

'Downhill' Varices as a Surrogate Marker for Mediastinal or Lung Pathology: A Case Report

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Abstract

'Downhill' varices are dilated veins resulting from SVC obstruction whose blood flow is directed caudally towards azygous vein or inferior vena cava. Their etiology differs from that of the usual "uphill" varices secondary to portal hypertension. We report a case of 63 year old male that was suspected to have mediastinal / lung pathology based on finding of downhill varix on diagnostic esophagogastroduodenoscopy despite normal chest X-ray. Subsequently, the lung pathology was confirmed on contrast enhanced tomography of chest and on bronchoscopy. So findings of 'downhill' varices on endoscopy can suggest lung/mediastinal pathology which needs to be confirmed on subsequent testing.

Keywords: Esophagogastroduodenoscopy, Red color sign, Contrast Enhanced Computed Tomography, Endoscopic Band Ligation.

Introduction

'Downhill' esophageal varices are a rare condition, first reported in 1964 by Felson and Lessure.^[1] These varices have been reported in association with obstruction of superior vena cava (SVC) or its tributaries secondary to extrinsic compression or thrombosis. Very rarely the SVC obstruction has been reported in mediastinal fibrosis.^[2,3] We present a case of 63 year male that was suspected to have mediastinal / lung pathology based on finding of downhill varix on diagnostic esophagogastroduodenoscopy, despite normal chest X-ray. Subsequently the lung pathology was confirmed on contrast enhanced tomography of chest and on bronchoscopy.

Case Presentation

A 63-year-old man presented with history of dry cough of 2 month duration along with anorexia and upper abdominal discomfort. He was initially evaluated by a chest physician for dry cough. His chest examination was normal and there was no history of upper respiratory tract infection in the past. There was no history of dyspnea, wheezing, nocturnal cough, chest pain, postnasal drip, heartburn, and palpitation. His initial laboratory tests revealed hemoglobin of 13.6 grams/dl with normal platelet and leucocyte count. His renal and liver chemistries were within normal limits. His chest X-ray was normal [Fig 1a]. He denied the use of tobacco, alcohol and recreational drugs. Patent

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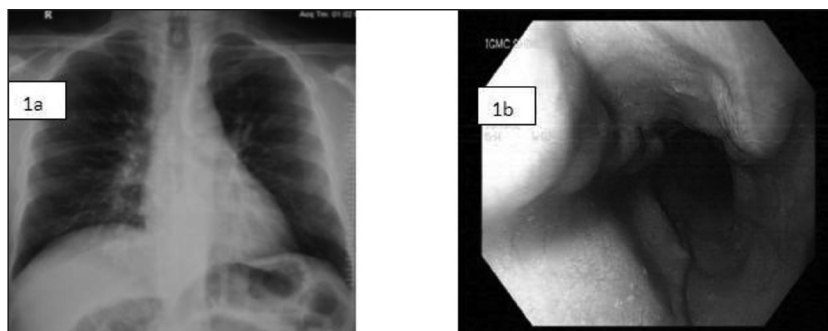


Fig 1a – Chest X-ray of the patient which revealed normal study.

Fig 1b – EGD – showing grade II esophageal varices in upper and middle esophagus

was referred in our gastroenterology clinic for evaluation of upper abdominal discomfort. His general physical and abdominal examination was normal. In view of dyspepsia with anorexia with old age, patient was planned for esophagogastroduodenoscopy (EGD). His EGD revealed three columns of grade II esophageal varices in the upper and middle esophagus [Fig 1b] without any evidence of active bleed, while stomach and duodenal mucosa were normal without any evidence of portal hypertensive gastropathy or duodenopathy.

In view of finding of esophageal varices, contrast enhanced computed tomography (CECT) of abdomen was performed to rule out possibility of chronic liver disease or chronic pancreatitis with splenic vein thrombosis. CECT – Abdomen revealed normal study of liver, pancreas, portal and splenic veins. Subsequently, the CECT-Chest was performed, keeping in view the possibility of ‘downhill’ varices, to exclude the possible lung / mediastinal pathology. CECT – Chest [Fig 2a and 2b] revealed growth right lower lobe with extension into mediastinum with mediastinal lymphadenopathy causing superior vena cava compression.

