

Part 1

Esophagus

Case 1

Supaporn Opasanon, MD.

Thawatchai Akaraviputh, MD.

A 12-year-old boy, presented with dysphagia and odynophagia. He had a history of paper-clip ingestion for 2 hours before arrival. He was reasonably comfortable, having no stridor and oxygen saturations of 99%. His **Physical examination** was normal. Chest x-ray clearly demonstrated the radio opaque object positioned along the AP diameter of the upper esophagus. (Figure 1)

The paper-clip was removed using rat-toothed forceps with guidance from a flexible gastroscope (OLYMPUS Gastroscope GIF-Q180) (Figure 2-3) under general anesthesia. At the same day, he was discharged after the procedure.

Discussion

Ingestion of foreign bodies of the upper gastrointestinal (GI) tract is a common occurrence. Most of them pass through the GI tract spontaneously, but some of them (about 20%) need endoscopic or surgical removal¹. At present, many physicians recommend endoscopic techniques for both diagnosis and treatment. The highest success rates were seen using the polypectomy snare and rattooth forceps². There does not appear to be a standard of practice for removing foreign bodies because of the variety of shapes, sizes and locations of the foreign bodies. Ingested sharp-pointed objects have the highest rates of perforation (up to 35%) and those within the esophagus, stomach or duodenum should be removed endoscopically on an urgent basis.

References

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Figure 1: CXR showing the foreign body at upper esophagus.

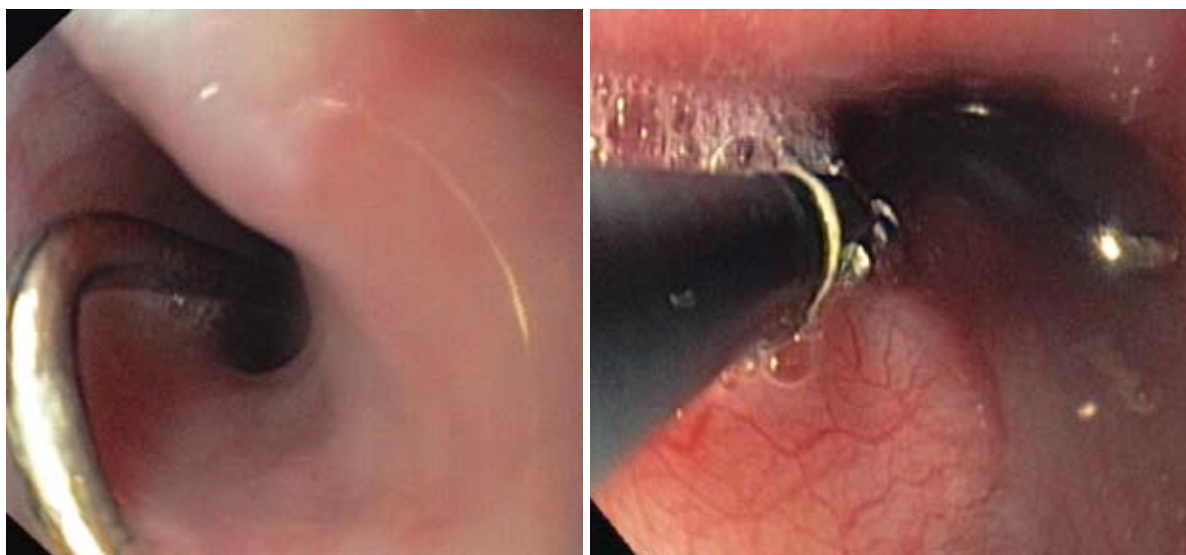


Figure 2: Endoscopic view showing the clip which successful removal with rat-toothed forceps.

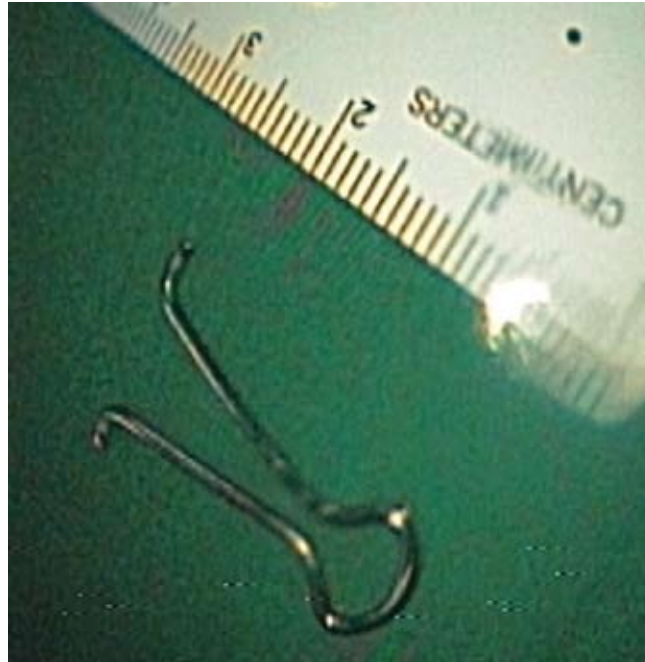
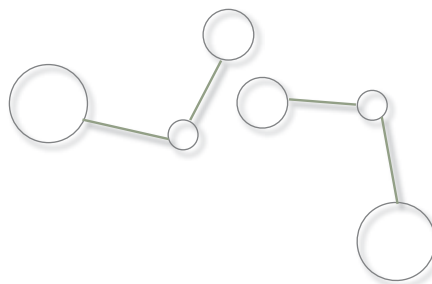


Figure 3: The paper-clip was measured after successful removal.



