

Syncope: an uncommon Pulmonary Embolism presentation in COVID infection with low Wells scoring

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Abstract

Pulmonary Embolism has been well established to be a potential life threatening medical emergency. Patients typically present with pleuritic chest pain with pressure, tachycardia, tachypnea, and desaturation of oxygen levels. We describe a case in which a COVID positive male presented to the ED via ambulance with saddle PE.

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Abstract

Pulmonary Embolism has been well established to be a potential life threatening medical emergency. Patients typically present with pleuritic chest pain with pressure, tachycardia, tachypnea, and desaturation of oxygen levels. We describe a case in which an 82 year old COVID positive male presented to the ED via ambulance with a saddle pulmonary embolus which presented with a syncopal episode that resolved spontaneously and without supplemental oxygen. The patient underwent an urgent IR guided thrombectomy to prevent further complications from the embolus including dislodgement and damage to pulmonary vasculature and subsequent type 4 pulmonary hypertension.

Introduction

Pulmonary Embolism has been well established to be a potential life threatening medical emergency. Patients typically present with pleuritic chest pain with pressure, tachycardia, tachypnea, and desaturation of oxygen levels. Few case reports previously have described syncope as the presenting episode of pulmonary embolism. Pulmonary embolism presenting with syncopal episode that resolved without tPA or thrombectomy is rare however documented.

Case Presentation

An 82 year old gentleman with medical history of diabetes mellitus type 2, hypertension, hyperlipidemia, and recently covid infection 4 weeks ago presented to our hospital for syncopal episode while he was walking to his kitchen when he began to feel light headed and proceeded to sit down. He was found by his daughter in the kitchen slumped in a chair with agonal breathing and pinpoint pupils oxygen saturation 76 percent and EMS placed him on a non-rebreather mask at 15 L/min. Narcan was administered by the EMS responders with no change in neurological status. On arrival at the emergency department; physical exam revealed the patient was alert and oriented to person, place, time, and location but could not remember anything after sitting down. The urine toxicology was negative. Vitally the patient was hemodynamically stable. Wells risk assessment scoring was zero in the emergency department. Labs were significant for elevated troponins intuitively 112ng/L, but no further increases respectively. A d-dimer was positive at 7618ng/mL. Covid nasal swab was positive. The CT angiogram of the chest yielded saddle pulmonary embolus (figure 1/2).

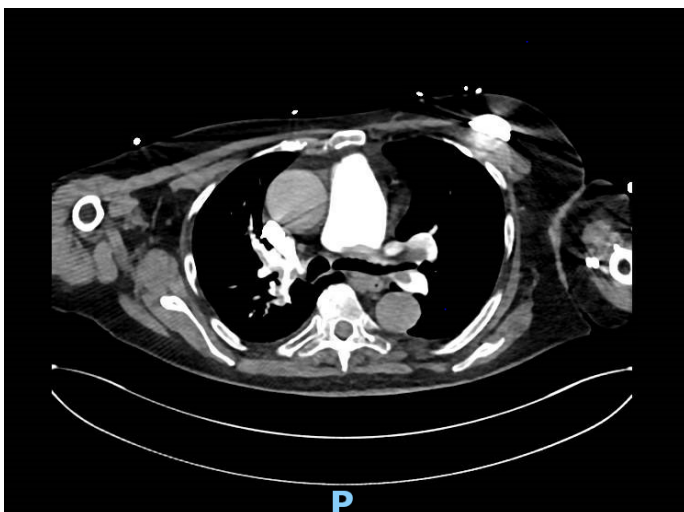


Figure 1

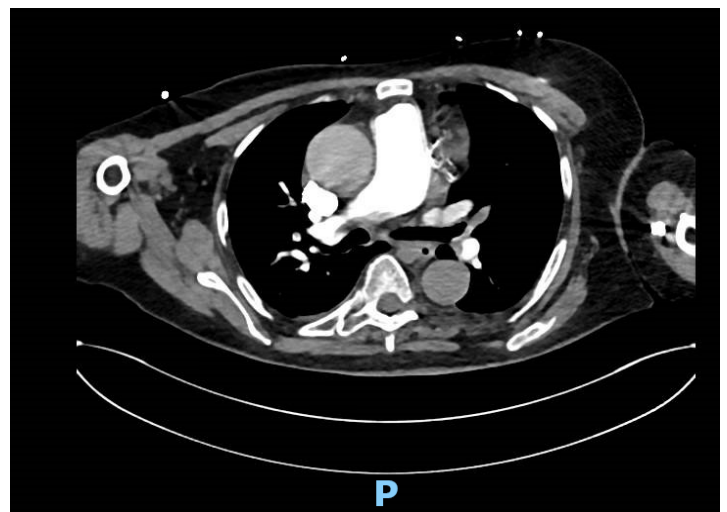


Figure 2

The patient was promptly started on a heparin bolus followed by infusion and was admitted to the hospital. The patient underwent IR guided thrombectomy the following day. Since arriving on to the emergency department the patient never required supplemental oxygen.

Discussion

The pathophysiology of this embolism has been understood since the development of the COVID 19 pandemic. The procoagulant effects of COVID are well documented since the development of the pandemic. The major mechanism is felt to be acute central pulmonary vascular occlusion with resultant drop in cardiac output, hypotension, and reduced cerebral perfusion (1) Syncope as an initial presentation of pulmonary embolism occurs in about 10% of patients (2) Compared to patients without syncope, those with syncope had a higher rate of central embolism (3) Previous studies suggest Hypotension on admission was more common among patients with syncope compared to no syncope (26.7% and 7.4%, respectively, $P = 0.03$). A clinically significant difference was found in 30-day mortality among those with syncope versus no syncope (4). Documented cases previously have shown significant vital arrangements for those with saddle PE. A probable cause for the patients atypical presentation is that the clot could have originally been causing a complete obstruction of the right ventricular outflow tract which dislodged blocking the right main pulmonary artery allowing restoration of flow to the left lung vasculature and a restoration of pulmonary perfusion sufficient enough to improve oxygenation and restoration of mental status, and hemodynamic instability considering no other interventions were done until the imaging confirmed PE.

Conclusion

The goal of this case report was to bring attention to an uncommon presentation of PE. Patients with syncope, pulmonary embolism may not be diagnosed promptly leading to incorrect medical management. This patient had a low wells pretest probability given hemodynamic stability in the ED. Incorrect diagnosis could inadvertently lead to increased mortality given the potential for obstructive cardiac shock, or development of chronic type 4 pulmonary hypertension and subsequent right ventricular strain.

Abbreviations

ED - Emergency Department
IR - Interventional Radiology
EMS - Emergency Medical Services
CT - Computed Tomography
CTA - Computed Tomography Angiogram
L/min - Liters per minute
ng/mL - nanograms per milliliter

Data availability

Data is available on request

Consent

A verbal consent was obtained from the patient to write this case report using de identified information and de identified radiologic images

Conflicts of Interest

The authors have no conflict of interest to declare

Acknowledgements

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