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Case Report

Hematemesis melena in a young male patient with suspected of esophageal cancer: a rare case report

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A B S T R A C T

Background: Esophageal cancer (EC) in Indonesia is a rare case. Generally, EC cases occur in people over 50 years of age. In younger patients, it is a rare condition and is usually associated with a poor prognosis. Early-stage EC is generally asymptomatic, so it is often diagnosed late. The most common symptom is dysphagia. Upper gastrointestinal bleeding (UGIB) symptoms in EC are less common and related to emergencies. This study aims to provide an overview of the symptoms and diagnostic approach of EC in young patients.

Case presentation: A 19-year-old male patient presented to the emergency department with complaints of black stools and hematemesis. The patient also experienced a weight loss of 8 kg over the past three months. Previously, the patient frequently complained of epigastric pain and heartburn but had never sought medical treatment. Initial laboratory tests revealed severe anemia. An abdominal ultrasound showed multiple nodules in the liver, raising suspicion of metastasis, and endoscopic findings revealed a mass in the distal third of the esophagus.

Conclusions: EC should be considered in young patients presenting with warning signs such as UGIB, progressive weight loss, dysphagia, and anemia. A comprehensive history-taking, physical examination and prompt EGD are essential for diagnosing EC.

INTRODUCTION

Upper gastrointestinal bleeding (UGIB), such as hematemesis and melena, is a symptom that often leads patients to the emergency department. Various possible causes of UGIB exist, but malignancy in the gastrointestinal tract is a less commonly found cause.[1] Esophageal cancer (EC) is a common type of gastrointestinal tract (GIT) cancer, following colorectal and gastric cancer.[2] It primarily consists of two main types: adenocarcinoma and squamous cell carcinoma (accounting for over 90% of cases)[3] In 2022, WHO reported 511,054 new cases of EC worldwide, with more than half resulting in fatalities.[2] Asia is the continent with the highest incidence and mortality of EC, accounting for >70% of cases worldwide.[4] In Indonesia, EC cases are still quite rare, with EC ranked 25th out of all cancers with 1,382 new cases in 2022.[5] In Indonesia, EC cases are still relatively rare, with EC ranked 25th out of all cancers with 1,382 new cases in 2022.5 This cancer generally occurs in individuals over the age of 50, with only 3-10% of cases reported in those under the age of 45.[3] Previous research in America over 13.5 years showed that there were 109 EC patients under the age of 30 years.[6]

EC's growth begins from the esophageal wall's inner layer and progresses outward through other layers, such as the mucosa, submucosa, muscularis propria, and adventitia. Consequently, it often does not present with specific symptoms in its early stages, leading to delayed detection and a poor prognosis.[7] The 5-year survival rate for this cancer varies between 15-25%, depending on factors such as age, stage at diagnosis, and comorbidities.[3] With the increasing life expectancy and rising risk factors such as smoking, alcohol consumption, poor diet, and obesity, the incidence of EC is projected to double by 2030 and 2040.[7] Given these trends, clinicians must detect EC cases at an early stage and provide appropriate management. Case reports of EC at a young age, both in Indonesia and the world, are still minimal. Several previously reported cases

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were in developed countries with good health facilities, so diagnosis, early therapy and chemoradiation therapy can be carried out even though the outcome is not good enough.[8] We report a case of a young male patient with hematemesis and melena, suspected to be caused by esophageal malignancy. This study aims to provide an overview of the symptoms and diagnostic approach of EC in young patients.

CASE PRESENTATION

A 19-year-old male patient presented to the emergency department with complaints of black stools once, occurring 3 days before admission and hematemesis twice with volume around 200 – 300 cc, occurring 1 day before admission. The patient also reported fever, epigastric pain, and weakness. The patient's parents mentioned that he had experienced a weight loss of approximately 8 kg over the past 3 months. Cough, shortness of breath, and lumps in other body parts were denied. The patient has no previous medical history. However, it was noted that he often skips meals, sometimes eating only once a day, and frequently complains of epigastric pain and heartburn, although he has never sought medical treatment. There is no family history of cancer.

The patient is a smoker and consumes alcohol only on certain occasions. On physical examination, the patient appeared underweight (BMI = 16,7 kg/m2), weak but conscious (GCS E4V5M6), with a blood pressure of 105/57 mmHg, a pulse rate of 121 beats per minute, a temperature of 38.1°C, a respiratory rate of 20 breaths per minute, and oxygen saturation of 99% on a 2 L/min nasal cannula. The conjunctiva appeared anemic, minimal rhonchi were heard in the right lung, and the heart examination was within normal limits. Abdominal examination revealed normoactive bowel sounds, epigastrium tenderness, and no masses or hepatosplenomegaly.

