

# Intramural Dissection of the Esophagus : Endoscopic Findings

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## Abstract

Intramural esophageal dissection is a rare but well described condition that is characterized by a laceration between the esophageal mucosa and submucosa but without perforation. It is usually associated with a rapid increase in intraesophageal pressure, especially in the presence of coagulation disorder. Intramural esophageal dissection revealed by an upper gastrointestinal endoscopy was reported in a uremic case with sudden onset of hematemesis and anterior chest discomfort during admission. An active ulcer with bleeding in the duodenal bulb and multiple small ulcerations in the antrum and corpus of the stomach were also noted and immediately treated by injection therapy for duodenal bleeding. The patient was discharged completely asymptomatic. Three months later, follow-up upper endoscopy showed a healed scar in the duodenal bulb. The esophagus and the stomach were normal. ( J Intern Med Taiwan 2006; 17: 302-305 )

**Key Words** : Intramural dissection, Esophagus, Upper gastrointestinal bleeding

## Introduction

Intramural esophageal dissection was first reported by Marks and Keet in 1968<sup>1</sup>. Intramural dissection of the esophagus is an esophageal injury that is an intermediate between transmural esophageal rupture (Boerhaave's syndrome) and esophageal mucosal tear (Mallory-Weiss syndrome). A Mallory-Weiss tear is a mucosal laceration at the esophago-gastric junction or gastric cardia usually caused by

retching or forceful vomiting, and there is a slight male predominance. Intramural esophageal dissection usually affects middle-aged or elder women and presents as acute chest pain, accompanied by dysphagia or hematemesis. It has been reported in association with coagulopathy<sup>2</sup>, variceal injection sclerotherapy<sup>3</sup>, endoscopic instrumentation<sup>4</sup> and foreign body ingestion<sup>5</sup>, as well as spontaneous occurrence<sup>6</sup>. Intramural dissection of the esophagus showed by an upper gastroduodenal endoscopy was reported in a

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uremic patient who also had multiple ulcers in the gastric antrum and corpus and an active ulcer with bleeding in the duodenal bulb presenting with hematemesis during admission.

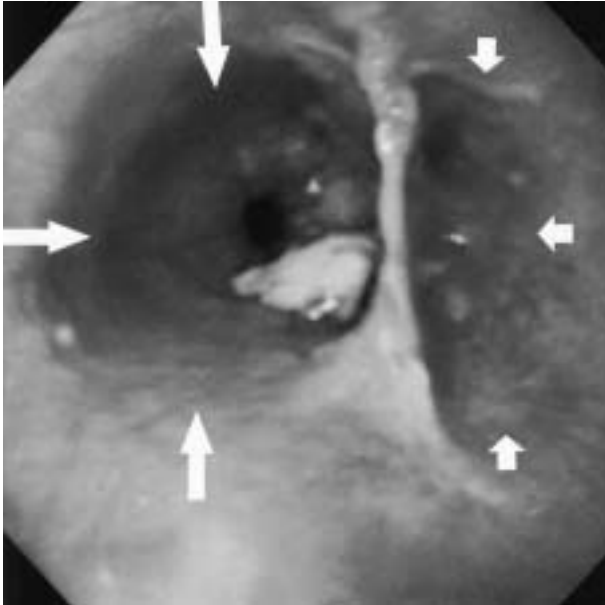


Fig.1. Endoscopic image showing two lumens including the true esophageal lumen (long arrows) and the false lumen (short arrows), separated by a mucosal bridge in distal portion of the esophagus. The white material between the mucosal bridge and esophagogastric junction is a mucosal slough due to intramural dissection.

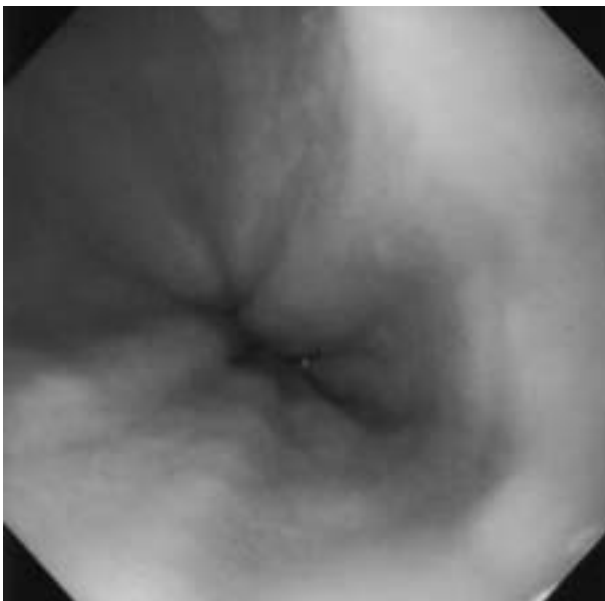


Fig.2. Endoscopic image 3 months after the previous upper gastrointestinal endoscopy showing normal esophagus