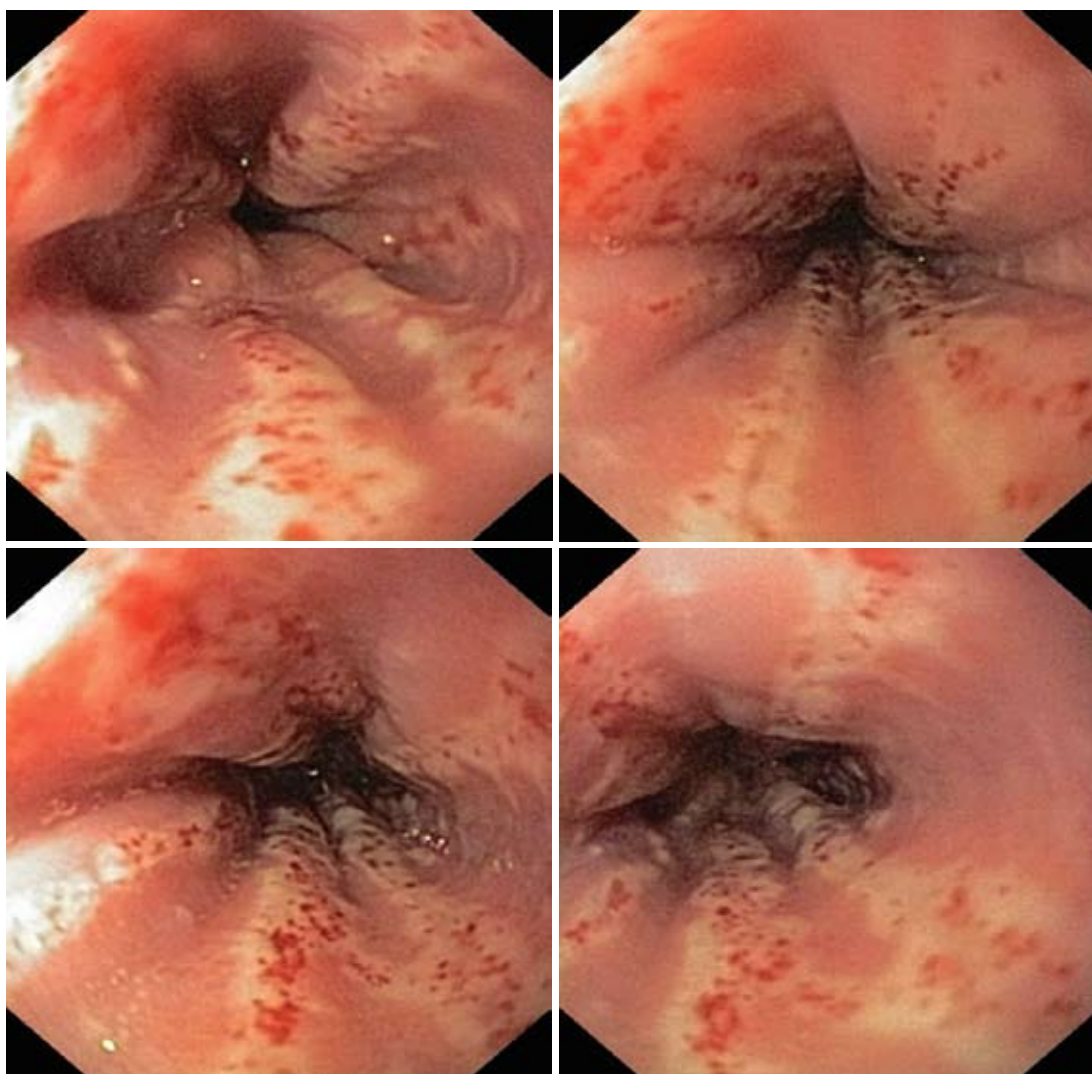
Case 2

Nopavut Geratikornsupuk, MD.

Suthep Gonlachanvit, MD.

A 55 years old female, known case of diabetes mellitus and hypertension, presented with hematemesis.

EGD was done and showed as figure 1-4



The EGD showed multiple linear erosion that is continuous between the tops 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 other cause 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 therapy¹. 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. This findings help to determine the most appropriate long-term therapy such as continuous potent acid suppression².

References

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Case 3

Supaporn Opasanon, MD.

Thawatchai Akaraviputh, MD.

A 40-year-old female was referred to Siriraj hospital complaining of discomfort and a sensation of something stuck in her throat which had begun several hours earlier, after taking her artificial denture. Physical examination was normal. Chest X-rays could not show the denture. An immediate gastroenterological evaluation, with flexible gastroscopy (OLYMPUS: GIF-Q180) was performed, under transintravenous anesthesia, in left lateral position. At 20 cm. from incisor, the artificial denture eroded into submucosal layer of esophagus was found. Using rat-toothed forceps withdrawn together with the scope, the foreign body was successfully removed within 3 minutes (Figure 1-2). The patient was discharged with uneventfully.



Figure 1: Esophagoscopy showing foreign body in upper esophagus which was removed with rat-toothed forceps.



Figure 2: The artificial denture was removed from the esophagus.

Discussion

Swallowing of FB occurs more commonly in children, especially between the age of 6 months and 3 years, and in specific adult risk groups, such as prisoners, alcoholics, edentulous adults and psychiatric patients^{1,2}. Structural or functional abnormalities of the esophagus represent the major risk factors³. This patient did not belong to any of these risk categories. The accidental ingestion of artificial dentures is most common in the elderly¹. The treatment of choice for FB depends on various parameters such as patient's age, clinical condition, the type, size, shape, site and also number of FBs⁴. Endoscopy is the preferred method for FB extraction with a reported success rate of 83%⁴. At present, flexible endoscopy, under general anaesthesia or conscious sedation, is considered to be safe and represent effective methods, in experienced hands.

