrectomy for gastric cancer. We thought that our case had no relation to bile reflux because jejunal pouch was set between the esophagus and remnant stomach. This is the first report about successful treatment of severe esophagitis with erythromycin in a patient with PSS and proximal gastrectomy for gastric cancer. Endoscopic findings were mild but the heartburn as a symptom of esophagitis was very severe for a long period before the proximal gastrectomy. So we thought that this case was endoscopic negative reflux esophagitis. PSS and esophagitis had been treated with oral steroid and proton pump inhibitor, but heartburn was not improved. After the operation, severe heartburn continued. Anti-ulcer drugs

and mosapride were not effective for the heartburn. By endoscopic examination, we recognized mild stenosis at the anastomosis and remnants of foods throughout the esophagus. However the scope could pass through the anastomosis easily and we found few remnants of foods in the jejunal pouch. Furthermore, the patient had no dysphagia with stenosis of the anastomosis. According to these findings, we thought the patient had peristaltic dysfunction from the esophagus to the jejunal pouch. After administration of EM, heartburn was improved gradually. We could find no remnants of foods in the esophagus and the esophageal mucosa was clear. These findings suggest that EM improved peristalsis of the digestive tract including jejunal pouch and remnant stomach.

The gastrointestinal motor stimulating activity of EM was studied in dogs by Itoh *et al.* [6]. They described that the EM-induced contractions were quite similar to the naturally occurring interdigestive migrating contractions in the gastrointestinal tract in frequency, contractile force, duration, migrating velocity, and accompanying peaks of plasma motilin concentration. Moreover, some studies about derivatives of EM were performed [7]. These studies about EM and its derivatives document the efficacy in improving gastric emptying [7-11]. Garlson *et al.* reported gastric emptying efficacy of EM in dogs after Roux-Y antrectomy [12]. Motilin is a digestive hormone and EM is a motilin agonist that greatly increases the functional rate of gastric emptying [13]. Structurally, EM mimics motilin to some extent [14]. So, EM has a function of stimulating peristalsis, like motilin.

Dull *et al.* reported the efficacy of oral erythromycin for the treatment of gastroparesis associated with PSS [1]. In addition to PSS, our case had proximal gastrectomy for gastric cancer. EM was effective against severe heartburn which troubled the patient for a long period. This clinical improvement suggests that oral erythromycin might be effective for severe esophagitis associated

with PSS and/or with proximal gastrectomy.

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