

Pulmonary Embolism Due to Clomiphene Therapy: A Case Report

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ABSTRACT

Pulmonary embolism is a well-known condition in the medical field that is associated with high mortality. Multiple risk factors have been identified. For example, the use of oral contraceptives in females is well described. However, only a limited number of case reports describe pulmonary embolism associated with hormone therapy in males. We present a case of a young male with infertility who was treated with clomiphene and subsequently developed pulmonary embolism.

Keywords: Clomiphene; Pulmonary Embolism; Deep Vein Thrombosis.

Introduction

Pulmonary embolism (PE) is a common and potentially life-threatening form of venous thromboembolic disease. The annual incidence is estimated at 393,000 cases in the United States and 296,000 cases in Europe. It is the third most common cause of cardiovascular death. PE accounts for approximately 8,000 to 10,000 deaths annually in the United States and around 13,000 deaths annually in Europe (1,2). PE is associated with both inherited and acquired risk factors. Inherited risk factors include factor V Leiden, prothrombin gene mutation, antithrombin deficiency, protein C deficiency, and protein S deficiency. Acquired risk factors include trauma, surgery, malignancy, peripartum state, estrogen therapy, aging, and obesity (1).

According to a review by Mbi Feh MK et al. (3), clomiphene citrate is an FDA-approved selective estrogen receptor modulator (SERM) indicated for the treatment of anovulatory or oligo-ovulatory infertility to induce ovulation in patients who desire to conceive. The patients most likely to benefit from clomiphene citrate are those diagnosed with polycystic ovarian syndrome (PCOS) and other causes of infertility, such as post-oral-contraceptive amenorrhea, amenorrhea-galactorrhea syndrome, psychogenic amenorrhea, as well as some cases of secondary amenorrhea.

Clomiphene citrate is also often used off-label by men to treat both male infertility and secondary hypogonadism because it increases

serum testosterone levels. Clomiphene citrate is also known to be abused by healthy athletes such as bodybuilders and weightlifters for performance enhancement because it raises serum testosterone and gonadotropin levels.

Reported adverse effects from using clomiphene include headache, dizziness, exacerbation of psychiatric illnesses, gynecomastia, testicular tumor, vasomotor flushing, gastrointestinal disturbances, and mastalgia. Other common adverse reactions include nausea, vomiting, ovarian enlargement, blurred vision, scintillating scotoma, abnormal uterine bleeding, pelvic pain, and hypertriglyceridemia. Some serious adverse reactions to the use of clomiphene are multiple pregnancies, thrombocytopenia, pancreatitis, an increased risk of ovarian cancer after prolonged use, an increased risk of malignant melanoma, severe visual disturbance, and hepatic damage.

Clomiphene citrate increases the release of pituitary gonadotropins, which leads to elevated estradiol levels and may enhance thrombogenic risk. This mechanism may contribute to the development of thromboembolic events.

Case Report

A 34-year-old male with a history of infertility who was being treated with clomiphene citrate 50 mg daily presented to our clinic

with a 3-day history of sudden-onset pleuritic chest pain accompanied by hemoptysis. He also reported pain and swelling of the right leg over the preceding three weeks. He denied recent travel or trauma and had no family history of thrombosis, coagulation disorders, or malignancy. Physical examination findings were unremarkable, with no pleural friction rub or abnormal breath sounds. The right lower extremity showed no swelling, tenderness, or other abnormal findings at presentation.

Computed tomography pulmonary angiography, shown in Figures 1 and 2, revealed acute pulmonary embolism involving the bilateral main pulmonary arteries with extension into all lobar branches (arrows), as well as pulmonary infarction in segments S9 and S10 of the right lung.

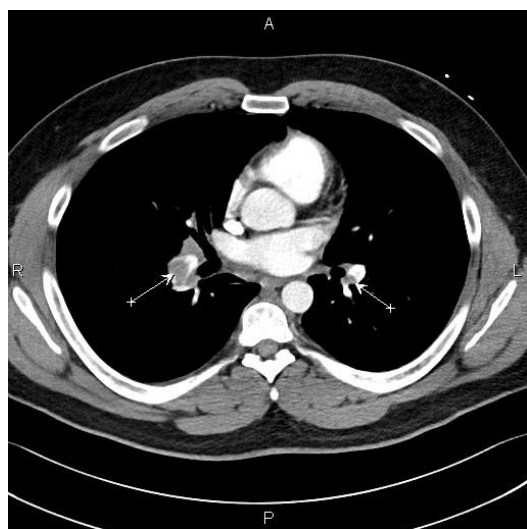


Figure 1. Axial contrast-enhanced computed tomography pulmonary angiography showing bilateral pulmonary arterial filling defects consistent with pulmonary emboli (arrows).