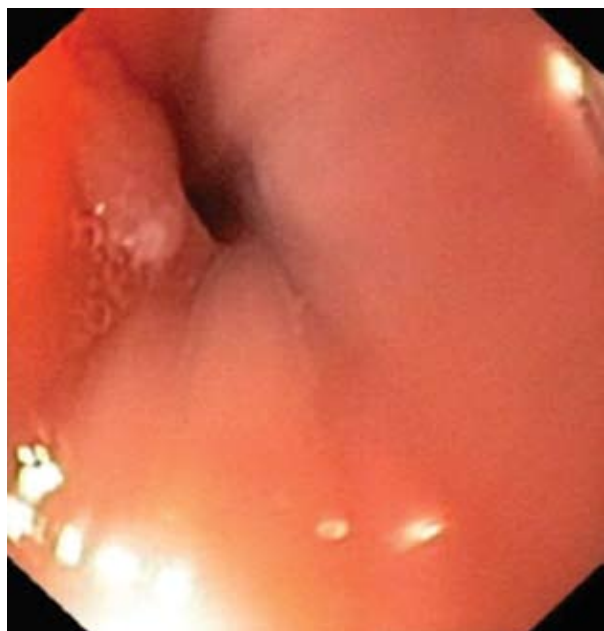
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Case 4

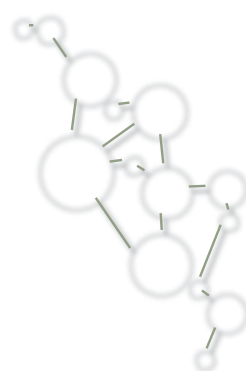
Nathavut Sirimontaporn, MD.

Rungsun Rerknimitr, MD.



A Thai 62 years old female, present with dysphagia for 1 month.

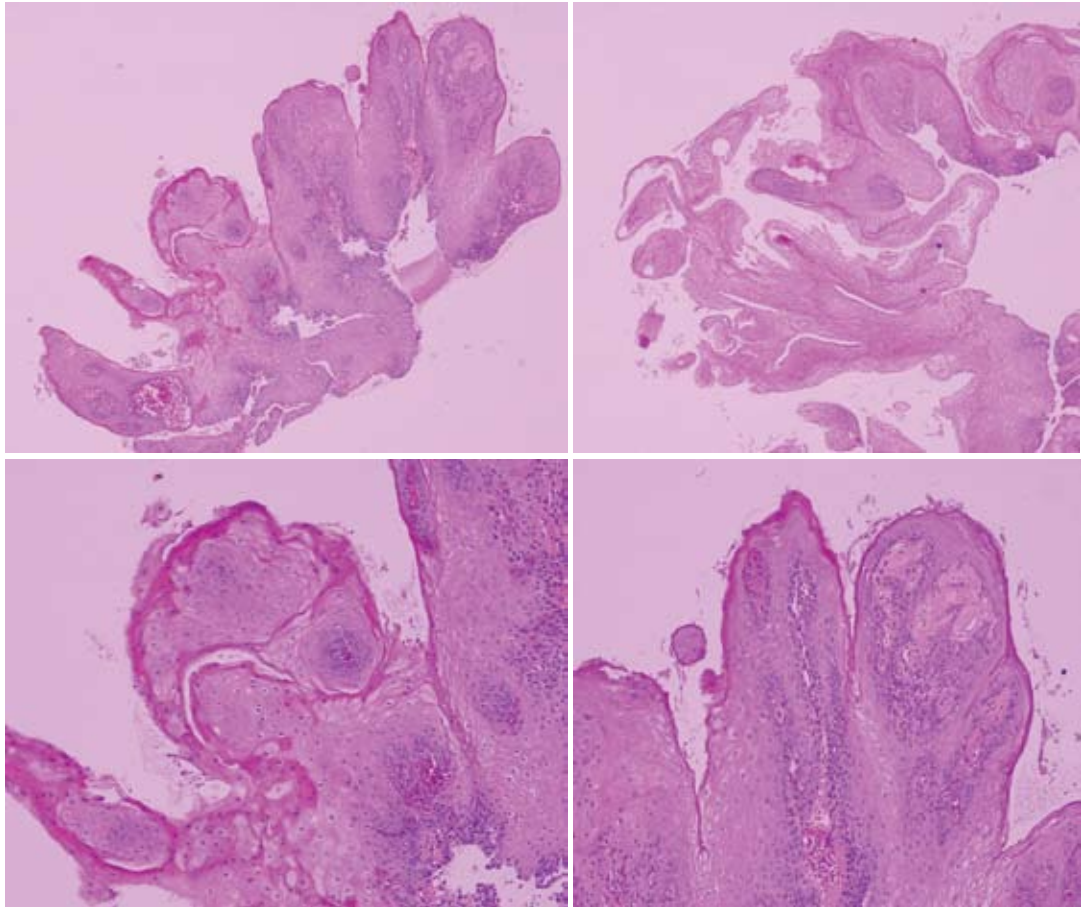
She has history of upper abdominal and burning chest discomfort for more than 6 months and it was relieved by taking antacid, she was previously healthy, Her appetite was normal until the present day.



Esophagogastroduodenoscopy was seen as pictures

EGD Esophagus: Verrucous surface pedunculated lesion 0.2 cm. at 17 cm. from incisor, no obstruction or esophagitis

Pathological findings was shown as pictures



Pathological report: Finger like projection lined by squamous epithelium

Diagnosis: Esophageal squamous papilloma

Discussion

Squamous papilloma of the esophagus is a rare benign esophageal tumor, usually asymptomatic and without characteristic symptoms, the upper GI endoscopy is usually performed because of associated peptic disease symptoms so most of them are incidentally found. Squamous papilloma of the esophagus generally appears as single round and elevated sessile formation, well delineated from the surrounding tissue and located in the distal esophagus. Some of the reported cases have documented multiple lesions and located in the upper esophagus.

Squamous papilloma of the esophagus are usually small in size (average 0.6 cm.), although they have been reported to be up to 2x5 cm¹. The papilloma is usually whitish or pinkish in color, with soft consistency and smooth or slightly rough surface and it can be endoscopically confused with glycogenic acanthosis or verrucous carcinoma of the esophagus².

