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### CASE 1

A 55 years old female, known case of diabetes mellitus and hypertension, presented with hematemesis. EGD was done and showed as Figure 1-4.

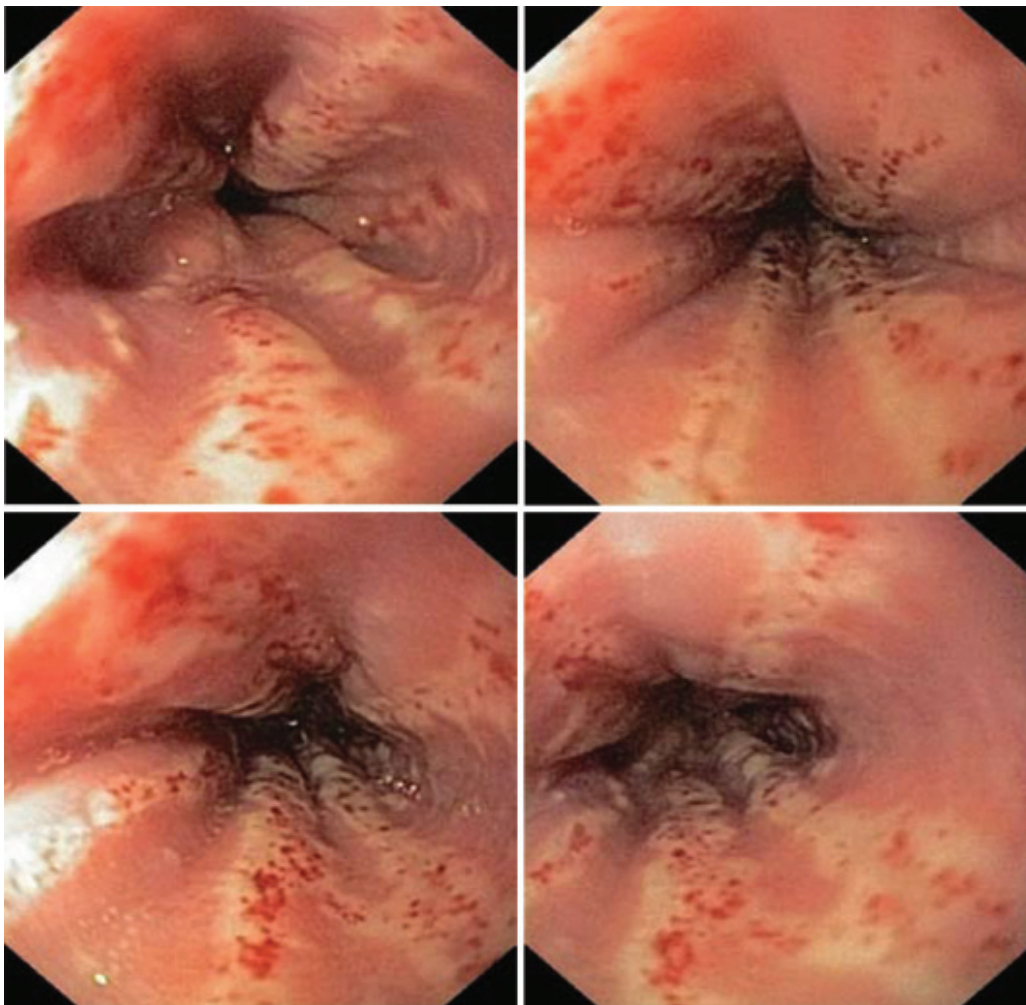


Figure 1-4.

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The EGD showed multiple linear erosions that is continuous between the top of adjacent mucosal folds along esophagus. These lesions are not circumferential. Reflux esophagitis Los Angeles classification grade C is the diagnosis.

The differential diagnosis are the other causes of esophagitis such as pill or infectious esophagitis.

The patient was treated by proton pump inhibitor and the bleeding was well controlled.

