Case Report

Bull Emerg Trauma 2026;14(1):44-47.

Bulletin of Emergency And Trauma

Spontaneous Sublingual Hematoma Caused by Warfarin Toxicity: A Case Report

***Payam Emami*[1], *Moiheddin Barzegar*[2]*, *Mohammad Azad Majedi*[3], *Darab Zohri*[4]**

[1]*Department of Emergency Medical Sciences, Faculty of Paramedical Science, Kurdistan University of Medical Sciences, Sanandaj, Iran*
[2]*Department of Laboratory Sciences, Faculty of Paramedical Sciences, Kurdistan University of Medical Sciences, Sanandaj, Iran*
[3]*Department of Anesthesiology, Faculty of Medicine, Kurdistan University of Medical Sciences, Sanandaj, Iran*
[4]*Department of Emergency Medicine, Faculty of Medicine, Kurdistan University of Medical Sciences, Sanandaj, Iran*

***Corresponding author:** *Moiheddin Barzegar*
Address: Department of Laboratory Sciences, Faculty of Paramedical Sciences, Kurdistan University of Medical Sciences, Sanandaj, Iran. **Tel:** +98 9188885440; **e-mail:** m.barzegar8@muk.ac.ir

Received: November 09, 2025
Revised: February 07, 2026
Accepted: February 10, 2026

ABSTRACT

Objective: Anticoagulation therapy is an exceptionally effective approach for preventing thromboembolic events, including both primary and secondary occurrences that can significantly affect patient health. Among the range of anticoagulants available for clinical use, warfarin is particularly prominent, having gained extensive recognition and acceptance within the medical field for its demonstrated efficacy in treating coagulation disorders. One of the main adverse effects linked to warfarin administration is the heightened risk of bleeding, which can present in various forms. However, it is important to note that sublingual hematoma remains a relatively rare complication, though it has the potential to cause serious airway obstruction if it occurs. In situations where a patient shows symptoms of an unstable airway due to such complications, performing an urgent surgical procedure, which may involve interventions such as tracheostomy—to restore airway patency and ensure sufficient ventilation is typically recommended.
Case Presentation: This report outlines a clinical case involving a 69-year-old male patient who developed a sublingual hematoma as a direct result of warfarin therapy, which subsequently led to airway obstruction.
Conclusion: Sublingual hematoma is a rare but potentially life-threatening complication of anticoagulation therapy. Early recognition, prompt airway management, and rapid reversal of coagulopathy using available resources are critical to preventing fatal airway obstruction in the emergency setting.

Keywords: Sublingual; Hematoma; Warfarin.

Please cite this paper as:
Emami P, Barzegar M, Azad Majedi M, Zohri D. Spontaneous Sublingual Hematoma Caused by Warfarin Toxicity: A Case Report. *Bull Emerg Trauma*. 2026;14(1):44-47. doi: 10.30476/beat.2026.106003.1580.

Introduction

Anticoagulation is highly effective for both primary and secondary prevention of thromboembolic events. Warfarin, the most frequently prescribed oral anticoagulant, acts as a potent vitamin K antagonist by binding to the vitamin K 2,3-epoxide reductase, effectively blocking the activity of vitamin K-dependent factors II, VII, IX, X, as well as protein C and S [1, 2]. Regular monitoring of serum warfarin

levels is conducted with the aid of the international normalized ratio (INR), with a desired range of 2-3 for patients with atrial fibrillation (AF) and venous thromboembolism (VTE), and 2.5-3.5 for individuals with mechanical heart valves [1, 3]. Although rare, excessive anticoagulation can lead to a sublingual hematoma, a complication that bears resemblance to the severe form known as Ludwig's angina, which affects the submaxillary space and subsequently involves the sublingual and submental spaces [3]. This condition can cause injury to the floor of the mouth and obstruct the airway. Failure to promptly recognize the early stages of a sublingual hematoma can result in potentially fatal consequences [4]. In this report, we present a case of sublingual hematoma that arose as a secondary effect of warfarin therapy.

