



CASE REPORT

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Aspirin-induced hemoptysis in a tertiary care centre – A case report

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ARTICLE INFO ABSTRACT



Received 10 Jun 2025;
Revised 25 July 2025;
Accepted 14 August 2025.

Keywords:

Aspirin, hemoptysis, case report, adverse drug reaction, cardiovascular disease, antiplatelet therapy, bleeding complications.

Introduction: Aspirin, a commonly prescribed antiplatelet agent, is integral in the secondary prevention of cardiovascular diseases. However, its use is associated with various adverse effects, primarily bleeding complications. Hemoptysis, or the expectoration of blood from the lower respiratory tract, is a rare but potentially life-threatening side effect of aspirin therapy.

Case Details: We report the case of a 42-year-old male with a history of dilated cardiomyopathy and chronic alcohol use, who presented with hemoptysis after being on a daily dose of 75 mg aspirin (Ecosprin) for ischemic heart disease prophylaxis. Upon presentation, the patient's vital signs were stable. Aspirin was promptly discontinued, and treatment included intravenous tranexamic acid and vitamin K. Comprehensive investigations, including blood tests, chest X-ray, and coagulation profile, were conducted. Elevated potassium levels, attributed to concurrent spironolactone use, were noted, and spironolactone was discontinued. The patient responded well to treatment and was subsequently discharged. The adverse event was classified as "Possible" based on the Naranjo ADR assessment scale.

Conclusion: This case underscores the importance of recognizing hemoptysis as a rare adverse effect of aspirin, especially in patients with additional risk factors. Prompt discontinuation of aspirin and appropriate supportive care are essential for managing such cases. Increased awareness and documentation of such adverse reactions are vital for improving patient safety.

An official publication of the Global Pharmacovigilance Society.



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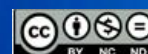
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Available online 1 September 2025

Introduction

Hemoptysis, characterized by the expectoration of blood from the lower respiratory tract, can result from a wide range of causes, including respiratory infections, malignancies, and vascular disorders. While drug-induced hemoptysis is relatively rare, it represents a serious adverse event that warrants attention. Various medications, including anticoagulants and certain antiplatelet agents, have been known to induce hemoptysis through mechanisms such as disrupting coagulation pathways or irritating the respiratory mucosa (Corey, 1990).

Aspirin, a widely prescribed thromboxane (TXA₂) synthesis inhibitor, is a cornerstone in the management of cardiovascular diseases due to its effective antiplatelet properties. By inhibiting TXA₂—a potent platelet activator and vasoconstrictor—aspirin reduces platelet aggregation and prevents thrombus formation. Despite its benefits, this inhibition can lead to bleeding complications, particularly in conditions like myocardial infarction, atherosclerosis, and variant angina (Warner et al., 2011). Additionally, gastritis and peptic ulceration, which are common side effects of chronic aspirin use, increase the risk of gastrointestinal bleeding (Yiannakopoulou, 2011). However, hemoptysis remains an uncommon and underreported adverse effect of aspirin therapy. This case report aims to shed light on this rare occurrence and its implications.

Case Description

A 42-year-old male with a known history of dilated cardiomyopathy and chronic alcohol use was on Ecosprin (Aspirin) 75 mg daily as prophylaxis for ischemic heart disease. The patient presented to the emergency department with complaints of hemoptysis for one day. On examination, his vital signs were stable. Given the presentation, aspirin was immediately discontinued.

The patient was treated with intravenous (IV) Tranexamic Acid (Inj. Pause) 1 gm in 100 ml of Normal Saline, and IV Vitamin K 10 mg stat. The following investigations were conducted: Complete Blood Count (CBC), Random Blood Sugar (RBS), abdominal and pelvic Ultrasound (USG), and a coagulation profile including Prothrombin Time, Activated Partial Thromboplastin Time (aPTT), and INR. Additionally, Troponin I, NT-Pro BNP, and a chest X-ray were performed.

The laboratory results revealed elevated potassium levels (5.8 mmol/L), which was attributed to the concurrent use of Spironolactone, a potassium-sparing diuretic. Spironolactone was subsequently discontinued, and treatment was continued with IV Furosemide 40 mg and oral Dapagliflozin 10 mg. The patient showed significant improvement, and his symptoms subsided. After a few days of observation, he was discharged. The adverse

reaction was classified as "Possible" according to the Naranjo Adverse Drug Reaction (ADR) assessment scale (Naranjo CA, 1981).

