

Case Report

An unusual and atypical presentation of the novel coronavirus: A case report and brief review of the literature



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المخلص

فيروس كورونا ٢٠١٩ (كوفيد-١٩) هو مرض وبائي شديد العدوى وفي الغالب يكون مصحوبا بالحمى والأعراض التنفسية، ولكنه قد يأتي متتكرًا بمتلازمة الشريان التاجي الحادة، أو ألم أو تورم للسان مع تجلط وريدي، أو فقدان الوعي مع تخثر وريدي دماغي، أو ارتباك، أو ضعف الأطراف مع احتشاء الدماغ، أو ألم العصب الوجهي، أو التهاب ملتحمة العين الحاد، أو ألم الحفرة الحرقفي اليميني مثل التهاب الزائدة أو ألم الخصية. هنا قدمنا حالة لمرضى ذكر في ٤٢ من عمره كان يعاني من أعراض كوفيد-١٩ خفيفة، وتطورت إلى احتشاء في عضلة القلب بسبب تخثر في الشريان التاجي الأيسر. تمت معالجة المريض بالأدوية وتحسنت حالته. يجب أن يكون أطباء الطوارئ يقظين للأعراض غير الاعتيادية التي قد يأتي بها مرضى كوفيد-١٩ وخاصة أثناء الجائحة.

الكلمات المفتاحية: كوفيد-١٩؛ أعراض غير اعتيادية؛ متلازمة الشريان التاجي الحادة؛ تخثر وريدي؛ آلام البطن

Abstract

The coronavirus disease 2019 (COVID-19) is a highly contagious novel infection that predominantly presents with fever and respiratory symptoms. However, COVID-19 can masquerade as an acute coronary syndrome, leg

pain or swelling with venous thrombosis, loss of consciousness with cerebral venous thrombosis, confusion, limb weakness with brain infarction, facial neuralgia, acute conjunctivitis, acute appendicitis, and testicular pain. We report on a 42-year-old man who presented with mild symptoms of COVID-19. The patient's electrocardiogram showed an ST-segment elevation myocardial infarction (STEMI) due to a left coronary thrombosis. The patient was managed conservatively with medicines and had an uneventful recovery. Emergency physicians should have a high index of suspicion for the unusual presentations of COVID-19.

Keywords: Abdominal pain; Acute coronary syndrome; COVID-19; Unusual presentations; Venous thrombosis

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Introduction

The novel coronavirus disease 2019 (COVID-19) is a highly contagious disease that originated in Wuhan, China in December 2019. The disease is caused by infection with the novel severe acute respiratory syndrome coronavirus-2 (SARS-CoV-2). The World Health Organization declared a global pandemic in March 2020.¹ COVID-19 patients

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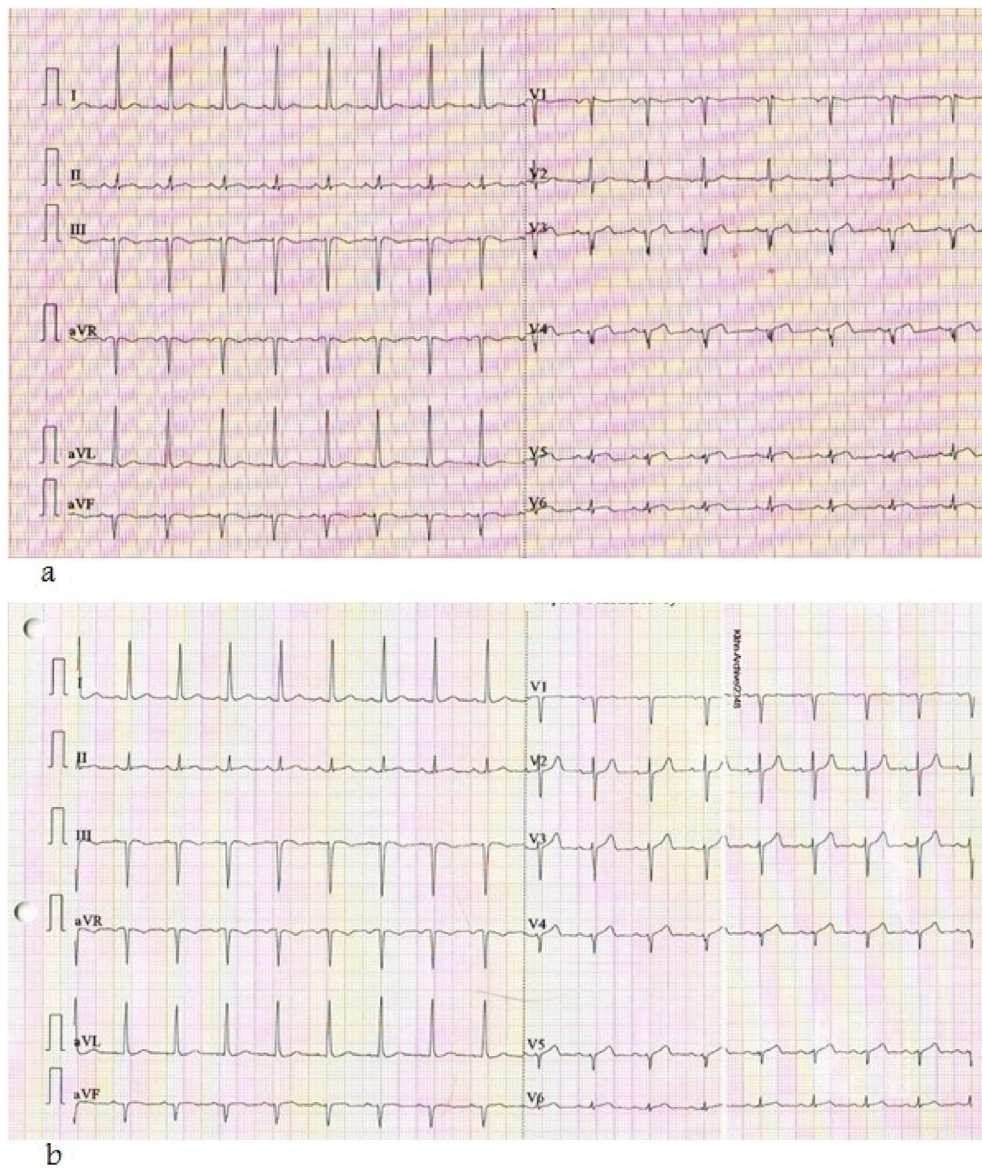