Case Presentation

A 69-year-old man with a history of mitral valve replacement (MVR) and coronary artery bypass graft (CABG) surgery, currently taking warfarin, arrived at the emergency department (ED) with a sublingual hematoma that had begun 6 hours prior. The hematoma caused dysphasia and dyspnea. He had increased his warfarin dosage from 5 mg to 10 mg two weeks earlier. He denied any trauma to the area and did not have any associated symptoms such as epistaxis, melena, or hematuria.

Timeline of events in the ED

Time 0: Patient arrived at the ED with dyspnea and dysphagia.

Time +10 min: Initial assessment performed; intravenous (IV) access established; blood samples sent; sublingual hematoma suspected.

Time +20 min: Vital signs recorded: blood pressure (BP) 149/97 mmHg, heart rate (HR) 91/min, respiratory rate (RR) 17/min, temperature 37.2°C, SpO_2 95%.

Time +30 min: Physical examination revealed a bloody sublingual hematoma extending posteriorly to the tongue base and overlying the supraglottis; otherwise, the examination was normal (Figure 1).

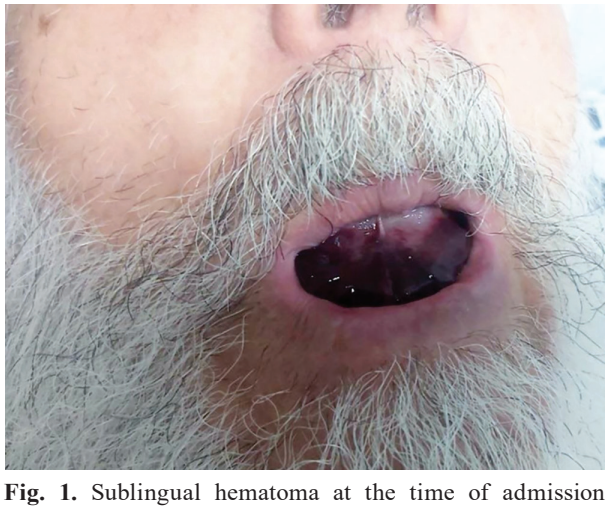

Fig. 1. Sublingual hematoma at the time of admission

Time +40 min: Laboratory results showed a prothrombin time (PT) of more than 60 seconds, an activated prothrombin time (aPTT) of 55 seconds, and an International normalized ratio (INR) of 6, all of which were prolonged. Based on the clinical presentation, physical examination, and elevated INR, the patient was diagnosed with a sublingual hematoma secondary to warfarin toxicity.

Time +50 min: Four units of fresh frozen plasma (FFP) and 10 mg IV vitamin K were administered.

Time +60 min: The patient developed worsening respiratory distress and SpO_2 dropped.

Time +65 min: Rapid sequence intubation (RSI) was planned with surgical airway backup. When evaluating mouth opening using the 3-3-2 rule, the patient could not open his mouth sufficiently to accommodate three of his own fingers between the upper and lower incisors. Therefore, due to the small mouth opening and a Mallampati class III score (only a minimal portion of the oropharyngeal wall was visible), appropriate preparations were made in case the patient encountered difficulty during intubation. However, during the intubation process, the patient experienced oral bleeding, which disrupted the view of the vocal cords. Despite repeated suction attempts, the endotracheal intubation was unsuccessful.

Time +70 min: Two attempts at direct laryngoscopy using a Macintosh blade were unsuccessful due to oral bleeding. A supraglottic airway (i-gel and LMA) was considered but not used because of rapid deterioration.

Time +75 min: An emergency formal cricothyroidotomy was performed by the ED physician with interventional support, successfully securing the airway. The patient's sublingual hematoma extended posteriorly to the tongue base and overlying the supraglottis, creating significant anatomic distortion, which made cricothyroidotomy technically challenging and riskier. Adequate surgical support and equipment were immediately available in the ED, allowing for a safe and controlled tracheostomy.