### Discussion

Gastroesophageal reflux disease is the preferred diagnosis when reflux esophagitis or excessive esophageal acid exposure is present or when symptoms are closely related to acid reflux events or respond to antireflux therapy<sup>(1)</sup>.

Endoscopy revealed severe reflux esophagitis (Los Angeles grades C and D), not common in clinical practice due to frequent use of proton pump inhibitor, is associated with bleeding and strictures.

These findings help to determine the most appropriate long-term therapy such as continuous potent acid suppression<sup>(2)</sup>.

### REFERENCES

1. Galmiche JP, Clouse RE, Balint A, *et al.* Functional esophageal disorders. *Gastroenterol* 2006;130:1459-65.
2. Talley NJ. Review article: gastro-oesophageal reflux disease-how wide is its span? *Aliment Pharmacol Ther* 2004;20 (Suppl 5):27-37.

### CASE 2

A 32 years old male patient, presented with odynophagia 2 weeks. Esophagogastroduodenoscopy was done and shown as Figure 5-6.

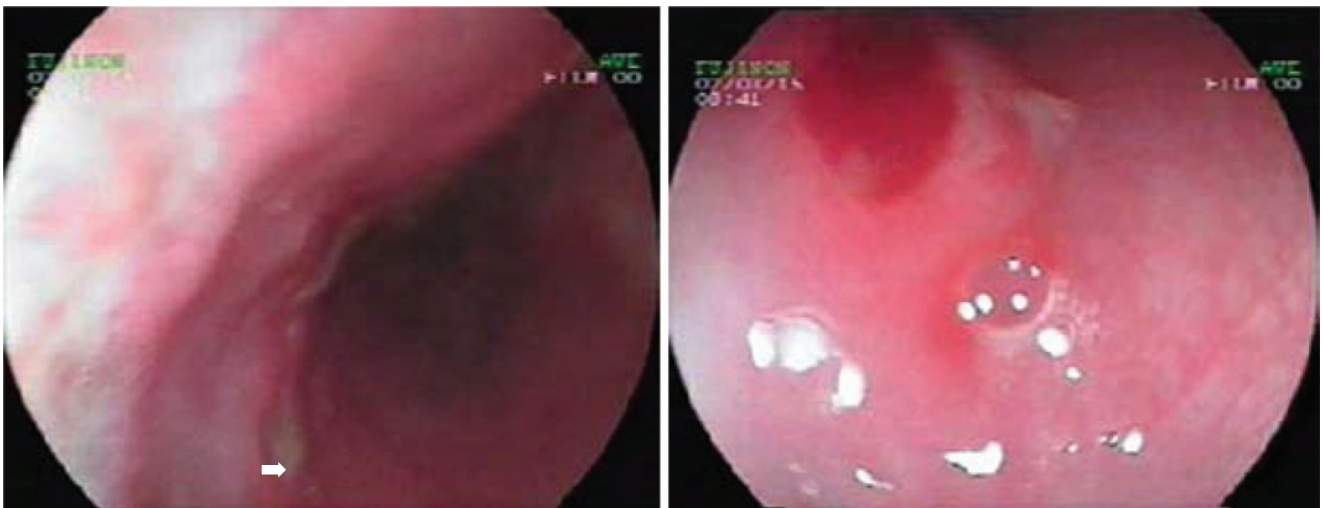


Figure 5-6.

Endoscopic findings showed punched out ulcers surrounding with inflammation scattered throughout the esophagus. There are whitish exudates or necrotic debris in the ulcers.

### Discussion

Esophagitis with ulcers from Herpes simplex was suspected. Differential diagnosis was CMV esophagitis. The characteristic of ulcers which were shallow, circumscribed ulcers with raised edges preferred Herpes simplex esophagitis. In this case, biopsy of ulcer showed HSV inclusions. Further investigation was found that this patient had HIV infection.