Histological proves of squamous papilloma of the esophagus show finger like projection lining by increased number of squamous cells and un-inflamed fibrovascular core contain small blood vessels with normal orientation and differentiation of cells without sign of atypia.

Squamous papilloma of the esophagus may be successfully removed by using endoscopic means: usually forceps or diathermic snare, overtime, there is no demonstrable recurrence of the papillomas. The etiology of esophageal papilloma remains unclear and multifactorial. Chemical irritation has been demonstrated in animals³, however chronic irritation caused by reflux esophagitis might be the most appealing etiology in humans. Direct trauma has also been implicated as bougienage for benign stricture or placement of a self-expanding metal stent^{4,5}. Human papilloma virus is suggested to be in association with increased frequency as a possible etiopathogenetic factor and recently human papilloma virus has also been associated with non-squamous neoplasm⁶, and has been reported to be incorporated into the genome in certain carcinomas. Although the esophageal papilloma is considered benign lesion but the ambiguity regarding premalignancy make it advisable that all esophageal papilloma should be removed⁷.

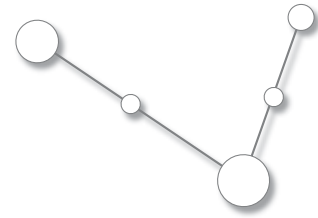
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Case 5

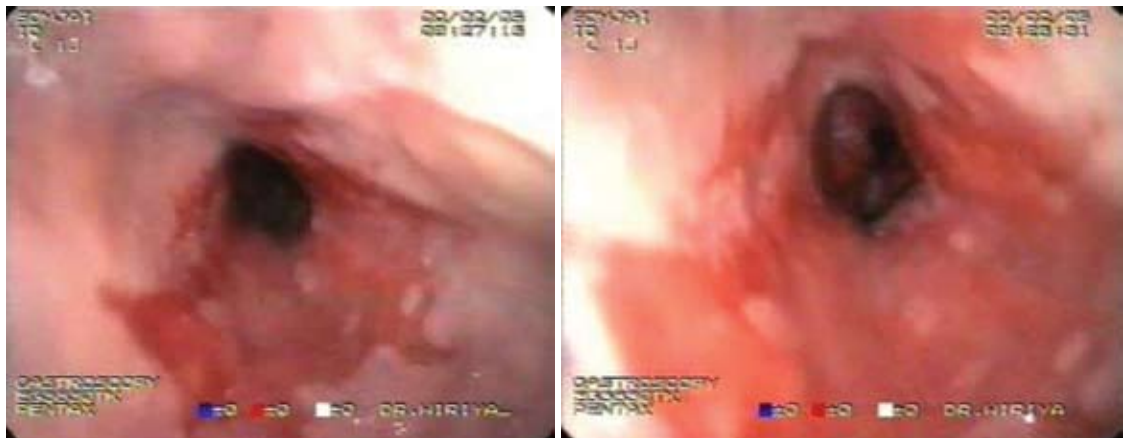
Nathavut Sirimontaporn, MD.

Suthep Gonlachanvit, MD.



A 59 years old man with obesity and diabetes was evaluated for his history of long standing reflux symptoms

Esophagogastroduodenoscopy was shown



EGD: 6 cm. of reddish, columnar epithelium extends above the gastroesophageal junction

Diagnosis: Barrett's esophagus

Discussion

Barrett's esophagus is the condition in which columnar epithelium replaces the squamous epithelium that normally lines the distal esophagus. The condition develops when gastroesophageal reflux disease damages the squamous esophageal mucosa and the injury heals through a metaplastic process in which columnar cells replace squamous ones. The abnormal columnar epithelium that characterized Barrett's esophagus is an incomplete form of intestinal metaplasia that predisposes patients to adenocarcinoma.

The diagnosis of Barrett's esophagus is based on endoscopic findings and confirmed by histologic examination. The junction (Z-line) of the glossy white esophageal squamous mucosa and reddish pink gastric columnar mucosa is normally found at tubular end of esophagus, in Barrett's esophagus, the distal esophagus is lined by columnar epithelium, extending upward for a varying distance.

Some controversy exists over the classification of Barrett's esophagus¹, Classic or "long segment" Barrett's esophagus requires at least 3 cm. of columnar-lined esophagus it's increase risk for developing adenocarcinoma. "Short segment" Barrett's esophagus refers to shorter lengths (<3 cm.) or tongues of columnar epithelium in the distal esophagus with intestinal metaplasia on biopsy, this entity is three to five times more common than the long segment variant, and its risk of cancer appear to be lower².

Patients with Barrett's esophagus should undergo regular endoscopic surveillance for curable neoplasia to decrease the risk of death from esophageal cancer³ small, retrospective studies have shown that endoscopic surveillance can detect curable neoplasms in patients with Barrett's esophagus and that the cancer identified are less advanced than those identified in patients with symptoms of cancer such as dysphagia and weight loss⁴ These results do not prove that surveillance is beneficial, however, early esophageal cancers can remain asymptomatic for years and invasive treatments such as esophagectomy are associated with morbidity and mortality.

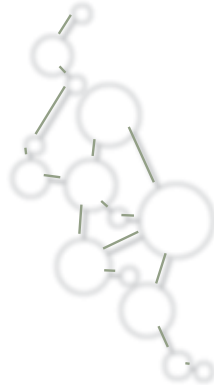
Management of Barrett's esophagus included PPI therapy and ablation of Barrett's epithelium in the setting of strict PPI, Photodynamic therapy, laser, multipolar electrocoagulation, argon plasma coagulation and endoscopic mucosal resection are used in this purposed.