Figure 1: Serial electrocardiogram (ECG) showing a) normal sinus rhythm with left ventricular hypertrophy detected using aVL voltage and ST elevation in V3 to V6, and b) normal sinus rhythm with left ventricular hypertrophy detected using aVL voltage and slight ST elevation in V3 to V5 (improvement after two days of treatment).

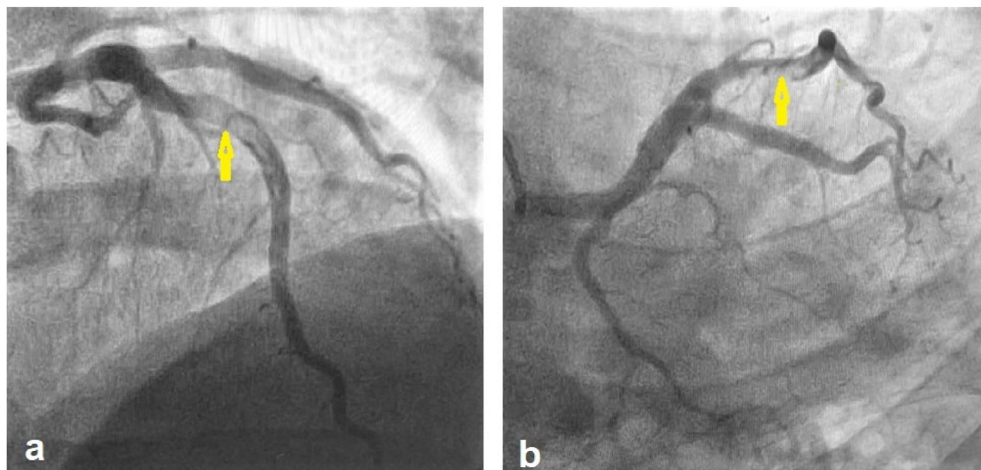


Figure 2: Selected images of a left CAG a) cranial view and b) caudal view showing a large thrombus in the LAD artery (arrows).



Figure 3: Selected image of a follow-up left CAG in cranial view showing that most of the LAD thrombus was resolved.

typically present with fever, cough, myalgia, or fatigue. Less common features are sputum, headache, haemoptysis, and diarrhoea.² Some patients may develop dyspnoea and need intensive care. Anosmia and loss of taste are atypical symptoms that have been reported in some cases.³ Patients may present with unusual or atypical clinical features that are not related to the respiratory system, which may mislead the diagnosis of COVID-19.⁴ COVID-19 can present with or be complicated by several extrapulmonary manifestations like thrombosis, myocardial problems, acute coronary syndrome (ACS), acute renal injury, hepatocellular injury, gastrointestinal symptoms and signs, elevated blood sugar problems, neurological manifestations, ocular symptoms and signs, and dermatological features.⁵

In our case, we report on a COVID-19 patient with atypical presentation. This work aimed to highlight the unusual, atypical, and strange clinical presentations of COVID-19 to alert physicians about them, especially during the ongoing pandemic. A brief literature review was performed using a PubMed search for the term “unusual presentation of COVID-19.” The review included published case reports available through PubMed in the English language from January 2020 to August 2020.