Dysphagia or odynophagia in a patient with advanced HIV infection and thrush usually indicates Candida esophagitis. Herpes simplex esophagitis are the cause of these symptoms in 2-5% of patients. If patient has fever, CMV esophagitis was more suspected.

Herpes simplex esophagitis has characteristic endoscopic appearances. In the early stage, vesicles are seen, which then slough to form discrete, circumscribed ulcers with raised edges. These lesions have punched-out or volcano-like appearances<sup>(1)</sup>. Cobblestoning can be seen due to clustering of these lesions. Exudates are present in a majority of cases<sup>(1,2)</sup>.

Mucosal necrosis is seen in the late stage<sup>(3)</sup>. The distal or mid-esophagus is most commonly involved, although in some cases the entire esophagus is affected.

If HSE is clinically suspected, biopsies from the ulcer edges should be obtained for both histopathology and viral culture<sup>(4)</sup>. Virus isolation by cell culture has traditionally been considered the diagnostic "gold standard" for herpes simplex infection. However, in recent years, HSV DNA PCR is fast becoming an invaluable tool in the diagnostic armamentarium of Herpes simplex infection.

### REFERENCES

1. Galbraith JC, Shafran SD. Herpes simplex esophagitis in the immunocompetent patient: report of four cases and review. *Clin Infect Dis* 1992;14:894-901.
2. Solammadevi SV, Patwardhan R. Herpes esophagitis. *Am J Gastroenterol* 1982;77:48-50.
3. McDonald GB, Sharma P, Hackman RC, Meyers JD, Thomas ED. Esophageal infections in immunosuppressed patients after marrow transplantation. *Gastroenterol* 1985;88:1111-7.
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### CASE 3

A 81-year-old male with an underlying non-small cell lung cancer stage IV has been treated with chemotherapy and steroid complained with progressive dysphagia for 1 month. An EGD was done as shown in Figure 7.

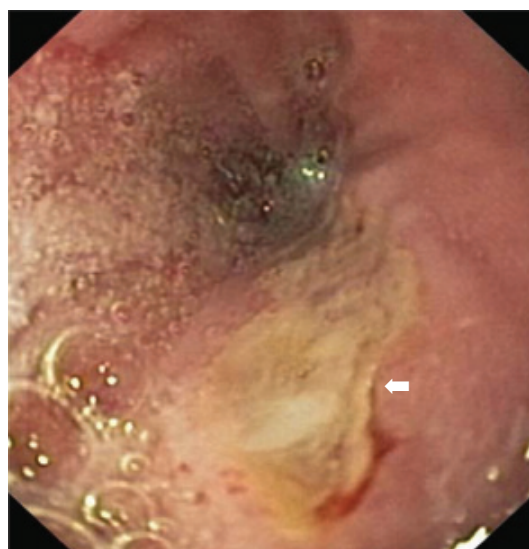


Figure 7.

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### Endoscopic findings

A large (3 × 2 cm.) oval shape ulcer with some necrotic base and exudate at the distal esophagus. There were multiple small shallow ulcers in the midesophagus.

Pathology demonstrated sparse distorted atypical cells with enlargement and intranuclear inclusion (white arrow) in Figure 8. Patient's CMV-viral load

by PCR was 2,010 copies/mL.

### Diagnosis

CMV esophagitis

### Differential diagnoses

Herpes esophageal ulcer, Pill induced ulcer, and HIV esophageal ulcer.