Regular endoscopic surveillance for cancer is recommended in patients with Barrett's esophagus but the appropriate surveillance interval for patients with Barrett's esophagus has not been studied prospectively. However, current programme, proposed by American college of Gastroenterology⁵, are based on the grade of dysplasia.

American College of Gastroenterology Guidelines for Surveillance of Barrett's Esophagus		
Dysplasia Category	Recommended Documentation for Categorizing Dysplasia	Follow-up Endoscopy after Documentation
None	Two EGD with biopsy	Every 3 years
Low Grade	No worse than low grade dysplasia on repeat biopsy	Yearly until no dysplasia
High Grade	Repeat EGD with biopsy to exclude cancer, High grade dysplasia confirmed by expert pathologist	Every 3 months if unifocal Multifocal: Ablation, EMR, Esophagectomy

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Case 6

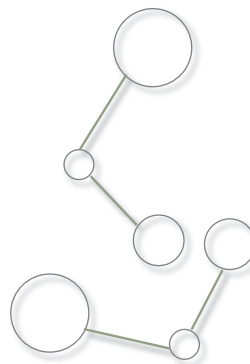
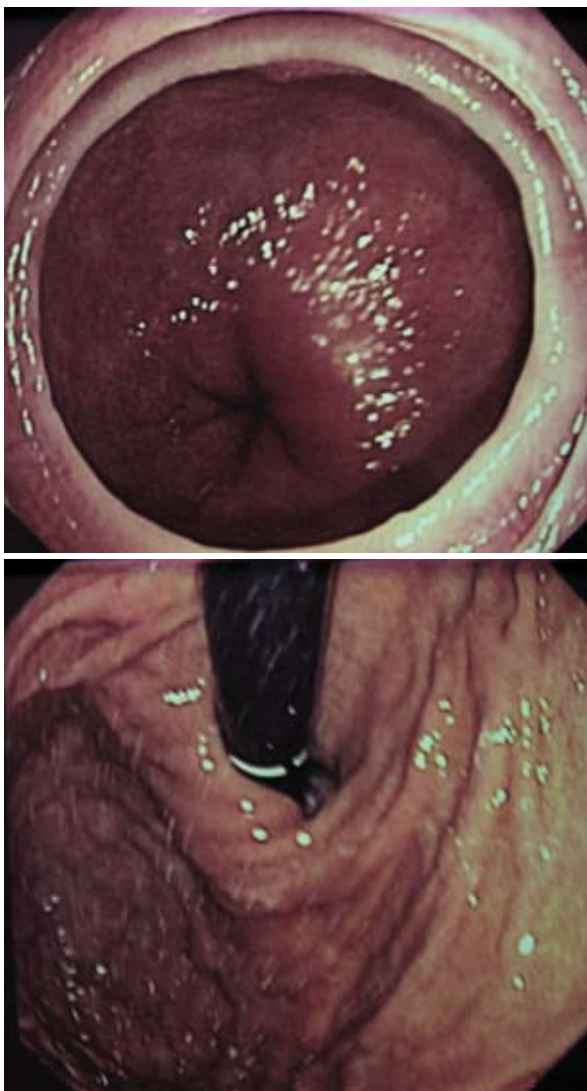
Nathavut Sirimontaporn, MD.

Suthep Gonlachanvit, MD.

A 84 years old woman present with dysphagia with intermittent episode

No significant weight loss, no odynophagia

Esophagogastroscopy was shown



Diagnosis: Schatzki Ring

Discussion

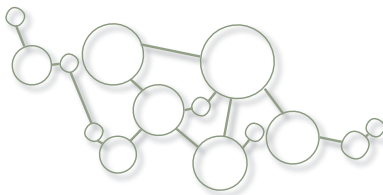
The distal esophagus contain two rings, The A and B (Schatzki) rings, the A (muscular) ring is located at the proximal border. It is broad symmetrical band of hypertrophied muscle that constricts the tubular lumen. The A ring is rare and occasionally associated with dysphagia for solids and liquids. Symptomatic A rings can be treated by passage of a 50Fr esophageal dilator or by injection of botulinum toxin¹.

The B ring, known as the mucosal or Schatzki ring, is very common, and found in 6% to 14% of subjects having routine upper GI studies². On barium study it is always found in association with a hiatal hernia and is recognized as a thin (2mm.) membrane that constricts the esophageal lumen. The Schatzki ring has squamous epithelium on its upper surface and columnar epithelium on its lower surface and so demarcates the squamocolumnar junction², the ring itself composed of only mucosa and submucosa, there is no muscularis propria.

Most B rings are asymptomatic and require no treatment and those producing dysphagia are effectively treated by passage of a single large (>50fr) esophageal dilator³.

References

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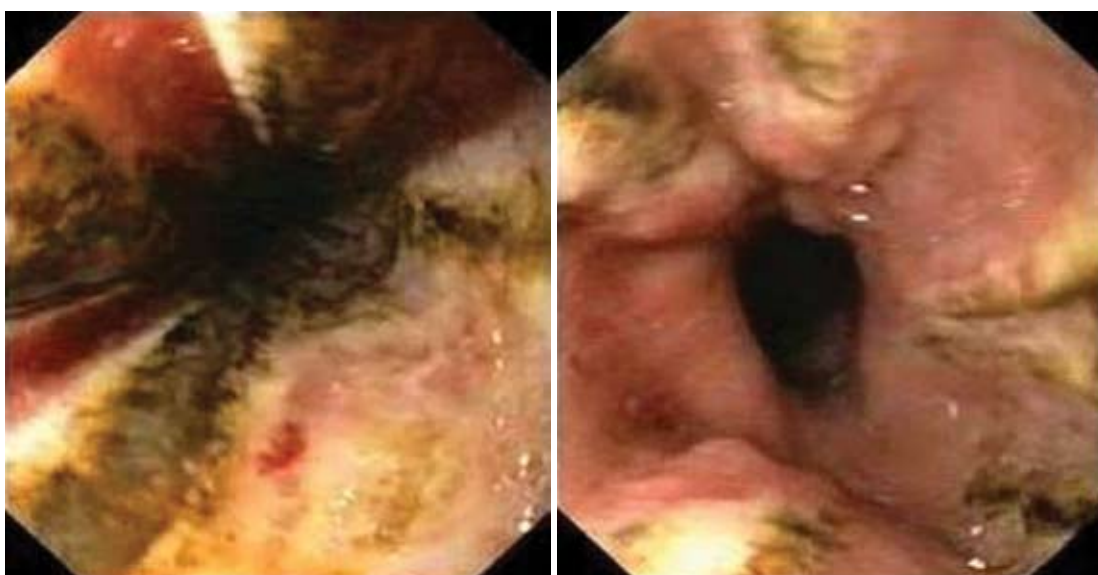
Case 7