Initial laboratory findings showed HGB 5.0 g/dL, HCT 16.3%, MCV 83 fL, MCH 27.3 pg, MCHC 32.9 g/L, WBC 26.27 x 10^3/µL, PLT 521 x 10^3/µL. Liver function: SGOT 15 U/L, SGPT 9 U/L. Kidney function: BUN 33 mg/dL, SC 0.9 mg/dL. Random blood glucose: 118 mg/dL. Electrolytes: Sodium 137 mmol/L, Potassium 4.4 mmol/L, Chlo-ride 96 mmol/L. HbSAg and Anti-HCV were negative. Total bilirubin 0.37, direct bilirubin 0.2, indirect bilirubin 0.17, alkaline phosphatase 43, protein 4, albumin 1.8, globulin 2.2, PT 11, INR 1.03. Chest radiography suggested pneumonia. Initially, the patient was diagnosed with severe anemia and hematemesis with melena due to erosive gastritis with differential diagnoses, including peptic ulcer disease. Although the patient had been administered PPI (esomeprazole drip), sucralfate, antibiotics, and hemostatic agents (tranexamic acid and vitamin K), recurrent hematemesis and melena persisted. The patient's clinical presentation can be seen in Figures 1 and 2.

The patient was admitted to the intensive care unit and received multiple transfusions to correct anemia. Once the patient's condition was relatively stable and hemoglobin levels approached 8 g/dL, an esophagogastro-duodenoscopy (EGD) was performed to identify the source of bleeding. The EGD results are shown in Figure 3, indicating the presence of a mass in the distal third of the esophagus, but a biopsy via EGD could not be performed. The abdominal ultrasound results are shown in Figure 4, indicating the presence of multiple nodules in the right liver lobe, suspicious for primary malignancy with a differential diagnosis of metastasis, minimal ascites, right pleural effusion, and normal findings in other abdominal organs. The patient was then diagnosed with hematemesis and melena, suspected to be due to esophageal carcinoma metastasized to the liver. The patient was subsequently referred to a central general hospital for further evaluation and treatment.

Figures 1 and 2. Clinical picture of a patient with NGT containing blood and melena

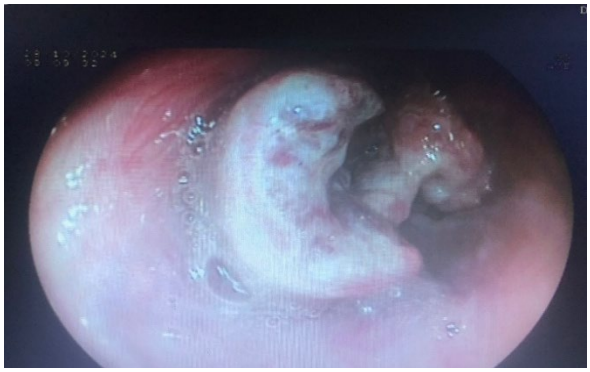

Figure 3. EGD results of a patient showing a mass in the distal third of the esophagus

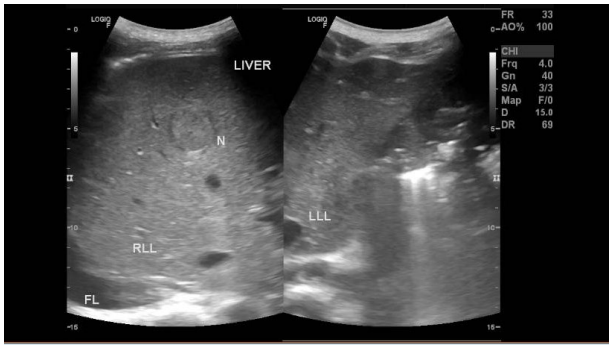

Figure 4. The results of an abdominal ultrasound show multiple nodules in the liver

DISCUSSION

Esophageal cancer (EC) is the eleventh most commonly diagnosed cancer and the seventh leading cause of cancer-related death worldwide.[2] he prevalence of EC has increased over the last four decades, with an estimated 17,650 cases reported in the US in 2019.[9] Nearly 75% of EC cases reported in 2022 were from Asia.[2,7] EC is generally found in individuals aged 50-70 years, with men having a 3-4 times higher risk compared to women.[7] However, it has been reported that the young population, <50 years old, presented with EC in the advanced stage, but the prevalence is scarce.

A previous study found that the incidence of EC at a young age was only 2.9% from 1975 to 2015.[10] Meanwhile, research by Donohoe et al. found that the prevalence of EC under 45 was only 3-10%.[3] This cancer has vague symptoms, often leading to detection at an advanced stage and poor prognosis. Risk factors that contribute to the development of EC include achalasia, smoking, alcohol consumption, and caustic esophageal injury.[6,11] In this case, the patient has risk factors for smoking and alcohol consumption.