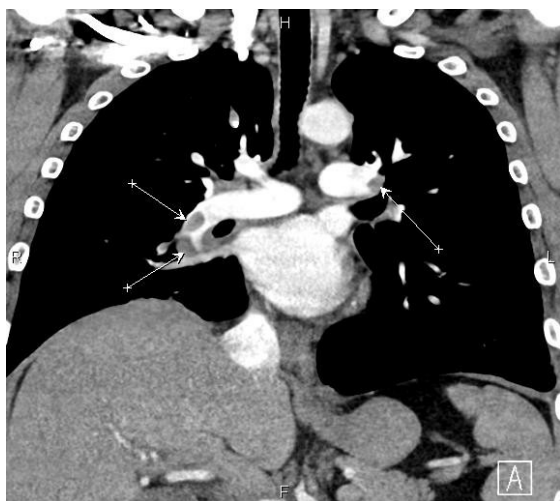


Figure 2. Coronal contrast-enhanced computed tomography pulmonary angiography showing bilateral pulmonary arterial filling defects consistent with pulmonary emboli (arrows).

Venous Doppler ultrasound demonstrated acute deep vein thrombosis in the right lower extremity involving the femoral and popliteal veins. The patient was started on low-molecular-weight heparin, with dosing adjusted according to anti-Xa levels. Anti-coagulation was later transitioned to apixaban. Clomiphene citrate was discontinued. Evaluations for hypercoagulable disorders (including protein C and S deficiency, factor V Leiden mutation, and factor II-prothrombin gene mutation) were negative.

Discussion

Before 1986, no cases of pulmonary embolism associated with clomiphene citrate use in men had been documented (4). Between 1986 and 2025, only five case reports in men have been published (4-8). The incidence of clomiphene-associated PE is extremely low and is estimated to be less than 1% (9). Although rare, thromboembolic complications associated with clomiphene citrate have been reported, including deep vein thrombosis, pulmonary embolism, stroke, retinal vein thrombosis, portal vein thrombosis, superior mesenteric venous thrombosis, and thrombosis of the right coronary artery (10,11).

Conclusion

We report a case of a 34-year-old male with no known risk factors who developed PE following clomiphene therapy for infertility. Clomiphene citrate is generally considered safe. However, clinicians should remain vigilant for potential thromboembolic events when prescribing this medication.

Conflicts of Interest

The authors declare no conflict of interest and received no specific funding for this work.

Informed Consent

Written informed consent for publication of this case report and accompanying images was obtained from the patient

References

1. Turetz M, Sideris AT, Friedman OA, Tripathi N, Horowitz JM. Epidemiology, pathophysiology, and natural history of pulmonary embolism. *Semin Intervent Radiol*. 2018; 35: 92-98.
2. Thompson BT, Kabrhel C. Pulmonary embolism: Epidemiology and pathogenesis in adults. *UpToDate*. 2025. <https://www.uptodate.com/contents/pulmonary-embolism-epidemiology-and-pathogenesis-in-adults>
3. Mbi Feh MK, Patel P, Wadhwa R. Clomiphene. In: StatPearls [Internet]. Treasure Island (FL): StatPearls Publishing; 2024.
4. Chamberlain RA, Cumming DC. Pulmonary embolism during clomiphene therapy for infertility in a male: A case report. *Int J Fertil*. 1986; 31: 198-199.
5. Roan J. Clomiphene-induced pulmonary embolism in a young adult male. *Chest*. 2019; 156(Suppl 4): A761.

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6. Solipuram V, Pokharel K, Ihedinmah T. Pulmonary embolism as a rare complication of clomiphene therapy: A case report and literature review. *Case Rep Endocrinol.* 2021; 2021: 9987830.
 7. Puri C, Obah EA. Clomiphene-induced pulmonary embolism. *J Community Hosp Intern Med Perspect.* 2021; 11: 256-257.
 8. Niraula S, Oli S, Banjara NS, Niraula S, Khanal R. Is clomiphene the culprit? *Int J Blood Res Disord.* 2025; 12: 100.
 9. UpToDate. Clomiphene: Drug information [Internet]. Wolters Kluwer. <https://www.uptodate.com/>
 10. Shahid Z, Kim GE, Mousa T, AlSehli Z, Al-Qahtani A. Clomiphene-induced myocardial infarction in a young male: A case report of a rare cardiovascular complication. *Sci Prog.* 2025; 108: 1-10.
 11. Fatima A, Fernyhough LJ, Mohammed AM, Haider V, Eltahir A. Clomiphene-induced portal vein thrombosis and superior mesenteric venous thrombosis. *Cureus.* 2024; 16: e70627.