Nopavut Geratikornsupuk, MD.

Suthep Gonlachanvit, MD.

A 64 year-old-male, bed ridden from old CVA and on NG tube feeding. He had history of coffee ground content and aspiration pneumonia.

EGD was done. Finding showed as figured.



The pictures showed circumferential erythema, erosions, fibrin deposits of esophageal mucosa with streaky pattern of spread, affecting the crests of mucosal folds. Involved the region from the distal esophagus to the Z-line. Reflux esophagitis was diagnosed.

Discussion

The most common symptoms of gastroesophageal reflux disease (GERD) are heartburn (or pyrosis), regurgitation, and dysphagia. In addition, a variety of extra-esophageal manifestations have been described including asthma, laryngitis, and chronic cough. For patients who require diagnostic evaluation, potentially useful tests are endoscopy and ambulatory pH monitoring, each of which provides distinct but related information¹.

The complications of gastroesophageal reflux disease (GERD) can be broadly divided into three categories: 1. Esophagitis, which can produce a variety of symptoms, including heartburn, regurgitation, and dysphagia. 2. Consequences of the reparative process of esophagitis-peptic stricture and Barrett's metaplasia. 3. Extra-esophageal manifestations of reflux, such as asthma, laryngitis, and cough.

The Los Angeles classification² grades esophagitis severity by the extent of mucosal abnormality, with complications recorded separately. In this grading scheme, a mucosal break refers to an area of slough or erythema, adjacent to more normal mucosa in the squamous epithelium with or without overlying exudate.

Grade A-One (or more) mucosal break no longer than 5mm. that does not extend between the tops of two mucosal folds.

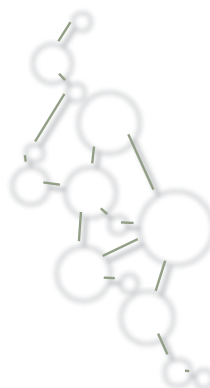
Grade B-One (or more) mucosal break more than 5mm. long that does not extend between the tops of two mucosal folds.

Grade C-One (or more) mucosal break that is continuous between the tops of two or more mucosal folds but which involves less than 75% of the circumference.

Grade D-One (or more) mucosal break which involves at least 75% of the esophageal circumference.

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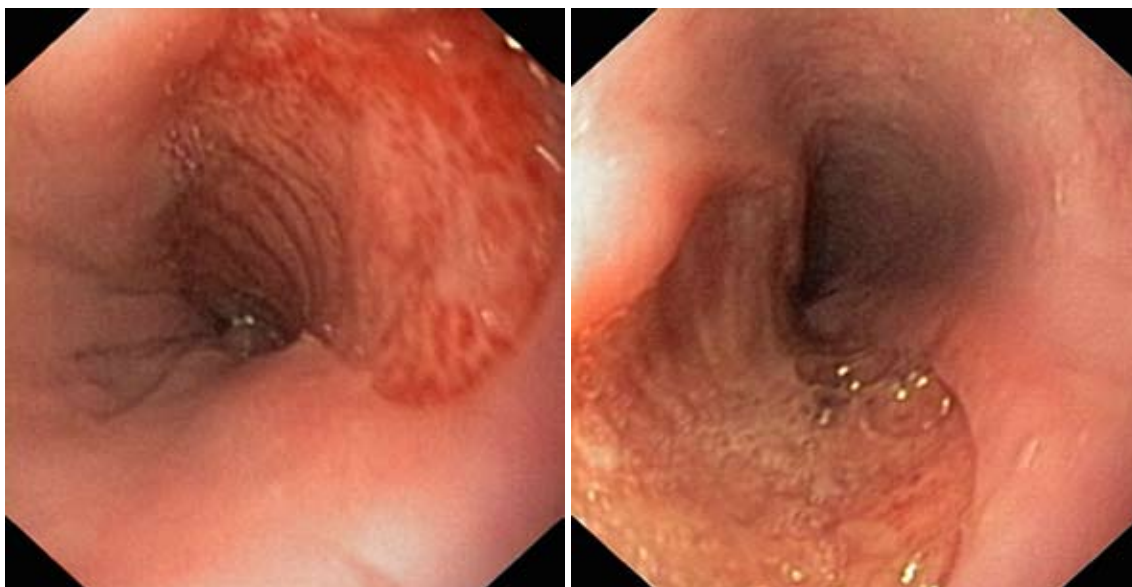
Case 8

Wiriaporn Ridditid, MD.

Rungsun Rerknimitr, MD.

A 45-year-old woman presented with odynophagia and dysphagia for a month.

