

Fig. 1. UGI endoscopy of case 1 revealing multiple ovoid-shaped, sharply demarcated esophageal ulcers with normal intervening mucosa about 17-20 cm from the incisor.

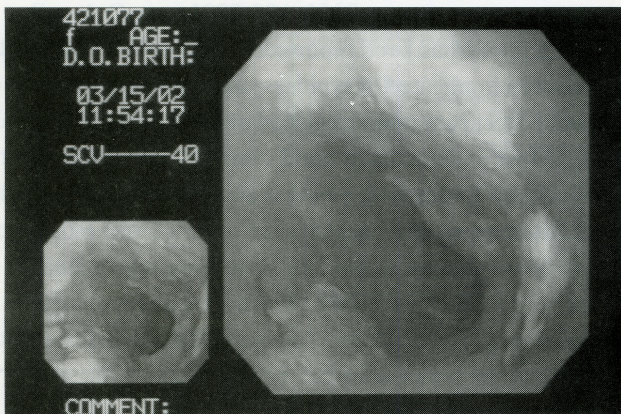


Fig. 2. UGI endoscopy of case 2 demonstrating multiple irregular esophageal ulcers about 25-31 cm from the incisor. The surrounding mucosa was normal.

normal (Fig. 2). She received oral Pantoprazole 40 mg q.d., and her symptoms had subsided by 1 week later. Follow-up esophagoscopy demonstrated normal findings 14 days after the initial endoscopy.

DISCUSSION

Glucosamine, an endogenous aminomonosaccharide, has been proposed to act as a substrate for the synthesis of cartilage components. Glucosamine sulfate has been used in recent years for treatment of osteoarthritis. The most frequently reported adverse effects

are gastrointestinal complaints. About 3% of individuals report slight dyspeptic symptoms or nausea.¹ To our knowledge, glucosamine sulfate has never been reported as the cause of drug-induced esophageal injury.

Production of esophageal ulcers by oral potassium chloride (KCl) was first described by Pemberton in 1970.² To date, more than 70 drugs have been reported to induce esophageal disorders. Antibiotics such as doxycycline, tetracycline, and clindamycin cause more than 50% of cases.³ Other commonly offending agents include NSAIDs,^{4,5} KCl, ferrous sulfate, alendronate, and quinidine sulfate.^{3,6-8} The true incidence of drug-induced esophageal ulcers is unknown since many patients do not seek medical care or are not reported. A Swedish study showed an incidence of 3.9 cases/100,000 population per year developing drug-induced esophageal ulcers.⁹

Individuals affected with drug-induced esophageal ulcers typically present with sudden onset of odynophagia or substernal chest pain exacerbated by swallowing within a period of hours to days after taking the offending drug. Some patients experience severe chest pain that mimics angina pectoris. Other symptoms include dysphagia or persistent foreign-body sensation in the esophagus. Most patients with drug-induced esophageal ulcers experience rapid clinical improvement after withdrawal of the offending agent. Occasionally, patients taking KCl, quinidine, or NSAIDs can develop persistent dysphagia due to esophageal stricture. Rarely, KCl and quinidine can produce deep ulcers complicated by hemorrhage, perforation, or even death.¹⁰

In uncomplicated cases with typical symptoms, diagnostic tests may be avoided if the history of taking a potentially injurious pill is elicited. Careful history-taking and physical examination are required to rule out complications and to permit planning an alternative to the implicated medication. Endoscopy is indicated by progressive or persistent symptoms, dysphagia as the predominant symptom, hemorrhage, and in immunocompromised patients. Endoscopy most commonly reveals 1 or more discrete ulcers with normal surrounding mucosa in the upper or mid-esophagus, as in our 2 cases. Diffuse inflammation