CASE REPORT

A race against time: The unforeseen embolic event.

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Submitted: 05 Oct 2025
Revised: 14 Oct 2025
Accepted: 20 Oct 2025
Published: 05 Nov 2025

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How to cite this article: Shoba Philip, Aneeta Michael. A race against time: The unforeseen embolic event. TAISAK 2025; 1(2): 52-55

Access This Artile Online

Website: theanaesthesiologist.com

ABSTRACT

Pulmonary embolism (PE) is a life-threatening event that may occur even in individuals with negligible or absent risk factors [1]. PE is typically linked with surgeries of long duration, prolonged immobilization, obesity, patient with h/o malignancy and on treatment for malignancy, thrombophilic disorders . There are reports of pulmonary embolism occurring in individuals with low-risk , suddenly in the preop and post op period with dramatic symptoms. This report describes two postoperative cases of PE linked to unusual factors which require extensive research.

Keywords: Pulmonary embolism, COVID, Ayurvedic medications

Case 1

A 43-year-old woman (BMI 20), ASA class 1 , no history of abortions or surgeries in the past ,no h/o malignancies or bleeding /clotting disorders in the family and normal systemic examination underwent right ureterorenoscopy and DJ stenting under spinal anesthesia. The 20-minute procedure was uneventful and she remained stable for several hours postoperatively. She was shifted out to the ward the same evening. The next morning, soon after breakfast, she suddenly developed dizziness, a brief seizure and cardiovascular collapse in the ward. Examination by the rapid response team revealed hypotension, tachycardia, tachypnea, and hypoxia as evidenced by transport pulse oximeter (85%). %). She was shifted to the ICU with Oxygen support via AMBU. Glasgow Coma Scale was 8. She was intubated and treated with intravenous fluids, vasopressors and antiepileptics. We suspected aspiration but chest was clear throughout. ECG showed new-onset atrial fibrillation followed by S1Q3T3 in the serial ECG.ABG analysis revealed metabolic acidosis with elevated lactate. Echocardiography demonstrated right atrial and ventricular dilatation with an ejection fraction of 30% suggesting acute PE. D-dimer levels were markedly raised (61,053 ng/mL) and Troponin I was 329 ng/L. Because of hemodynamic instability CT pulmonary angiography (CTPA) was deferred. Immediate thrombolysis was initiated with ongoing CPR resulting in rapid hemodynamic recovery in 4 hours. Post -stabilization CTPA confirmed residual thrombi in the bilateral basal pulmonary arteries. She was discharged on oral anticoagulants (Apixaban) with stable haemodynamic and neurological parameters and asked to review in cardiology OP after 6 weeks. Retrospective review revealed two proved episodes of COVID-19 infection followed by lower respiratory tract infection one month back which was not tested for Covid and ongoing use of Ayurvedic medicine for renal calculi until the day before surgery.

Case 2

A 30-year-old man, ASA class 1 with mandibular and maxillary fractures secondary to a road-traffic accident underwent open reduction and internal fixation of mandibular fracture under general anesthesia with endotracheal intubation. He had no relevant medical or family history. Intra- and postoperative courses were uneventful. DVT prophylaxis with pneumatic pump was ensured and ambulated early postoperatively.

On postoperative day seven, he experienced sudden seizure and cardiorespiratory arrest in the ward. CPR was initiated and return of spontaneous circulation was achieved after two cycles. He was intubated and transferred to the ICU. ECG findings were consistent with PE (S1Q3T3). Echocardiography demonstrated severe right-sided chamber dilatation and dysfunction with a suspected thrombus in the left pulmonary artery. D-dimer exceeded 25,000 ng/mL. Bilateral Venous Doppler confirmed deep vein thrombosis in the right leg. He was haemodynamically stable without Vasopressors. CTPA revealed a massive PE involving the left main pulmonary artery extending into lobar branches as well as thrombi in the right pulmonary branches. The patient underwent immediate thrombolysis followed by anticoagulation with low-molecular-weight heparin 0.6ml S/C twice daily for 3 days. He developed minor bleeding at the surgical site which subsided by its own but no intracranial hemorrhage as evidenced by CT Brain. He was extubated on day 4 and started on Dabigatran 110 mg twice daily and advised to review in cardiac OP after 6 weeks and discharged on T. Digoxin, T. Dabigatran and T. Levetiracetam. Review of history revealed occasional smoking, a recent respiratory infection within 1 month not tested for COVID and the use of Ayurvedic medication for low back pain for the past six months.