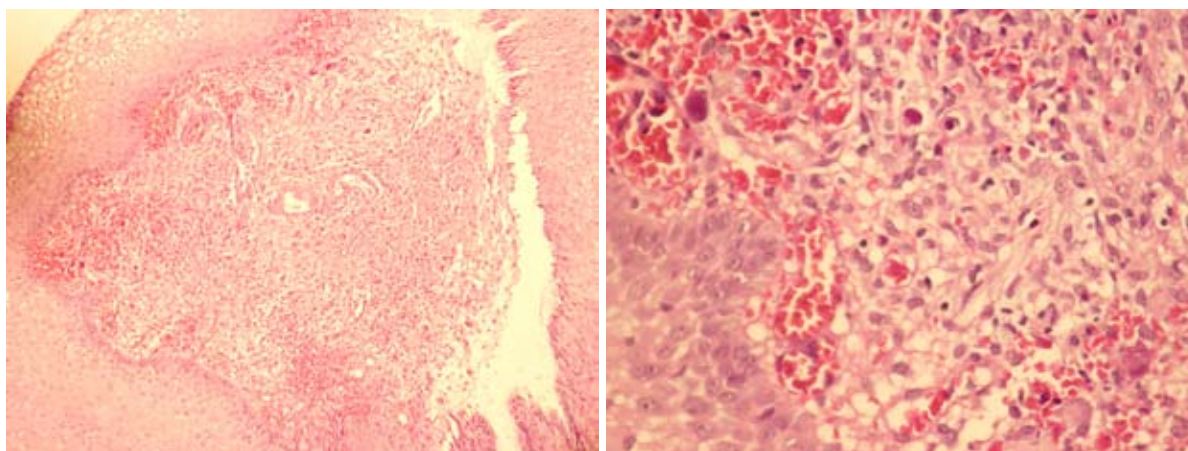
Esophagogastroduodenoscopy was showed as figure.



Esophagogastroduodenoscopy revealed two linear clean based esophageal ulcers size 2x5 cm. in diameter at 25 and 35 cm. from incisor.

Biopsy was done and pathological finding was showed some basophilic enlarged cells with eosinophilic inclusion infiltrate in the stroma as figure.

The diagnosis is cytomegalovirus esophagitis.



Case 9

Sukprasert Jutaghokiat, MD.

Rungsun Rerknimitr, MD.

A 32 years old male patient, presented with odynophagia 2 weeks.

Esophagogastroduodenoscopy was done and shown as figure.



Endoscopic findings: 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. Biopsy of ulcer to show 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.

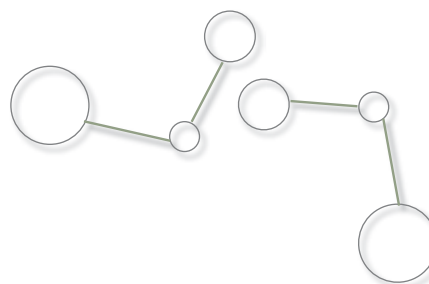
Herpes simplex esophagitis has characteristic endoscopic appearances. In the early stage, vesicles are seen, which then slough to form discrete, circumscribed ulcers with raised edges. These lesions have punched-out or volcano-like appearances¹. Cobblestoning can be seen due to clustering of these lesions. Exudates are present in a majority of cases^{1,2}.

Mucosal necrosis is seen in the late stage³. 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 culture⁴. 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

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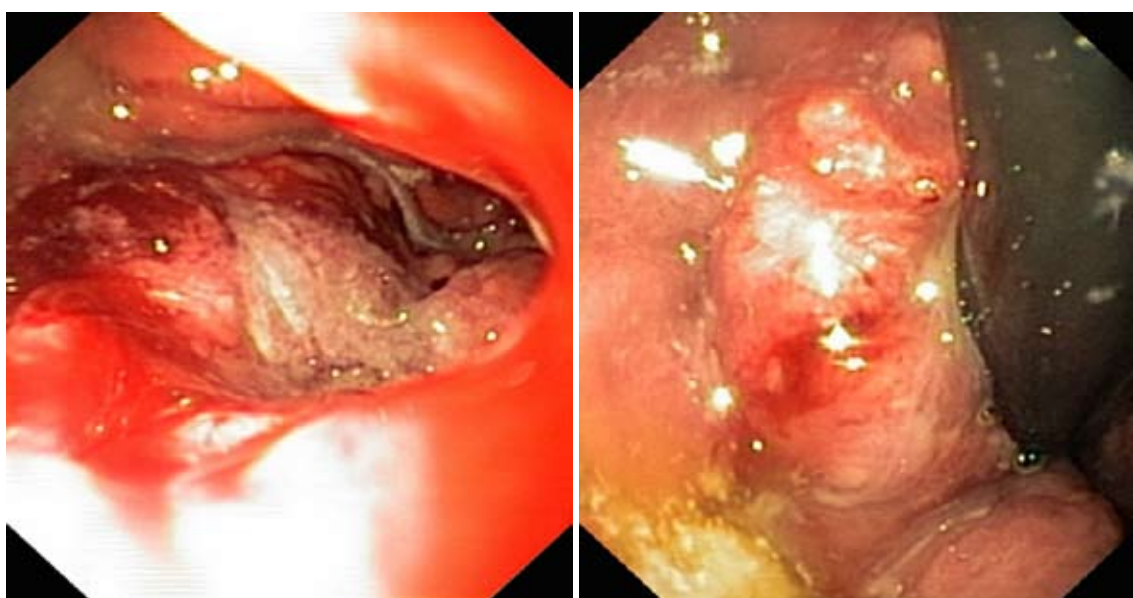
Case 10

Nopavut Geratikornsupuk, MD.

Sombat Treeprasertsuk, MD.

A 71 year-old-female who present with difficulty in swallowing for 3 months. Her symptom of dysphagia started with both liquids and solid diet without any chest pain. She reported regurgitation of undigested food, without nausea or vomiting. She lost of 3 kg. BW. within 3 months.

EGD was performed and showed as pictures.



A : at esophagogastric junction

B : at cardia, retroflex view

Gastroscopic findings showed verrucous surface mass with ulceration at EGJ extended to cardia (picture A). Picture B showed circumferential mass, verrucous surface with friable mucosa at cardia.