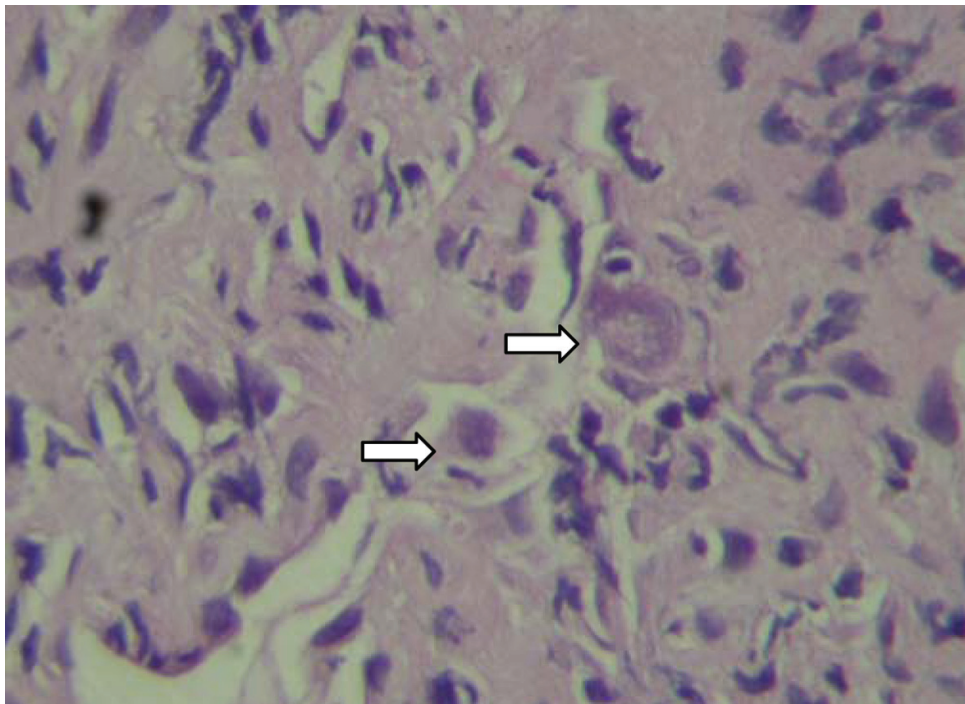


Figure 8.

### Discussion

Risk factors of CMV infection in patients without AIDS are recipients of solid organ and bone marrow transplants and those who receive immunosuppressive medications. CMV infection can involve GI tract from the oropharynx to the anus. Majority of lesions occur in the large intestine and duodenum. It can present many symptoms including pain, ulceration, bleeding, diarrhea, and perforation<sup>(1)</sup>. Gastrointestinal ulceration is the most common presentation (70%) and gastrointestinal bleeding is the 2<sup>nd</sup> common presentation. Gastrointestinal ulceration occurs from ischemic process, which can be described by narrowing of capillary lumens by swollen endothelial cells after CMV infection<sup>(2)</sup>.

Endoscopic features for alimentary tract are varies; inflamed mucosa alone (15%), ulceration alone

(35%), inflammatory mucosa associated with ulcer (45%), submucosal tumor with ulcer (5%)<sup>(3)</sup>. The most common feature is multiple ulcers with at least one large ulcer<sup>(3)</sup>. The typical pathology of GI tract involvement by CMV in patients without AIDS is diffuse ulcerations and necrosis with scattered CMV inclusions.

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1. Buckner FS, Pomeroy C. Cytomegalovirus disease of the gastrointestinal tract in patients without AIDS. *Clin Infect Dis* 1993;17:644-56.
2. Cheung AN, Ng IO. Cytomegalovirus infection of the gastrointestinal tract in non-AIDS patients. *Am J Gastroenterol* 1993;88:11:1882-6.
3. Lin WR, Su MY, Hsu CM, Ho YP, Ngan KW, Chiu CT, Chen PC. Clinical and endoscopic features for alimentary tract cytomegalovirus disease: report of 20 cases with gastrointestinal cytomegalovirus disease. *Chang Gung Med J* 2005;28:476-84.



## CASE 4

A 53-year-old man with suicidal attempt, recently ingested a glass of household-bleaches containing hydrochloric acid. An EGD was done and shown in Figure 9-12.