Patients with suspected EC typically complain of dysphagia, characterized by a change in the type of food consumed (from solid to liquid) accompanied by weight loss. Other less common symptoms include cough, hoarseness, and enlargement of the cervical lymph nodes.[8,10] Some patients may be asymptomatic, and the condition may only be detected through endoscopic examination for another reason. Upper gastrointestinal bleeding (UGIB), such as hematemesis and melena, are symptoms in 5.7% of EC patients that cause them to come to the emergency department.[12-14] From the anamnesis, it was found that the patient came with complaints of hematemesis and melena.

Previously, the patient had never complained of pain when swallowing but often felt heartburn and a burning sensation. The patient also had no history of blood disorders or use of NSAIDs, antiplatelets, or anticoagulants.[1] However, the patient had irregular eating habits and a predisposition to malignancy as indicated by progressive weight loss, smoking and alcohol consumption. On physical examination, there were no specific signs; only the patient appeared underweight, with anemic conjunctiva and epigastric tenderness. There was no palpable mass, and there were no signs of cirrhosis (indicating liver failure or portal hypertension). This complaint is similar to a case report in the USA, namely, a 29-year-old man with a history of hematemesis and diagnosed with early-stage squamous cell cancer (cT1bN0M0).[12] Another study in the Philippines reported a case of stage IV esophageal adenocarcinoma in a 23-year-old male with symptoms of progressive dysphagia, severe weight loss, and anemia.[15]

From the anamnesis and physical examination, the patient was initially suspected of having hematemesis and melena due to erosive gastritis or peptic ulcer. This is the theory that peptic ulcer is the most common cause of UGIB. Rupture esophageal varices due to cirrhosis are the second most common cause. Other causes include esophagitis, typically caused by severe gastroesophageal reflux disease (GERD) and alcohol abuse. However, it is relatively rare due to arteriovenous malformations, Mallory-Weiss tears, esophageal or gastric or duodenal malignancy.[16,17] To eliminate these differential diagnoses, supporting examinations need to be performed. Laboratory examination results showed severe anemia. Liver function was normal, and there were no signs of hepatitis infection that caused liver cirrhosis. The examination was continued with an abdominal ultrasound, which showed multiple nodules in the liver that were suspected of being metastatic. Through this examination, the diagnosis began to point to malignancy.

Endoscopy is an important examination that must be performed to determine the source of bleeding. Endoscopy is recommended within ≤24 hours for high-risk patients, such as those with persistent hemodynamic instability after resuscitation, or very early (≤12 hours) if fresh blood is vomited or fresh blood aspirated from the nasogastric tube. However, early endoscopy may increase the risk of desaturation.[1] In this case, endoscopy could not be performed immediately due to limitations in facilities that did not allow for therapeutic endoscopy, so the procedure had to wait until hemodynamic stability was achieved and hemoglobin reached at least 8 g/dL.

From the results of the EGD examination, a mass was found in the distal third of the esophagus, which confirmed the diagnosis of EC. The location of this tumor is determined by epidemiology, which states that the most common location of EC is the distal third of the esophagus, followed by the middle third, and the upper third is the least common site.[18] During the EGD procedure, a biopsy sample failed to be taken, so a histopathological examination could not be carried out. Based on ESMO guidelines, 2022 there are other supporting examinations needed, such as a CT Scan of the thorax, abdomen, and pelvis, a PET-SCAN to determine tumor staging, a biopsy examination to determine tumor type, tumor biomarker examination (PD-L1 and HER2 status). These examinations cannot be performed due to limitations in our hospital and patient funding.[19,20] However, based on the EGD and abdominal ultrasound results, the diagnosis is reasonably indicative of EC.

Most EC cases are asymptomatic, leading to delayed advanced-stage diagnosis and detection. Globally, the prognosis of EC remains poor, with an overall five-year survival rate of less than 20%. Young patients with EC tend to have a poor prognosis and aggressive tumor characteristics and require adequate treatment in this population.[21] The survival rate for young patients compared to older patients after 5 years is 22.9% vs 29.6%, which is a clinical concern. [10,22,23] Detecting EC at an early stage will provide a better prognosis. Until now, various screening

methods have been developed to detect EC earlier. Several guidelines in various countries recommend endoscopic screening in high-risk groups such as male patients. Those aged≥40 years come from areas with high EC prevalence, family history of EC, smoking, heavy alcohol consumption, obesity, and chronic GERD. Lifestyle modification is one way to reduce the risk factors for EC.[24,25].

CONCLUSIONS AND RECOMMENDATION

EC cases in young adults are rare. In young patients presenting alarm signs such as hematemesis, melena, progressive weight loss, anemia, dysphagia, and risk factors like smoking, alcohol consumption, or chronic GERD, EC should be considered as a possible diagnosis. EGD is a crucial diagnostic procedure that should be performed promptly to help determine the direction of diagnosis. If a mass is detected on EGD imaging, a biopsy must be conducted to confirm the diagnosis. Additional diagnostic tests, such as abdominal ultrasound, CT scan, and PET scan, may be performed to assess the spread and severity of the disease.

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