Discussion

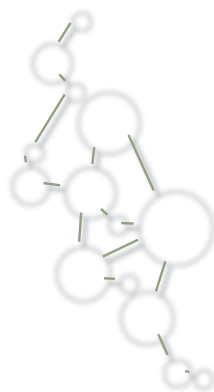
Dysphagia for solids (91%) and liquids (85%) is the primary clinical feature of esophageal cancer and other entity such as achalasia. Patients with achalasia are also at substantially increased risk for developing squamous cell type of esophageal cancer. A population-based study in Sweden found that the risk of esophageal cancer was extremely high in the first year after diagnosis of achalasia due to tumor producing distal obstruction and simulating achalasia. For long-term follow-up condition, the risk of esophageal cancer was increased to 16-fold compared with population controls¹⁻².

Endoscopic evaluation is recommended for most patients with dysphagia primarily to exclude malignancies at the esophagogastric junction (EGJ) which can mimic primary achalasia clinically (so called “pseudoachalasia”). Certain features increase the likelihood that the patient has pseudoachalasia due to malignancy are the following ; duration of symptoms less than six months, presentation after age 60, excessive weight loss in relation to the duration of symptoms and difficult passage of the endoscope through the EGJ³.

In one study esophageal manometric characteristics were evaluated for 17 of 21 consecutive patients with cancer of the gastric cardia. Pseudoachalasia was diagnosed in 3 cases, all with 50% or greater circumferential involvement of the EGJ. The first manometric indication of evolving pseudoachalasia was impaired lower esophageal sphincter relaxation, loss of peristaltic function was a secondary consequence. These findings suggest that the primary mechanism of pseudoachalasia with gastric cardia cancer is malignant stenosis of the EGJ⁴.

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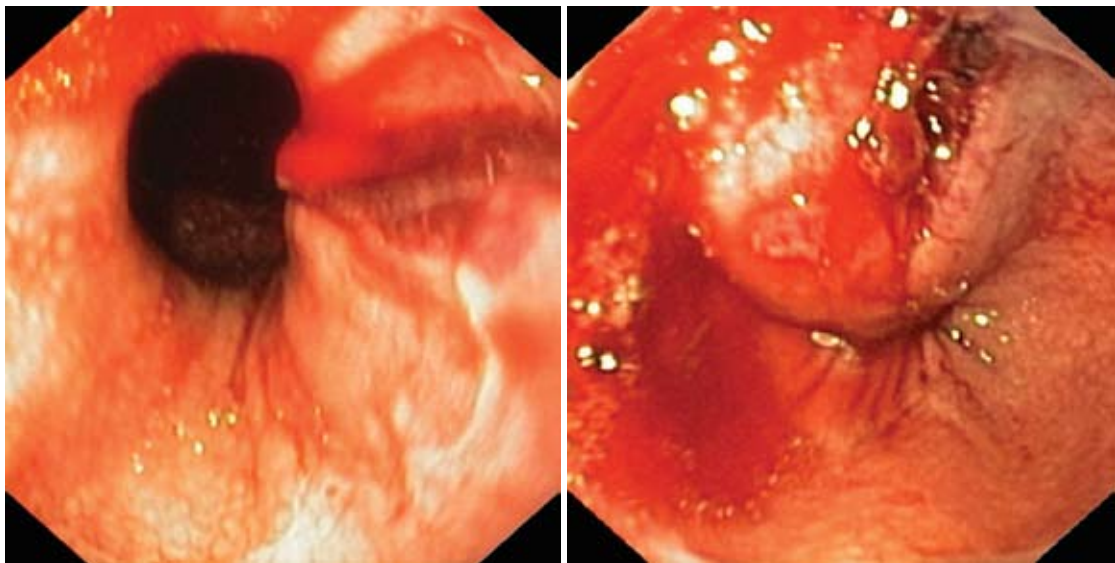
Case 11

Boonlert Imraporn, MD.

Sombat Treeprasertsuk, MD.

A 30 year-old man presented with severe vomiting and hematemesis for one day after overnight heavy alcohol drinking. His vital sign was stable. He had no sign of chronic liver stigmata.

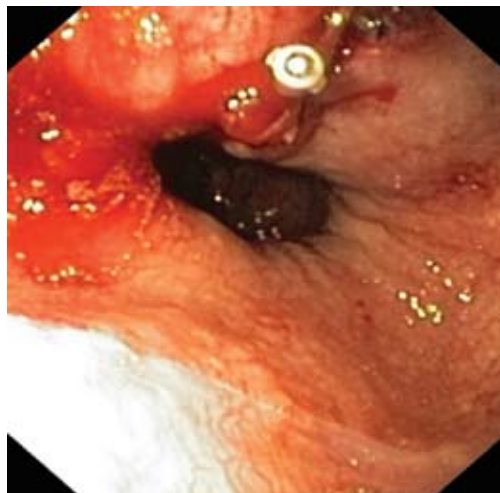
EGD was done and shown as pictures.



A

B

EGD findings showed single linear mucosal laceration, 1 cm in length with active bleeding (picture A-B). The final diagnosis is Mallory-Weiss syndrome. Endoscopic treatment was performed by using hemoclip and bleeding was stopped successfully as picture C.



C

Discussion

Mallory-Weiss syndrome (MWS) usually has spontaneous recovery without endoscopic intervention. However, in selected patients condition such as overt stigmata of recent bleeding such as visible vessels, unstable vital signs or severe co-morbid diseases, endoscopic interventions may be needed¹. Only one endoscopic intervention, not combined, is enough to stop bleeding. Epinephrine injection, band ligation and hemoclip are also effective²⁻⁴. The risk factors predicting the recurrent bleeding in MWS were shock at initial presentation (OR 3.71, 95% CI 1.07-14.90) and the evidence of active bleeding on endoscopic findings (OR 9.89, 95% CI 1.88-51.98)⁵.

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