Discussion

Aspirin is well-established for its role in the secondary prevention of cardiovascular events through its inhibition of platelet aggregation. Despite its significant benefits, aspirin is associated with a range of adverse effects, including bleeding disorders. Hemoptysis, although rare, is a serious and potentially life-threatening complication that can occur with aspirin use. The underlying mechanism of aspirin-induced hemoptysis likely involves its inhibition of platelet aggregation, which can lead to mucosal bleeding in the respiratory tract (Corey, 1990; Warner et al., 2011).

Murphy et al. have emphasized the evolving landscape of aspirin's role in cardiovascular disease prevention, noting that the introduction of newer antiplatelet agents has prompted a reassessment of aspirin's risk-benefit profile, particularly concerning its bleeding complications (Murphy et al., 2021). Song et al. reported a case where aspirin, used as an alternative to warfarin, resulted in hemoptysis, highlighting the need for meticulous monitoring when substituting or combining antithrombotic therapies (Song et al., 2015). Additionally, Yiannakopoulou et al. discussed how interactions with other drugs, such as diclofenac, can exacerbate the risk of hemoptysis in patients on aspirin therapy (Yiannakopoulou, 2011).

According to the World Health Organization (WHO) causality assessment scale, the hemoptysis observed in this case is classified as "Possible," reflecting its temporal association with aspirin use and the exclusion of other potential causes (The Uppsala Monitoring Center, 2024). Effective management of aspirin-induced hemoptysis involves the immediate discontinuation of aspirin, supportive care, and specific treatments like tranexamic acid to control bleeding. Preventive measures include regular monitoring of patients on long-term aspirin therapy, especially those with additional bleeding risk factors (Park, 2021).

Conclusion

While aspirin remains a key therapeutic agent in cardiovascular disease management, it can lead to severe adverse effects such as hemoptysis. Timely recognition and management of this rare complication are vital for ensuring patient safety. Documenting and reporting such cases enhances the understanding of aspirin's risk profile and helps inform future clinical practices.

Acknowledgement

We acknowledge support extended by staff and management of Department of Pharmacology and

General Medicine, CDSIMER, Devarakaggalahalli, Ramanagara District, Karnataka.

Funding

No funding received for this project.

Conflict of Interest

Authors declared no conflict of interest.

References

Corey R. Hemoptysis. In: Walker HK, Hall WD, Hurst JW, editors. Clinical Methods: The History, Physical, and Laboratory Examinations. 3rd edition. Boston: Butterworths; 1990. Chapter 39. Available from: <https://www.ncbi.nlm.nih.gov/books/NBK360/>

Murphy E, Curneen JMG, McEvoy JW. Aspirin in the Modern Era of Cardiovascular Disease Prevention. *Methodist Debaque Cardiovasc J*. 2021 Sep 24;17(4):36. PMID: 34824680; PMCID: PMC8588762.

Naranjo CA, Busto U, Sellers EM, et al. A method for estimating the probability of adverse drug reactions. *Clin Pharmacol Ther*. 1981 Aug;30(2):239-45.

Park JA. Treatment of Diffuse Alveolar Hemorrhage: Controlling Inflammation and Obtaining Rapid and Effective Hemostasis. *Int J Mol Sci*. 2021 Jan 14;22(2):793. doi: 10.3390/ijms22020793. PMID: 33466873; PMCID: PMC7830514.

Song W, Cao J, Xu Y, Han Z, Wen H, Cui X. Hemoptysis due to aspirin treatment alternative to warfarin therapy in a patient with atrial fibrillation. *Intern Med*. 2015;54(20):2615-8. doi:10.2169/internalmedicine.54.4695. Epub 2015 Oct 15. PMID: 26466698.

The Uppsala Monitoring Center. The use of the WHO-UMC system for standardized case causality assessment. Accessed on 18-Aug-2024. Available from: <https://www.who.int/docs/default-source/medicines/pharmacovigilance/whocausality-assessment.pdf>

Warner TD, Nylander S, Whatling C. Anti-platelet therapy: cyclo-oxygenase inhibition and the use of aspirin with particular regard to dual anti-platelet therapy. *Br J Clin Pharmacol*. 2011 Oct;72(4):619-33. doi: 10.1111/j.1365-2125.2011.03943.x. PMID: 21320154; PMCID: PMC3195738.

Yiannakopoulou EC. Hemoptysis under diclofenac and antiplatelet doses of aspirin. *Pharmacology*. 2011;87(1-2):1-4. doi: 10.1159/000321728. Epub 2010 Dec 8. PMID: 21150234.