Case presentation

A 42-year-old male patient presented to the emergency department with fever, dry cough, anosmia, and fatigue, and his nasopharyngeal swab reverse transcriptase-polymerase chain reaction (RT-PCR) test confirmed the diagnosis of COVID-19. The patient was advised to isolate at home and was given hydroxychloroquine 400 mg/day, azithromycin 500 mg/day, zinc 30 mg/day, and Paracetamol as needed.

On the ninth day, the patient returned to the emergency department with recurrent retrosternal chest pain attacks radiating to the left shoulder and associated with nausea. The patient’s temperature was 36.8°, his respiratory rate was 18 cycles/minute, his heart rate was 83 beats/minute, and his blood pressure was 130/80 mmHg. The results of his respiratory and cardiovascular clinical examination were unremarkable. The results of his chest x-ray were also unremarkable. Electrocardiogram (ECG) showed a normal sinus rhythm with left ventricular hypertrophy detected using aVL voltage and ST elevation in V3 to V6 that improved after two days of primary care (Figure 1a and b). Serial cardiac troponin T (TnT) was elevated [first result was normal, second was 0.51, and third was 0.78 (normal is up to 0.04 ng per millilitre)]. Echocardiogram (ECHO) showed normal left ventricular systolic function, and ejection fraction (EF) was 60%, with normal wall motion and normal valves. The patient was admitted to the intensive care unit (ICU) dedicated to COVID-19 patients.

On the tenth day, chest pain attacks increased, ECG showed ST elevation and biphasic T inversion with poor R progression in V3 to V6. The patient was diagnosed as ST-segment elevation myocardial infarction (STEMI) and referred to a catheter laboratory (Cath lab) for possible primary percutaneous coronary intervention (PPCI) according to the local guidelines of STEMI during COVID-19. Coronary angiography through a right femoral approach was done, revealing a large thrombus in the middle left anterior descending (LAD) artery with post-interventional thrombolysis in myocardial infarction (TIMI) flow 3 and no significant stenosis (Figure 2a and b). The left circumflex coronary artery and the right coronary artery (RCA) were normal. The patient was managed conservatively with Aspirin, Clopidogrel, beta blockers, Tirofiban, and low dose Heparin infusions for 72 h and continued on Enoxaparin for seven days. A follow up ECHO showed no

Table 1: The literature review includes case reports of COVID-19 with atypical and unusual presentations reported in medical journals indexed in PubMed during the period of the pandemic from January 2020 to August 2020.

Author(s)	Age	Gender	Presentation	Medical imaging findings	RT-PCR
Kaur et al. ⁶	43-y-o	Male	Acute right leg pain with shortness of breath and fever for a week	CXR → bilateral hazy infiltrates CTA → Thrombus in right proximal superficial femoral artery	+ve
Davoodi et al. ⁷	57-y-o	Female	Painful swelling and redness of left leg	CXR → bilateral patch GGO CTA → unremarkable Doppler → left lower limb DVT	+ve

(continued on next page)

Table 1 (continued)

Author(s)	Age	Gender	Presentation	Medical imaging findings	RT-PCR
Visveswaran et al. ⁸	12-y-o	Female	Painful swelling of left leg evaluated before 5 days for erythema and diagnosed as cellulitis	Venography → extensive popliteal to common iliac vein thrombosis	+ve SARS-COV-2 IgM -ve SARS-COV-2 IgG
Hemasian et al. ⁹	62-y-o	Male	Loss of consciousness	Brain CT & MRI → haemorrhagic infarction Brain MRV → sinus thrombosis in right transverse & sigmoid Chest CT → GGO	+ve
Alkeridy et al. ¹⁰	73-y-o	Male	Acute confusion	Brain CT → unremarkable Brain CTA → unremarkable CXR → diffuse bilateral lung interstitial infiltrates	+ve
Ozturker et al. ¹¹	32-y-o	Male	Eye redness, stinging, watery discharge, and photophobia	CXR → unremarkable Chest CT → unremarkable	+ve
Sirakaya et al. ¹²	40-y-o	Male	Bilateral acute conjunctivitis	NA	+ve
Doo et al. ¹³	55-y-o	Male	Left wrist droop, left facial droop, and left arm weakness	CTA of the head and neck → large thrombus in the right CCA and acute right frontal infarction (PRES-like)	+ve
de Freitas et al. ¹⁴	39-y-o	Male	Left hemi facial herpes zoster with sharp pain preceded by fatigue, diarrhoea, and fever	NA	+ve
Abdalhadi et al. ¹⁵	40-y-o	Female	Right iliac fossa pain, nausea, vomiting, fever, and loss of appetite for 3 days	CT → normal appendix with patchy consolidation and GGO in bilateral peripheral basal of lungs	+ve
Kim et al. ¹⁶	42-y-o	Male	Abdominal, testicular, and back pain for 8 days	CXR → unremarkable Abdominal CT → GGO and consolidation in lung bases	NA