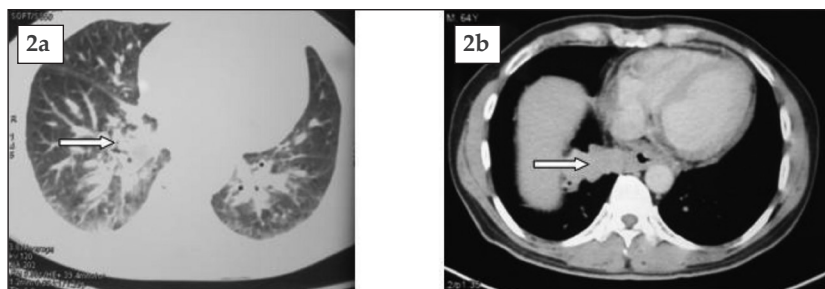


Fig 2a – CECT – lung window arrow showing surrounding consolidation with multiple intralobular septal thickening and nodules suggestive of lymphangitic spread

Fig 2b – CECT – mediastinal window arrow showing lobulated soft tissue density mass in the medial basal segment of right lower lobe with loss of fat planes with esophagus

Flexible fiberoptic bronchoscopy of the patient revealed fleshy growth in right lower lobe bronchus and biopsy was taken. Histopathological examination of biopsy specimen revealed adenocarcinoma. Patient referred to oncology department for further management.

Discussion

‘Downhill’ varices were first described by Felson and Lessure in 1964.^[1] They are dilated veins resulting from SVC obstruction whose blood flow is directed caudally towards azygous vein^[4] or inferior vena cava (IVC). They are either located in the upper esophagus or may involve the entire esophagus depending on the level of obstruction above or below azygous venous system, respectively.^[5] If lesion is proximal to azygous vein, then drainage occur through mediastinal collaterals to patent azygous system below the level of obstruction. This downhill venous flow through proximal esophageal vessels results in varices formation, limited to the upper portion of the esophagus. If obstruction is distal to azygous vein, then azygous system is unable to bypass the lesion. The resulting venous drainage via the esophageal plexus causes varices formation along the entire length of the esophagus.

There is a long list of etiologies of downhill varices,^[6] described in the literature including central venous catheterization, mediastinal fibrosis, primary and metastatic mediastinal tumors, mediastinal lymphadenopathy secondary to head and neck cancers, substernal goiters and thyroid masses, thyroid carcinoma, lung cancer, thymoma, systemic venulitis, Behcet’s disease, Castleman’s disease, and as a late complication after correction of congenital heart defect. Clinical presentation of ‘Downhill’ esophageal varices is dominated by clinical symptoms of superior vena cava obstruction.^[7]

Accidentally discovered ‘Downhill’ esophageal varices and upper gastrointestinal bleeding may be the first presentation.^[8] ‘Downhill’ varices represent only 0.1% of all esophageal variceal bleeding.^[9] Lower risk of bleeding may be due to lack of coagulopathy and submucosal and higher location of ‘Downhill’ varices in the esophagus, away from erosive gastroesophageal reflux.^[10]

There are no definitive recommenda-

tions on how to screen and manage 'downhill' varices. Treatment plan needs to be individualized. Primary treatment of 'downhill' esophageal varices is directed toward the underlying etiology.^[10]

Sclerotherapy was complicated by spinal cord infarction in some cases, caused by flow of sclerosant from the azygous to spinal veins when injected at the level of the middle and upper esophagus.^[6]

Variceal band ligation is effective for controlling bleeding but site of banding is not clearly defined. The risk of bleeding or perforation seems higher because of the weakness of the proximal esophageal posterior wall and overall lack of serosa. The use of a Sengstaken-Blakemore tube can be lifesaving in case of uncontrolled bleeding.^[6]

This case highlights the fact that presence of 'downhill' varices represent the mediastinal / lung pathology despite normal chest X – ray, and emphasizes the need for urgent evaluation of mediastinal and/or lung pathology by more sophisticated investigations.

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