


Acute Pulmonary Embolism in the COVID-19 Era: The Experience of a Ghanaian Patient

Journal of Patient Experience
Volume 8: 1-3
© The Author(s) 2021
Article reuse guidelines:
sagepub.com/journals-permissions
DOI: 10.1177/2374373521997230
journals.sagepub.com/home/jpx


Kofi Tekyi Asamoah, BSc, MBChB¹ 

Abstract

The coronavirus pandemic has resulted in profound changes in healthcare delivery, some based on official reforms and others driven by healthcare professionals' fear of exposure to coronavirus disease (COVID-19). Many patients require screening tests of one form or the other before being attended to in hospitals. The protean clinical manifestations of this highly transmissible infection require that a high index of suspicion be maintained. Pulmonary embolism is a potentially fatal emergency whose presentation is mimicked by COVID-19. Delays in ruling out COVID-19 may result in undue delays in initiating treatment for pulmonary embolism, potentially resulting in significant morbidity and mortality. This article presents a patient whose treatment for acute pulmonary embolism was forestalled by delays in getting the polymerase chain reaction test for COVID-19 done. It reiterates the need for physicians to test promptly in order to allow early focus on differential diagnoses which were routinely being investigated promptly prior to the COVID-19 pandemic.

Keywords

COVID-19, breathlessness, emergency care, pulmonary embolism, personal protective equipment

Introduction

The coronavirus disease 19 (COVID-19) pandemic has resulted in profound changes to healthcare delivery around the world (1). This became necessary due to its high transmissibility (2,3), which has resulted in extensive global morbidity and mortality especially among health workers (4). Many hospitals across the world have changed the manner in which they interact with patients (1,2,5–7) in a bid to minimize physical exposure to patients, who may potentially be infected with COVID-19. While these measures may protect high-risk health workers (4,8), patients who have symptoms listed in the screening criteria but do not have COVID-19 may suffer significant clinical deterioration before receiving the necessary attention (9,10). This is because the signs and symptoms of COVID-19 are not pathognomonic (3,4) and overlap with a myriad of clinical conditions.(3) One of these conditions is pulmonary embolism, which has been reported to have an incidence ranging from 22% to 39% in patients with COVID-19 (11). The delay in clinical care as a result of inadequate protective resources results in preventable deaths (4). This article presents a patient with pulmonary embolism whose clinical care was delayed as an effect of reduced access to healthcare, due to local facility reforms as part of measures to offer protection from the COVID-19 pandemic.

Case Summary

The patient was a 69-year-old man being managed for hypertension, diabetes mellitus, dyslipidemia, and stage 3a chronic kidney disease who presented with a 2-week history of a fever, dry cough, headaches, and episodic breathlessness. Breathlessness had been progressive, and he was unable to sustain a conversation without panting at the time of being seen. He denied anosmia, myalgia, and dysgeusia. Home pulse oximetry showed average saturations of 86% to 89% on room air. He had been compliant on all his routine medications. He reported to a nearby private healthcare facility with these symptoms but was turned away to arrange for personal testing for COVID-19 because they were neither equipped to attend to nor facilitate testing of suspected cases.

On speaking with his regular physician on phone, a COVID-19 screening test in a private laboratory was recommended, which came out negative after 3 days. Following

¹ National Cardiothoracic Centre, Korle-Bu Teaching Hospital, Accra, Ghana

Corresponding Author:

Kofi Tekyi Asamoah, National Cardiothoracic Centre, P. O. Box KB 846, Korle-Bu, Accra, Ghana.
Email: asamoahfiifi@gmail.com