## Case Report

An 80-year-old female was admitted to our hospital because of progressive edema of both legs and exertional dyspnea associated with decreased urine output of three weeks' duration. The patient has a history of chronic renal failure and hypertension. There was also a history of allergy to contrast media. On physical examination, there was a systolic heart murmur over the apex and legs edema. Abnormal laboratory data were hemoglobin: 4.7 g/dl (normal: 12-16 g/dl), BUN: 121 mg/dl (12-26 mg/dl) and creatinine: 8.6 mg/dl (0.5-1.3 mg/dl). Hemodialysis was done after admission. On the 6th hospital day, sudden onset of hematemesis associated with anterior chest discomfort occurred. An upper gastrointestinal endoscopy was done showing an active ulcer with bleeding in the duodenal bulb and multiple small ulcers in the antrum and corpus of the stomach. Injection therapy for duodenal bleeding was immediately carried out. There were also two lumens including a true esophageal lumen and a false lumen, separated by a mucosal bridge in the distal portion of the esophagus, with a mucosal slough located between the mucosal bridge and esophagogastric junction (Fig. 1). *Helicobacter pylori* infection was positive. Esophagogram and computed tomographic scan of the chest were not performed because of an allergy history to contrast media. The patient was treated with intravenous pantoprazole 40 mg daily, nothing by mouth and intravenous fluid for 48 hours. Subsequently a proton pump inhibitor and antibiotics for *Helicobacter pylori* eradication were given. The patient was discharged well on the 26th hospital day. Three months later follow-up upper gastrointestinal endoscopy showed a healed scar in the duodenal bulb. The esophagus and the stomach were normal (Fig. 2).

## Discussion

Intramural esophageal dissection is a rare disorder

der characterized by a laceration between the mucosal and submucosal layers of the esophageal wall. The etiology of intramural dissection of the esophagus remains uncertain. Two hypotheses have been proposed for the pathogenesis of intramural dissection of the esophagus. The first theory postulates that intramural dissection is initiated by submucosal bleeding (or hematoma), which leads to submucosal dissection by the resulting hematoma along the esophageal wall<sup>7</sup>. The second theory is that the dissection may start as a small mucosal tear, followed by bleeding and further dissection<sup>8</sup>. Intramural esophageal dissection usually affects women in their seventh or eighth decade. The most common presenting symptoms are acute chest pain, hematemesis, odynophagia, dysphagia, and back pain.

The diagnosis of intramural dissection of the esophagus was made on the basis of the upper gastrointestinal series, upper gastrointestinal endoscopy, computed tomographic scan or magnetic resonance imaging. Barium esophagogram in cases of intramural esophageal dissection may demonstrate the mucosal tear or an extraluminal, submucosal collection of barium which is separated from the true lumen by a thin mucosal flap, producing the typical appearance of a "double-barrel" esophagus<sup>9</sup>. Computed tomography<sup>10</sup> or magnetic resonance imaging<sup>11</sup> of the thorax has been useful in diagnosing this injury and may facilitate early differential diagnosis of other mediastinal lesions. A computed tomographic scan of the chest may show an asymmetric esophageal wall with marked thickening, resulting in an eccentric lumen. At endoscopy, two apparent false and true lumens separated by a mucosal bridge may be visible. Marks and Keet have cautioned that endoscopy could be harmful in this condition<sup>1</sup>, but a gentle endoscopic examination in patients of intramural esophageal dissection has not been reported to cause esophageal perforation. We think that upper gastrointestinal endoscopy is reasonably used as an initial assessment of patients with upper gastrointestinal bleeding, as in our case.

The treatment of intramural esophageal dissection is conservative; nothing by mouth, intravenous fluid supply, and nutritional support are the mainstays of therapy. On follow-up endoscopy, most of intramural esophageal dissections have satisfactory healing of these lesions within two to three weeks after onset of symptoms<sup>10,12</sup>. Endoscopic therapies including incision of the septum between the true and false lumens<sup>13</sup>, balloon dilatation<sup>14</sup>, transection of the true esophageal wall<sup>14</sup>, and metal stent insertion<sup>15</sup>, have been used to treat intramural esophageal dissection with refractory to conservative treatment. Surgery should be reserved for cases that do not resolve with conservative management, or that have complications, such as esophageal perforation<sup>16</sup> or ongoing hemorrhage<sup>17</sup>.

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## 食道內壁剝離：內視鏡之發現

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### 摘 要

食道內壁剝離臨床上較為少見，主要是在食道黏膜層及黏膜下層之間產生剝離，但未造成穿孔。食道內壁剝離通常與快速增加食道內壓力有關，大多發生於血液凝固有問題者。我們報告一例80歲女性病患，有慢性腎衰竭及高血壓之病史，住院後開始接受洗腎，且在住院期間突然發生吐血及胸部不適之情形，經胃鏡檢查發現在胃幽門及體部有多處潰瘍病灶，在十二指腸球部有一活動性潰瘍合併出血，當時予以內視鏡注射止血。另外在食道下段發現有一處剝離之黏膜。之後經由靜脈注射氫離子幫浦阻斷劑、禁食以靜脈輸液成功治療此病患。三個月後，胃鏡追蹤檢查發現十二指腸球部有一處潰瘍結疤，而食道及胃則正常。