Accidentally Case of Chilaiditi's Syndrome in COVID-19 Geriatric Patient

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ABSTRACT

Chilaiditi's syndrome is a rare disease with an incidence of 0.025-0.28% cases, where it shows colon interposition between diaphragm and right lobe of liver. Usually related to congenital malformation include the absence, weakness, or elongation of suspensory ligaments of transversal colon or falciform ligaments. The 83-year-old woman was admitted with 1-week history of fatigue, lacked the will to eat and drink. Nausea and vomiting were sometimes accompanied with abdominal pain. Patient often had difficulty in defecating even though she had been eating fruits, she often needed laxatives. Patient had a history of osteoarthritis and hypertension.

Physical examination appeared moderately-ill, with gasglow coma scale (GCS) 14 and blood pressure 150/90 mmHg. From abdomen epigastric tenderness (+). From thoracic X-ray found visible interposition of colon at right-upper quadrant of abdomen. Geriatric index fall risk assessment = 11 and mini mental state examination (MMSE) = 22. This patient was a geriatric patient with multiple diagnosis and frailty. Patient had a history of osteoarthritis contributes to patient's instability. Chronic constipation was also quite disturbing cause an interposition of colon. Patient had coincidence with COVID-19 with comorbidity and geriatric syndrome. Thorough care, close monitoring, and optimal management should be applied.

Keywords: *Chilaiditi's syndrome, geriatric syndrome, COVID-19*

ABSTRAK

Sindrom Chilaiditi merupakan suatu penyakit yang jarang ditemukan, dengan insiden 0,025-0,28% kasus, dimana terlihat gambaran interposisi dari kolon di antara diafragma dan hepar lobus kanan. Sindrom Chilaiditi biasanya berhubungan dengan suatu kelainan malformasi kongenital termasuk kelemahan, atau perpanjangan ligamen suspensori kolon transversal atau ligamentum falciformis. Seorang pasien perempuan usia 83 tahun datang dengan keluhan badan terasa letih sejak 1 minggu sebelum masuk rumah sakit, pasien tidak begitu mau makan dan minum. Mual dan muntah kadang dirasakan dengan disertai nyeri perut. Pasien mempunyai riwayat orteoarthritis dan hipertensi.

Pada pemeriksaan fisik didapatkan sakit sedang dengan kesadaran gasglow coma scale (GCS) 14 dan tekanan darah 150/90 mmHg. Dari pemeriksaan fisik abdomen didapatkan nyeri epigastrium (+). Pada rontgen thorax didapatkan gambaran interposisi kolon pada kuadran kanan atas. Pasien dengan indeks geriatri resiko jatuh

= 11 dan mini mental state examination (MMSE) = 22. Pasien ini merupakan pasien geriatri renta dengan diagnosis yang multipel. Pasien juga mempunyai riwayat osteoartritis yang berkontribusi terhadap instabilitas pada pasien. Konstipasi kronik merupakan faktor resiko terjadinya interposisi pada kolon. Pasien juga mempunyai koinsiden dengan COVID-19 dengan simdrom geriatri.

Kata kunci: *sindrom Chilaiditi, sindrom geriatri, COVID-19*

INTRODUCTION

Chilaiditi's syndrome is a rare disease with an incidence of 0.025-0.28% cases. It is often found incidentally on radiologic examination. Chilaiditi's syndrome is first introduced by Demetrius Chilaiditi in 1910, where it showed colon interposition between diaphragm and right lobe of liver. It is usually found with clinical symptoms of abdominal pain. In normal condition, the suspensory ligaments and fixation of colon inhibits the interposition of colon between liver and diaphragm.[1,2]

Chilaiditi's syndrome is usually related to congenital malformation. This anatomical variation include the absence, weakness, or elongation of suspensory ligaments of transversal colon or falciform ligaments, as well as congenital malposition. The cause of gastrointestinal disorder as well as hepatic or diaphragmatic disorder is also related to this condition.[3,4] Distortion can happen in certain condition such as chronic constipation, aerophagia (air distention in colon), cirrhosis, diaphragm paralysis, chronic lung disease (enlargement from lung base cavity), obesity, multiple pregnancy, and ascites. Other etiology that has been reported by Yin et al is colon interposition that is caused by colonoscopy intervention.[5,6]

In Chilaiditi's syndrome with severe manifestation, serious complications can occur, such as intestinal obstruction, perforation, gastrointestinal wall ischemia, and even acute respiratory failure. Conservative management is usually chosen in this patient, including sufficient rest, decompression of gastrointestinal tract, laxative administration, and supportive management. Nevertheless, surgical intervention may be needed to prevent complication in serious cases in which the conservative management does not give an improvement.[3,4]