Discussion

These cases underscore that pulmonary embolism can occur in patients categorized as low-risk (Caprini score < 2) and in patients categorized as low-risk (Caprini score < 2) and in patients categorized as high risk (Caprini score >2) [3]. Both individuals exhibited multiple factors that may have contributed to a prothrombotic milieu: dehydration, recent respiratory infections (possibly post-COVID) and herbal medication use[4]. Dehydration leads to hemoconcentration and venous stasis; subclinical infections can induce injury to the endothelium causing disturbance to the endothelium and cytokine release causing hypercoagulability [4]. Ayurvedic formulations in food, water and industrial products which contain heavy metals like mercury , lead, cadmium, arsenic and chromium cause damage to the vascular endothelium resulting in activation of coagulation. [5]. Together, these conditions can amplify thrombosis risk, particularly in the post-COVID era marked by persistent inflammatory and vascular sequelae [6]. Both case 1 and case 2 had a Wells score for PE of <2 (1.5) – only tachycardia[7] still they developed PE, case 1 within 24 hours of surgery and case 2 on the 7th postop day. The only common factors in both these cases was history suggestive of covid infection and history of Ayurvedic drug intake for more than1 month, this instigates us to look into other factors especially in the Indian population where Ayurvedic medication is very popular for aches, pains and renal stones.

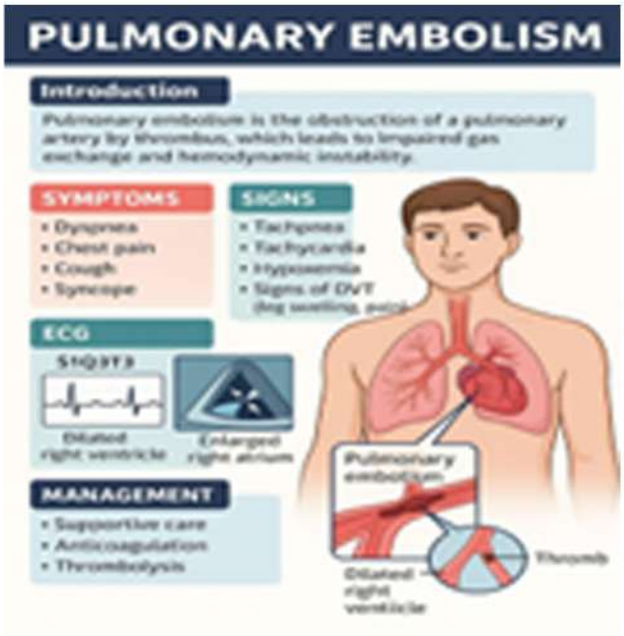

Fig 1. [2]