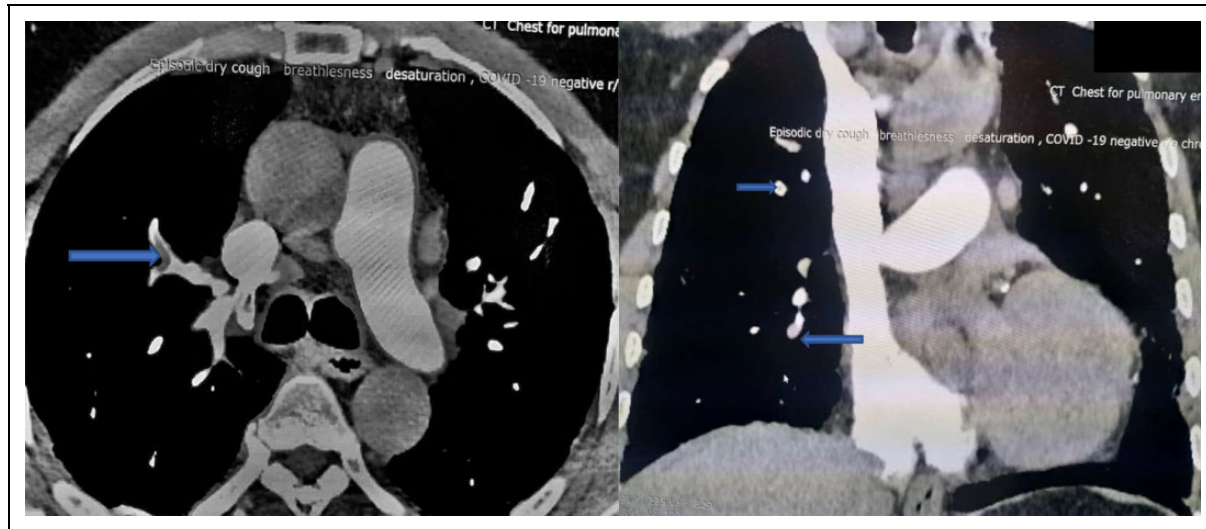


Figure 1. Coronal and axial sections of the patient's computed tomography pulmonary angiogram showing filling defects in the right pulmonary circulation significant of acute pulmonary embolism.

receipt of a negative test result, he had a full physical review as an outpatient which was unremarkable, except for dyspnea (evidenced by a respiratory rate of 32 cpm and flaring of alae nasi) and an oxygen saturation of 88% on room air.

He was therefore referred to do a computed tomography pulmonary angiogram (CTPA), which showed intraluminal filling defects in the segmental and subsegmental artery branches to the right lower lobe (Figure 1). Following this, a diagnosis of acute pulmonary embolism was made. He was started on tab rivaroxaban 15 mg twice daily for 21 days, to be followed with a 20 mg daily dosage. He was asked to rest in bed strictly for the first week of therapy and ambulate lightly afterward. One week after commencing therapy, his oxygen saturations were reading 94% to 98% on room air and the cough and breathlessness had resolved. He currently has no physical limitations.

Discussion

Pulmonary embolism is a common emergency that may easily be missed because of its varied presentation. It is associated with breathlessness, which may or may not be insidious, and requires a high index of suspicion in order to diagnose (12). Left untreated, it is potentially fatal.

The association of COVID-19 with breathlessness makes it an important differential diagnosis of pulmonary embolism in this era and the history is inadequate to differentiate between the two. Due to the pandemic, however, many patients presenting this way are required to screen for COVID-19 before other diagnoses are effectively ruled out (7). This can take days to weeks, depending on the speed of testing in the facility, causing potentially harmful delays (10) in giving care.

This patient had symptoms for over 3 weeks before the diagnosis of a pulmonary embolism was made. Normally, this

would have been suspected on his first visit and a CTPA requested to rule it out immediately. He was, however, sent away because of the initial facility's inability to assist him with testing. Various authors report postponement of elective cases (5), tightening of admission criteria (1), and decreased hospital attendance (7) for certain emergencies like strokes (13) and gynecologic emergencies (10) owing to the measures put in place to control the COVID-19 pandemic(2). While this functional reduction in hospital accessibility (1,7) may succeed in reducing exposure of staff and patients to COVID-19, it impacts profoundly on acute and chronic care (7) and may consequently result in a greater morbidity and mortality from previously well-treated emergencies.

While the foremost rule of first aid is ensuring personal safety with regular re-assessment of the situation before offering help (14), the patient's right to medical care remains unchanged and must be remembered especially in light of the pandemic. Telemedicine may be beneficial with outpatient care, but real emergencies still need prompt face-to-face consultations. There is the need for clinicians to maintain a high index of suspicion for COVID-19, while remembering that it is a great mimic of many other disease conditions. Therefore, diagnoses that were being considered prior to the onset of the pandemic must still be entertained as applicable and local measures put in place to ensure that such people are investigated properly and receive an appropriate level of care, while ensuring health worker protection(15). Accelerated testing of suspected cases is encouraged (1) in order to facilitate clinical decision-making and improve overall patient outcomes. Adequate personal protective equipment should be made available to all who handle suspected cases at designated areas to ensure that they receive the deserved care and attention (14). All local health facilities, regardless of size, must have access to

updated national guidelines and contact numbers to facilitate prompt referral to the appropriate quarters when they contact a suspected case (4).

A challenge in this case is the inability to categorically state that he was not infected with COVID-19, as his test sample was taken 3 weeks after the onset of symptoms. The COVID-19 is in itself associated with thromboembolic events (11) including pulmonary embolism. His CTPA findings are in consonance with Cavagna et al's finding that localized right lung pulmonary embolism occurred in about 40% of COVID-related cases, with 61% of these affecting subsegmental pulmonary arteries in the lower lung lobes (11). Nonetheless, the focus of this article is on the potential effect of delays in investigating other diagnoses due to delays in ruling out COVID-19, a position that is communicated regardless of whether or not this event was related to a COVID-19 infection.