CASE ILLUSTRATION

We report a case of an 83 years old female that admitted to the hospital with a 1-week history of fatigue prior to admission. Patient often had difficulty in defecating even though she had been eating fruits often. She often needed laxatives to be able to defecate and the defecation frequency could sometimes be up to 3 to 4 times a day. Patient lacked the will to eat and drink since 1 week ago. Nausea and vomiting were present every time she wanted to start eating and were sometimes accompanied with abdominal pain. Patient also looked sleepy but could be awakened if she was invited to talk. There were complaints about pain in both knees which had already been controlled in hospital with the diagnosis of bilateral osteoarthritis (OA) of knee grade II. Previously, patient was able to perform daily activities such as eating and taking shower by herself but now there has been decreased ability to do it because of the pain that she has to be helped by her family to perform daily activities.

Patient had a history of hypertension treated with candesartan 1x8 mg and was regularly controlled to hospital. There was no fever, cough, or difficulty breathing. There was no history of going out of town and she spent her day at home every day. There was no other significant history of present illness. Patient was routinely checked to hospital for hypertension and bilateral osteoarthritis of knee grade II.

Table 1. Physical examination

Variable	
General appearance	Appear moderately ill
Consciousness	Somnolent, glasgow coma scale (GCS) 14
Blood Pressure	150/90 mmHg
Body mass index (BMI)	20,8 (normoweight)
Eyes	No conjunctival pallor, no icteric sclera
Cardiovascular	Normal S1 and S2, no gallop or murmur
Pulmonary	Vesicular, no rhonchi, no wheezing
Abdomen	Epigastric tenderness (+), no hepatosplenomegaly

Table 2. Laboratory examination

Variable	
Hemoglobin	11,2 g/dL
Leukocyte	5.300 /mm^3
Thrombocyte	148.000 /mm^3
Hematocrite	34,9%
Lymphocyte	18%
Absolute lymphocyte count	954
Neutrophil lymphocyte ratio (NLR)	4,47
Random blood glucose	112 mg/dL
Ureum	27 mg/dL
Creatini	0,8 mg/dL
Natrium	115 mmol/L
Kalium	4,7 mmol/L
Chloride	84 mmol/L
SARS-Cov-2 PCR	Positive

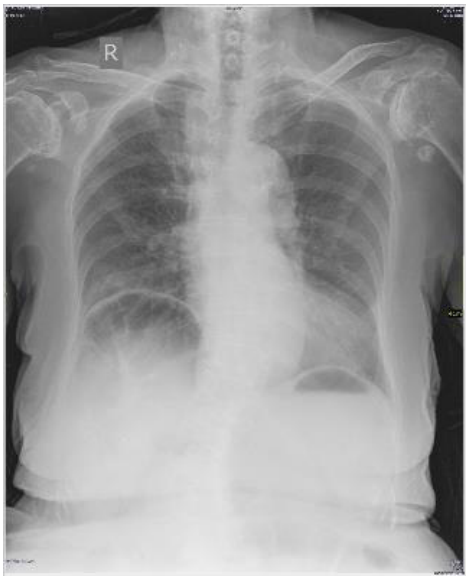

Figure 1. Visible interposition of colon at right upper quadrant of abdomen (Chilaiditi's syndrome)

Patient had geriatric assessment BARTHEL index for activities of daily living (ADL): before illness = 12 (mild dependency) and after illness = 5 (severe dependency). Fall risk assessment = 11 (high risk). Mini mental state examination (MMSE) = 22 that is global cognitive function is relatively good. The patient was diagnosed with hyponatremia low intake, hypertension stage I, bilateral OA of knee, Chilaiditi's syndrome, geriatric syndrome (frailty, inanisi, impaction, with instability).

DISCUSSION

The interposition of colon is often asymptomatic and is found incidentally in radiologic examination. Patient with Chilaiditi's syndrome mostly comes with gastrointestinal symptoms such as abdominal pain, nausea, vomiting, and constipation. This gastrointestinal symptoms is usually felt mild or even severe as in acute abdomen. In rare situation, there is other symptoms including chest pain and breathing disorder. Colon interposition is defined as the presence of air below right diaphragm in radiologic finding.[1,3]

In accordance with literature, this patient was indeed presented with unspecified gastrointestinal disorders which were nausea and vomiting that are sometimes accompanied with abdominal pain. This patient also had chronic constipation that can be a risk factor for colon interposition. In radiologic examination, air appearance was found between liver and diaphragm, which was consistent with Chilaiditi's syndrome.