COVID-19: Coronavirus disease 2019, **SARS-COV-2:** severe acute respiratory syndrome coronavirus-2, **RT-PCR:** reverse transcriptase-polymerase chain reaction, **CXR:** chest x-ray, **CT:** computed tomography, **CTA:** CT angiography, **GGO:** ground-glass opacity, **DVT:** deep venous thrombosis, **NA:** not available, **-ve:** negative, **+ve:** positive, **y:** year, **o:** old.

new abnormalities, with normal systolic function and an EF of 69%.

On the twentieth day, a follow-up coronary angiogram (CAG) showed partial resolution of the left anterior descending (LAD) artery thrombus with residual particles in situ (Figure 3). The patient continued with triple treatment, with Aspirin, Clopidogrel, and Apixaban, and a CAG was arranged for after two months.

Discussion

SARS-CoV-2, which causes COVID-19, usually presents with fever and respiratory symptoms. However, it may present with unusual or atypical clinical features that are not related to the respiratory system and may mislead from a COVID-19 diagnosis. In this case report and brief review, we focused on the unusual and atypical clinical presentations of COVID-19. In the literature, we found cases reported with unusual or atypical presentations, like leg pain or swelling with venous thrombosis,^{6–8} loss of consciousness with

cerebral venous sinus thrombosis,⁹ confusion,¹⁰ acute conjunctivitis,^{11,12} left facial drop and arm weakness with brain infarction,¹³ facial neuralgia with herpes zoster,¹⁴ right iliac fossa pain like appendicitis,¹⁵ and abdominal pain accompanied by testicular pain¹⁶ (Table 1).

In this paper, we reported a case of COVID-19 that was diagnosed early with mild respiratory symptoms and then complicated with coronary thrombosis and typical myocardial infarction features. A similar case of STEMI with coronary thrombosis was reported by Shams et al. and successfully managed with PPCI.¹⁷ Salido-Tahoces et al. reported another positive case of COVID-19 in a 62-year-old male who presented with asthenia and recurrent chest pain with ACS and proximal RCA stenosis and whose diagnosis was confirmed by CAG.¹⁸ Similarly, Tedeschi et al. reported acute STEMI with a large coronary thrombosis in a 60-year-old man; they explained this by pointing to the presence of high levels of post inflammatory mediators in patients with COVID-19.¹⁹ In addition, Harari et al. reported acute myocardial infarction (AMI) with extensive coronary thrombosis in a 40-year-old

female.²⁰ SARS-CoV-2 infections can cause harmful myocardial complications that include myocardial injury, arrhythmia, myocarditis, cardiomyopathy, arterial and venous thrombosis, cardiogenic shock, and even cardiac arrest.²¹ AMI's pathogenesis is complex, still incompletely understood, and sometimes explained by the uncontrolled release of post-inflammatory cytokines (cytokine storm) and the direct damage of cardiac myocytes due to hypoxemia or the virus itself.^{20–22} Ultimately, severe acute viral infection itself can promote the formation of ACS by increasing the risk of plaque rupture and micro-thrombi, owing to systemic inflammation or a cytokine storm, or by causing hypoxemia and coronary spasm, leading to a decreased oxygen supply to the myocardium.^{20,21,23,24}

Conclusion

COVID-19 patients can present to emergency departments with vascular complications like acute coronary syndrome, as in the current case report. Other unusual and atypical presentations that have been reported include leg pain or swelling with venous thrombosis, loss of consciousness with cerebral venous thrombosis, confusion, acute conjunctivitis, limb weakness with infarction, facial neuralgia, right iliac fossa mimicking appendicitis, or testicular pain. Emergency physicians should be alert to the unusual presentations of COVID-19 during the pandemic.

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Conflict of interest

The authors have no conflict of interest to declare.

Ethical approval

The patient has given informed consent allowing the authors to publish his case and images.

Authors contributions

SAA wrote the initial and final draft of the article. KHH collected and organised data. MAM provided research materials. AMH analysed and interpreted data. TSD provided logistic support. All authors have critically reviewed and approved the final draft and are responsible for the manuscript's content and similarity index.

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