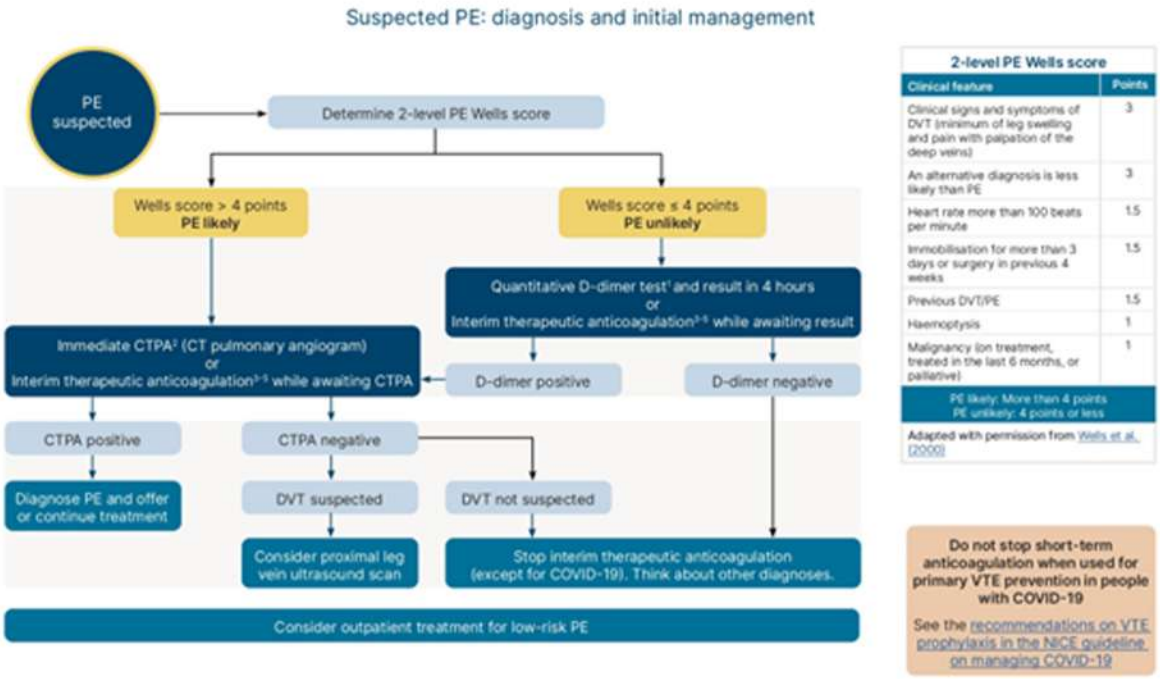

fig2[7a]

DVT or PE: anticoagulation

- Measure baseline full blood count, renal and hepatic function, PT and APTT but start anticoagulation before results available. Review and if necessary act on results within 24 hours
- Offer anticoagulation for at least 3 months. Take into account contraindications, comorbidities and the person's preferences
- After 3 months (3 to 6 months for active cancer) assess and discuss the benefits and risks of continuing, stopping or changing the anticoagulant with the person. See long-term anticoagulation for secondary prevention in the guideline

No renal impairment, active cancer, antiphospholipid syndrome or haemodynamic instability	**Renal impairment** (CrCl estimated using the Cockcroft and Gault formula; see the BNF)	**Active cancer** (receiving antimitotic treatment, diagnosed in past 6 months, recurrent, metastatic or inoperable)	**Antiphospholipid syndrome** (triple positive, established diagnosis)
Offer apixaban or rivaroxaban If neither suitable, offer one of: • LMWH for at least 5 days followed by dabigatran or edoxaban • LMWH and a VKA for at least 5 days, or until INR at least 2.0 on 2 consecutive readings, then a VKA alone	CrCl 15 to 50 ml/min, offer one of: • apixaban • rivaroxaban • LMWH for at least 5 days then – edoxaban **or** – dabigatran if CrCl ≥ 30 ml/min • LMWH or UFH and a VKA for at least 5 days, or until INR at least 2.0 on 2 consecutive readings, then a VKA alone CrCl < 15 ml/min, offer one of: • LMWH • UFH • LMWH or UFH and a VKA for at least 5 days, or until INR at least 2.0 on 2 consecutive readings, then a VKA alone	Consider a DOAC If a DOAC is not suitable, consider one of: • LMWH • LMWH and a VKA for at least 5 days or until INR at least 2.0 on 2 consecutive readings, then a VKA alone Offer anticoagulation for 3 to 6 months Take into account tumour site, drug interactions including cancer drugs, and bleeding risk	Offer LMWH and a VKA for at least 5 days or until INR at least 2.0 on 2 consecutive readings, then a VKA alone

fig.3[7b]