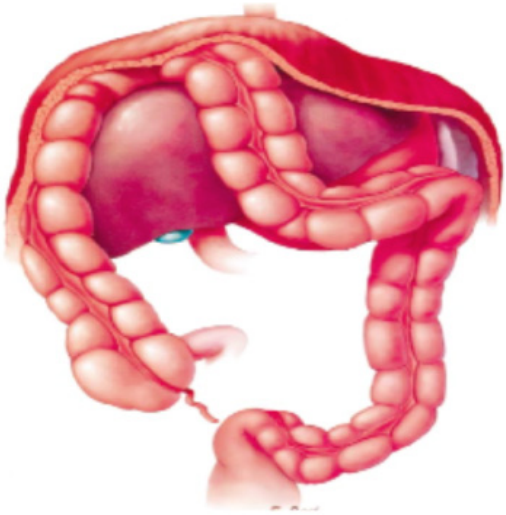

Figure 1. Colon interposition in Chilaiditi's Syndrome[4]

This patient was a geriatric patient with multiple diagnosis, so a thorough care had to be considered in deciding the management. This patient belonged to geriatric with frailty population. Patient had a history of bilateral osteoarthritis of knee with symptoms that were sometimes irritating. The knee pain contributed to patient's instability that placed the patient in high risk of falling, with a fall risk index as big as 11. Chronic constipation in this patient was also quite disturbing. Constipation, or impaction, itself is also included in geriatric syndrome. Chronic constipation was thought to be able to cause an interposition of colon. In this patient we can also found inanition, which was a decreased intake that leads the patient into severe hyponatremia.

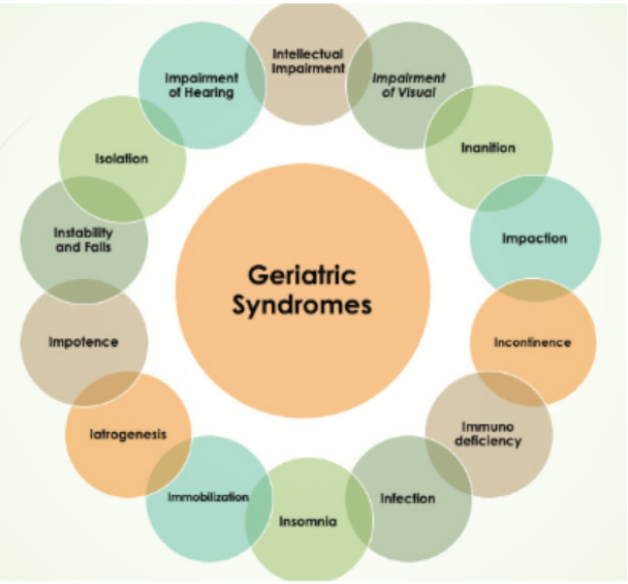

Figure 2. Geriatric syndromes

Our patient also suffered from Coronavirus disease 2019 (COVID-19) with comorbidity of hypertension. Research from Ejaz et al in 2020 showed that hypertension was the highest comorbidity found in patients with COVID-19 in China and Italia, in which it was also shown that uncontrolled blood pressure was related to high case fatality rate (CFR). In patients with hypertension, ACE-Inhibitor and angiotensin receptor blocker (ARBs) are often given as the drugs of choice. Usage in high doses can increase the expression of ACE-2 receptors that leads to increased susceptibility to SARS-CoV-2 infection. High expression of ACE-2 receptors in the lungs also increases the probability to develop severe lung injury and respiratory failure.[5,6] The patient was given favipiravir, candesartan 8 mg, zinc, vit C, lactulose, and education for patient and her family about risk of falling and to increase her intake to fulfill the nutrition needs. Patient was initially planned to move into isolation room. It was indeed a dilemma for physician to treat patients with comorbidity of hypertension and geriatric syndrome. Thorough care, close monitoring, and optimal management should be applied to such patient. Nevertheless, being in isolation room led patient to stress since patient felt alone because she was not allowed to meet her family member. In accordance with literature, 76% of geriatric patient can survive until fully healed.[9,10]

Table 3. Mortality rate of COVID-19 patients with comorbidities[7,8]

Disease	Country with mortality		
	China	Italy	USA
Hypertension	9.5	73.8	Not reported
Diabetes	7.4	35.5	58
COPD	7	13.7	4
CVD	7.3	42.5	9
Liver Disease	2.4	3.7	0.6
Obesity	13	8.5	55
Renal Disease	0.7	20.2	21
Maliganncy	2	5	9.5

COPD: chronic obstructive pulmonary disease, CVD: cardiovascular disease

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