

# Acute Aortic Thrombosis Complicated with Acute Abdomen in COVID-19 Patient

Andrej Nikolovski<sup>1\*</sup> and Shqipe Misimi<sup>2</sup>

<sup>1</sup>Department of Visceral Surgery, University Surgery Clinic, “Sv. Naum Ohridski”, Skopje, North Macedonia

<sup>2</sup>Medical Faculty, University “Sv. Kiril i Metodij”, Skopje, North Macedonia

\*Corresponding author: Nikolovski A, Department of Visceral Surgery, University Surgery Clinic “Sv. Naum Ohridski”, Skopje, North Macedonia, Tel: +38971231323; E-mail: [andrejnkolovski05@gmail.com](mailto:andrejnkolovski05@gmail.com)

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## Abstract

There are thousands reports of acute aortic thrombosis as complication of COVID-19 with reported mortality of 34%-62%. One of the acute arterial events in these patients is occlusive mesenteric ischemia. This condition is rare and only single cases are reported. We present a case of a 72-year-old female patient presented as acute abdomen. She was COVID-19 positive and was treated at home in the past 10 days by her family doctor. Prior to admission she had pO<sub>2</sub> of 80% with oxygen mask. A contrast enhanced computed tomography scan of the thorax and abdomen revealed bilateral pneumonia, aortic arch thrombosis and free thrombus in the abdominal aorta. After admission saturation dropped to 20% pO<sub>2</sub>, she was reanimated and intubated. The family refused the offered exploratory laparotomy. Repeated computed tomography three days after the admission showed presence of free intraperitoneal fluid and hyperdensity of the right colon and partially of the small intestine described as intramural bleeding. The general condition of the patient gradually worsened in the next three days, and she died. Acute abdomen is a serious condition and when left untreated can result with death. One of the causes of acute abdomen is acute mesenteric ischemia. In our case the mesenteric occlusion was not proven. However, the clinical presentation of acute abdomen, the presence of free thrombus and the positive signs of intramural bleeding and free intraperitoneal fluid suggested the presence of acute mesenteric ischemia.

**Keywords:** *Acute aortic thrombosis; COVID-19; Mesenteric occlusion*

## 1. Introduction

COVID-19 is infectious viral disease that clinically is shown to manifest differently in various patients. Typical symptoms include dry cough, fever, myalgia, dyspnea, diarrhea, loss of smell and taste. Due to viremia, COVID-19 has shown involvement of multiple organ systems such as lungs, heart, intestines, blood vessels, kidneys, liver, nervous system and eyes [1]. Some of

the complications that are seen include pneumonia, myocarditis, acute myocardial infarction, heart failure, renal failure and thromboembolic events [2]. There are thousands reports of acute aortic thrombosis as complication of COVID-19 with reported mortality of 34%-62 % [3,4]. One of the acute arterial events in these patients is occlusive mesenteric ischemia. This condition is rare and only single cases are reported [5,6]. In this case we present a COVID-19 patient complicated with acute onset of fatal aortic thromboembolism that clinically presented as acute abdomen .

## 2. Case Presentation

A 72-years-old female patient presented in our emergency department with severe abdominal pain with physical finding of acute abdomen. She was tested positive for SARS-CoV-2 and was treated at home in the past 10 days by her family doctor for pneumonia. Prior to admission she was tachycardic, tachypnoic and cyanotic and had pO<sub>2</sub> of 80% with oxygen support. Complete laboratory blood test and contrast enhanced thoracoabdominal computed tomography (CECT) were performed.



FIG. 1. Coronal plane of CECT showing thrombus in the ascending aorta (yellow arrow).



FIG. 2. Axial plane of a CECT scan showing thrombus in abdominal aorta (yellow arrow).



FIG. 3. Axial plane of a CECT scan showing bilateral pneumonia.

Blood test showed hemoglobin levels of 108.00 (120.00 g/l - 165.00 g/l), erythrocyte count of 3.55 ( $3.80 - 5.80 \times 10^{12}/L$ ), leucocyte count of 10.803.50 - ( $10.00 \times 10^9/L$ ), haematocrite of 0.33 (0.35 - 0.50 l/L), neutrophils count of 10.10 ( $2.0 - 8.0 \times 10^9/L$ ), lymphocyte count of 0.10 ( $1.20 - 3.20 \times 10^9/L$ ), serum glucose level of 12.00 (3.90 mmol/L - 5.80 mmol/L), serum urea level of 25.10 (1.80 mmol/L - 9.20 mmol/L), C-reactive protein level of 320.00 (0.00 mg/l - 5.00 mg/l) and D-dimer level of 11570 (0.00 ng/ml - 500.00 ng/ml). CECT revealed bilateral pneumonia, aortic arch thrombosis and free thrombus in the abdominal aorta (FIG. 1, 2 and 3). There were no other detected radiological CECT changes in the intestines.

Shortly after admission saturation dropped to 20% pO<sub>2</sub>, she was reanimated and intubated. Her family refused the offered exploratory laparotomy due to high intraoperative risk. Infectologist was consulted for the pneumonia treatment. Therefore, intravenous Ceftriaxone (2 g × 2 g), Metronidazole (3 mg × 500 mg) and subcutaneous Enoxaparine (2 mg × 40 mg) were administered. Repeated computed tomography scan of the abdomen (native series) was performed three days after admission which showed presence of free intraperitoneal fluid and hyperdensity of the right colon and partially of the small intestine described as intramural bleeding by the radiologist (FIG. 4, 5 & 6). Due to the lack of surgical intervention the general condition of the patient gradually worsened in the end and she died.



Fig. 4

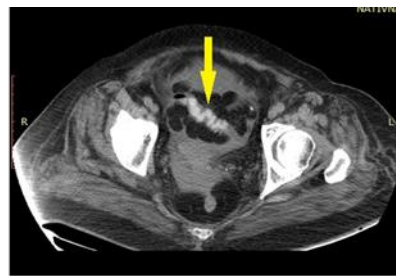


Fig. 5



Fig. 6

FIG. 4, 5 & 6. CT-scans showing free intraperitoneal fluid and partial hyperdensity of the intestines (yellow arrows).

### 3. Conclusion

Acute abdomen is a serious condition and when left untreated can result with death. One of the causes of acute abdomen is acute mesenteric ischemia. In our case due to the lack of exploratory laparotomy and autopsy, the occlusive mesenteric

ischemia was not proven. However, the clinical presentation of acute abdomen, the presence of free thrombus in the abdominal aorta and the positive signs of intramural bleeding and free intraperitoneal fluid suggested the presence of acute mesenteric ischemia.

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