Conclusion

The COVID-19 pandemic has affected healthcare delivery immensely, but quality must not be compromised. Modifications to accessibility should also not result in deprivation of access to individuals who require it because the presence of COVID-19 does not eliminate the conditions that pre-dated it. Clinicians must maintain a high index of suspicion in order to diagnose other conditions that may be mimicked by COVID-19. Appropriate safety measures must be put in place by relevant officials to ensure maximum staff protection while rendering quality service to patients. This will help to reduce avoidable morbidity and mortality in the population.

Acknowledgment

The author acknowledges the patient for consenting to the use of his information in preparing this paper and willingly giving his CTPA images to be shared.

Authors' Note

Verbal informed consent was obtained from the patient for his anonymized information to be published in this article.

Declaration of Conflicting Interests

The author(s) declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

Funding

The author(s) received no financial support for the research, authorship, and/or publication of this article.

ORCID iD

Kofi Tekyi Asamoah, BSc, MBChB  <https://orcid.org/0000-0002-8218-854X>

References

1. Bojdani E, Rajagopalan A, Chen A, Gearin P, Olcott W, Shankar V, et al. COVID-19 Pandemic: impact on psychiatric care in the United States. *Psychiatry Res.* 2020;289:1-13.

2. Al-Jabir A, Kerwan A, Nicola M, Alsafi Z, Khan M, Sohrabi C, et al. Impact of the coronavirus (COVID-19) pandemic on surgical practice—Part 1. *Int J Surg.* 2020;79:168-79.
3. Sommer P, Lukovic E, Fagley E, Long DR, Sobol JB, Heller K, et al. Initial clinical impressions of the critical care of COVID-19 patients in Seattle, New York City, and Chicago. *Anesth Analg.* 2020;131:55-60.
4. Bong CL, Brasher C, Chikumba E, McDougall R, Mellin-Olsen J, Enright A. The COVID-19 pandemic: effects on low- and middle-income countries. *Anesth Analg.* 2020;131:86-92.
5. Ramaswamy A, Yu M, Drangsholt S, Ng E, Culligan PJ, Schlegel PN, et al. Patient satisfaction with telemedicine during the COVID-19 pandemic: retrospective cohort study. *J Med Internet Res.* 2020;22:e20786.
6. Iyengar K, Jain VK, Vaishya R. Pitfalls in telemedicine consultations in the era of COVID 19 and how to avoid them. *Diabetes Metab Syndr Clin Res Rev.* 2020;14:797-799.
7. Cheli M, Dinoto A, Olivo S, Tomaselli M, Stokelj D, Cominotto F, et al. SARS-CoV-2 pandemic and epilepsy: the impact on emergency department attendances for seizures. *Seizure.* 2020;82:23-26.
8. Madanagopalan VG, Sriram Gopal M, Sengupta S. Perspectives of physicians in general and ophthalmologists in particular about restarting services post-COVID-19 lockdown. *Indian J Ophthalmol.* 2020;68:14016.
9. Ohannessian R, Duong TA, Odone A. Global telemedicine implementation and integration within health systems to fight the COVID-19 pandemic: a call to action. *JMIR Public Health Surveill.* 2020;6:e18810.
10. Grandi G, Del Savio MC, Caroli M, Capobianco G, Dessole F, Tupponi G, et al. The impact of COVID-19 lockdown on admission to gynecological emergency departments: results from a multicenter Italian study. *Int J Gynaecol Obstet.* 2020;151:1-10.
11. Cavagna E, Muratore F, Ferrari F. Pulmonary Thromboembolism in COVID-19: venous thromboembolism or arterial thrombosis? *Radiol Cardiothorac Imaging.* 2020;2:e200289.
12. Howard L. Acute pulmonary embolism. *Clin Med J R Coll Physicians London.* 2019;19:243-7.
13. Naccarato M, Scali I, Olivo S, Ajčević M, Buoite Stella A, Furlanis G, et al. Has COVID-19 played an unexpected “stroke” on the chain of survival? *J Neurol Sci.* 2020;414:1-8.
14. Pek JH. Guidelines for bystander first aid 2016. *Singapore Med J.* 2017;58(7):411-7.
15. Huang Z, Zhao S, Li Z, Chen W, Zhao L, Deng L, et al. The battle against coronavirus disease 2019 (COVID-19): emergency management and infection control in a radiology department. *J Am Coll Radiol.* 2020;17:710-6.

Author Biography

Kofi Tekyi Asamoah, BSc, MBChB, is a final year resident in Internal Medicine with an interest in Cardiology. His research interests include patient empowerment through the doctor-patient relationship to maximise preventive health behaviours and improving patients' overall medical experience.