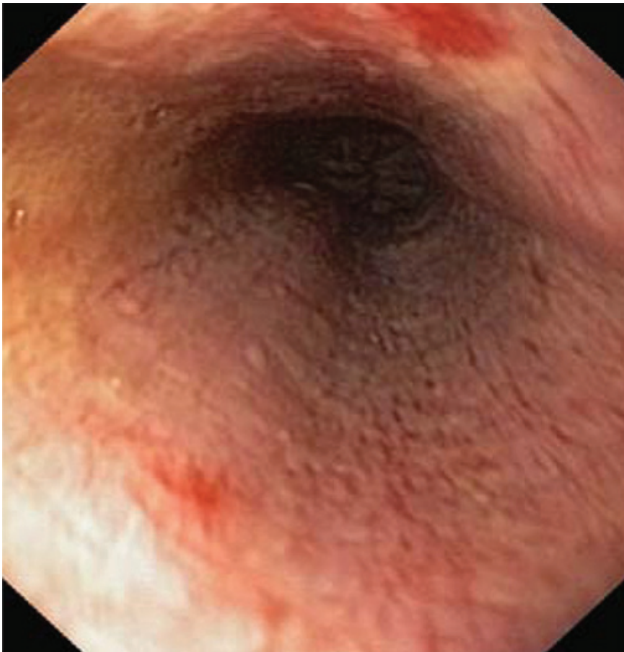


Figure 9.

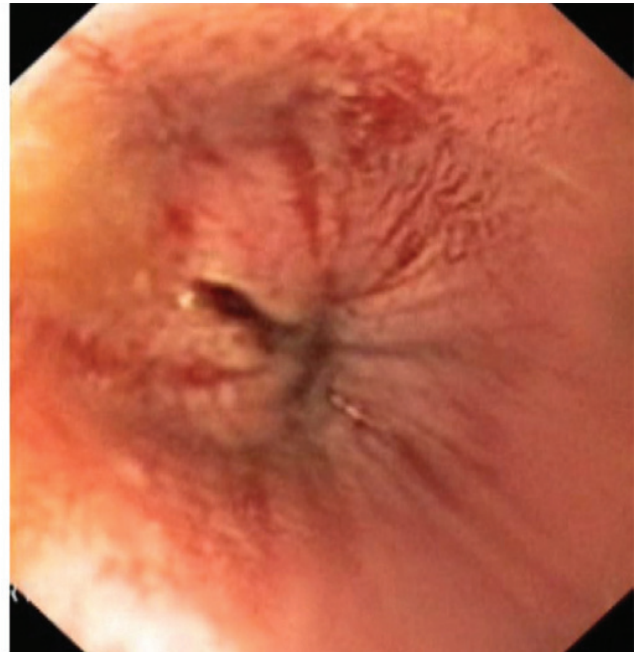


Figure 10.

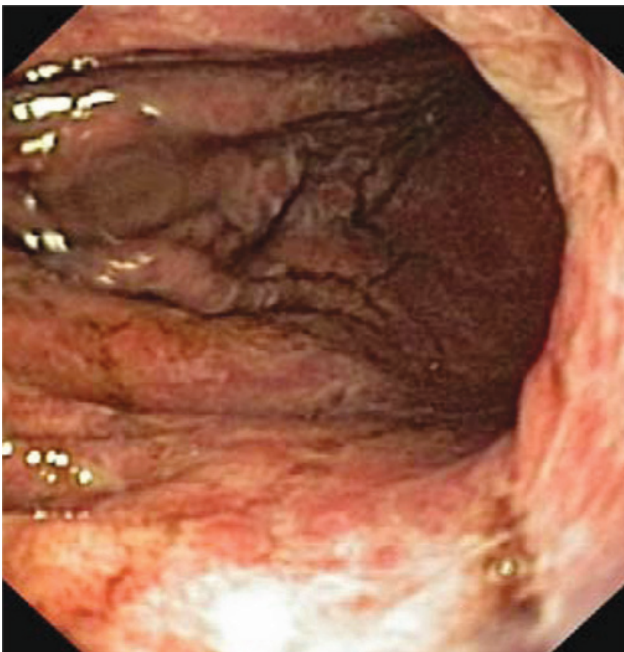


Figure 11.