In patients with PE accompanied with haemodynamic instability - unfractionated heparin infusion with thrombolytic therapy is adviced. For extremes of body weight less than 50kg or more than 120kg anticoagulation should be continued considering safety and therapeutic profile. Monitoring INR is not routinely recommended [fig3][7]

As per the NICE guidelines the first patient was managed with Apixaban for six weeks and asked to review and probably will have it extended to 3 months as there was prior proved COVID infection. The second patient was prescribed Dabigatran 110 mg twice daily for six weeks and maybe continued for 3 to 6 months since there is extensive thrombosis in right leg. If no recurrence, both will be stopped at 3 months. Both cases were advised to refrain from usage of any type of Ayurvedic drugs. Case 2 was referred to our vascular surgeon because patient was young and for benefit of IVC filters but since he was hemodynamically stable throughout, it was not put.

Both these cases show evidence of an association of covid and ayurvedic drug intake with pulmonary embolism which requires further research, hence the reporting.

CONCLUSION

Pulmonary embolism can present as a catastrophic event which can mask other conditions. Presentations range from mild dyspnea to sudden cardiovascular collapse. These cases emphasize the importance of maintaining clinical vigilance even after minor procedures, rapid recognition and resuscitation and incorporating individualized factors—such as hydration status, recent respiratory infections like COVID and use of alternative medicines—into perioperative risk assessment. In the evolving post-pandemic landscape, sustained awareness is vital to prevent unexpected thromboembolic outcomes.

REFERENCE

1.Aharoni M, Horesh N, Rogowski O, Kremer A, Mayan H, Justo D. Unprovoked pulmonary embolism in older adults: incidence and prognosis. Archives of Medical Science. 2021 Mar 1;17(2): 337–42.

2. OpenAI. Pulmonary embolism: Overview infographic. ChatGPT (GPT-5) [Internet]. 2025 Oct 30 [cited 2025 Oct 30]. Available from: https://chat.openai.com/

3.Edwards MA, Falstin M, Uddandam A, Brennan E, Spaulding A. Caprini guideline indicated venous thromboembolism (VTE) prophylaxis among inpatient surgical patients: are there racial/ethnic differences in practice patterns and outcomes? The American Journal of Surgery. 2024 Oct;236:115785.

4.Anderson FA. Risk Factors for Venous Thromboembolism. Circulation [Internet]. 2003 Jun17;107(90231):9I--16.Availablefrom: https://www.ahajournals.org/doi/full/10.1161/01.cir.0000078469.07362.e6

5.Pan Z, Pan Z, Gong T, Liang P, Liang P, Liang P. Heavy Metal Exposure and Cardiovascular Disease. Circulation research. 2024 Apr 26;134(9):1160–78.

6.Sutanto H, Gatot Soegiarto. Risk of Thrombosis during and after a SARS-CoV-2 Infection: Pathogenesis, Diagnostic Approach, and Management. Hematology Reviews [Internet]. 2023Apr3;15(2):225-43.Availablefrom:https://www.ncbi.nlm.nih.gov/pmc/articles/PMC10123679/

7,7a,7b.Schulman S, Konstantinides S, Hu Y, Tang LV. Thrombosis and Haemostasis [Internet]. 2020 Jun 11;120(08):1143–6. Available from: https://www.nice.org.uk/guidance/ng158/resources/venous-thromboembolic-diseases-diagnosis-management-and-thrombophilia-testing-pdf-66141847001797

CONFLICT OF INTEREST

Nil

AUTHORSHIP DECLARATION

We, hereby declare that this manuscript has not been published before or presented at any conference .

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1st Nov 2025