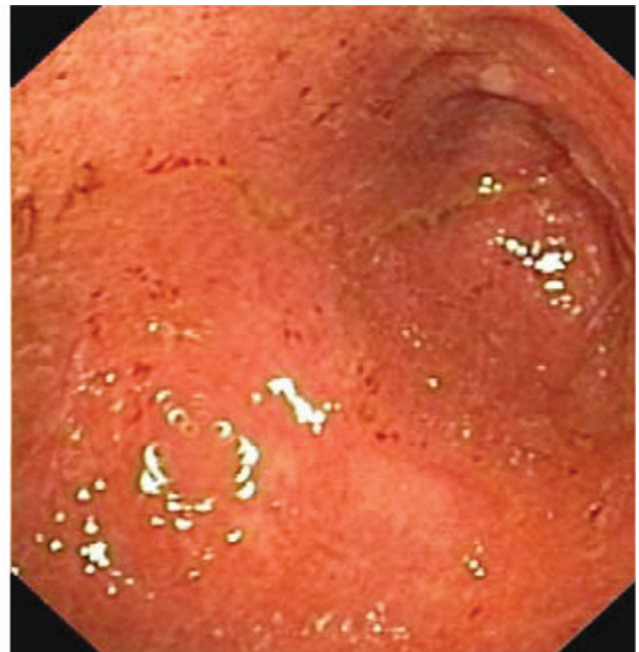


Figure 12.

Figure 9-10, endoscopic view of the esophagus, circumferential whitish exudates along the esophagus, few small shallow ulcers were seen.

Figure 11-12, endoscopic view of the stomach, diffuse shallow ulcers with exudates in the gastric body.

Erythematous and swollen mucosa were observed at the gastric antrum.

**Diagnosis**

Corrosive esophagitis grade 2a

## Discussion

Ingestion of caustic agents can cause esophageal injury. Flexible gastroscopy with gentle insufflations

**Table 1.** Grading of caustic esophageal injury<sup>(2)</sup>.

Grade	Endoscopic findings	Stricture development (%)
0	Normal esophagus	0
1	Mucosal edema and hyperemia	0
2a	Friability, hemorrhage, erosions, blisters, whitish membranes, exudates and superficial ulcerations	0
2b	Deep or circumferential ulceration, in addition to 2a lesions	71.4
3a	Small and scattered area of necrosis	100
3b	Extensive necrosis	100

is a safe procedure for grading the injuries. The preferred time for endoscopy is 12-24 hours after ingestion<sup>(1)</sup> and can be safe up to 96 hours<sup>(2)</sup>. Contraindications for gastroscopy are third degree burn of hypopharynx<sup>(1)</sup> and clinical or radiographic suspicion of esophageal perforation<sup>(2)</sup>. Endoscopy is usually avoided between 5-15 days of ingestion<sup>(2)</sup> since the tissue is soft, liquidified and easy to be perforated. Grading of esophageal injuries according to the degree of burns provides prognostic and therapeutic implications. With superficial injuries (grade 0-2a) patients can be discharged safely whereas with deeper injuries (grade 2b-3) patients requires an intensive care and good monitoring<sup>(1,2)</sup>.

## REFERENCES

1. Ramasamy K, Gumaste VV. Corrosive ingestion in adults. *J Clin Gastroenterol* 2003;37:119-24.
2. Zargar SA, Kochhar R, Mehta S, Mehta SK. The role of fiberoptic endoscopy in the management of corrosive ingestion and modified endoscopic classification of burns. *Gastrointest Endosc* 1991;37:165-9.