Time +90 min: The patient was stabilized and transferred to the intensive care unit (ICU) for further care.

The patient was discharged with a tracheostomy and advised to return 2 weeks later. Upon re-evaluation after 2 weeks, the patient's vital signs were completely stable, and an INR 2.5 was maintained. Following a computed tomography (CT) scan of the head and neck, consultation with an ear, nose and throat (ENT) specialist, and a bronchoscopy performed by an interventionist. The patient was selected for decannulation using a multi-stage exit technique, and the tracheotomy tube was removed. One week later, the patient was seen again and did not experience any breathing difficulties. No symptoms of stridor or similar problems were observed.

Discussion

Anticoagulation therapy is widely used in patients following cardiac surgery, including mechanical valve replacement, and to prevent thromboembolic events in atrial fibrillation [5]. Warfarin is a common oral anticoagulant in these settings. While bleeding complications are relatively common in genitourinary, gastrointestinal, cutaneous, central nervous system (CNS), nasal, penile, or retroperitoneal sites, airway-threatening hemorrhage such as sublingual hematoma is rare but potentially fatal [5]. Major bleeding, which encompasses intracranial hemorrhage and bleeding that results in death or hospitalization, has been documented in 1.2% to 8.1% of patients per year during long-term warfarin treatment [3]. However, in rare cases, warfarin can cause bleeding that obstructs a patient's airway. The severity and risk of hemorrhage are strongly correlated with INR levels, with a marked increase observed when the INR exceeds 4.5 [6].

Sublingual hematoma is an exceedingly rare and unexpected complication, which can be quite distressing. It occurs when there is bleeding beneath the mucosal lining, usually triggered by a minor injury. The ability to identify this condition requires a vigilant mindset and a thorough understanding of the patient's medical history. Sublingual hematoma often develops swiftly, rapidly expanding to affect nearby structures, such as the supraglottic larynx. Patients primarily experience throat discomfort, excessive saliva production, difficulty in swallowing, and changes in their voice [7-9]. Emergency physicians should maintain a high index of suspicion for sublingual hematoma in anticoagulated patients presenting with: rapid tongue or floor-of-mouth swelling, dysphagia, drooling, or voice changes, dyspnea or stridor, recent warfarin dose changes or elevated INR. Prompt bedside assessment of airway patency is critical, as the hematoma can expand rapidly, potentially obstructing the supraglottic airway. Early recognition allows timely preparation for airway intervention before life-threatening compromise occurs.

Airway management should be planned and stepwise, considering that instrumentation can worsen bleeding. Emergency physicians should assess airway anatomy and difficulty using bedside rules (e.g., 3-3-2, Mallampati), prepare for advanced airway adjuncts such as video laryngoscopy or supraglottic devices, and consider early surgical airway if intubation is likely to fail or anatomy is distorted. Both invasive procedures, such as cricothyroidotomy or tracheostomy, as well as noninvasive techniques such as orotracheal intubation, were utilized to achieve definitive stabilization of the patient's airway.

Patients who have a sublingual hematoma and are currently taking warfarin should receive counseling regarding the possibility that their condition may be the outcome of an interaction between a drug or food and their anticoagulation treatment [3, 7]. The fact that they have previously had good control of their INR levels does not eliminate the possibility that excessive anticoagulation has occurred due to interactions between warfarin and medications such as protein-binding agents (for example, sulfonamides) and agents that hinder warfarin metabolism (e.g., ciprofloxacin, omeprazole, and ethanol) [3, 10].

In numerous instances of sublingual hematoma caused by warfarin, the approach to treatment has predominantly been conservative. This approach involves rectifying the coagulopathy through the administration of vitamin K and either FFP (the method most commonly employed) or coagulation-factor concentrates [1, 6, 11]. Although the suggested dosage of prothrombin complex concentrate (PCC) is 50 units per kilogram for patients with an INR exceeding 6.0 [3], the utilization of FFP was resorted to due to unavailability of prothrombin complex. Life-threatening bleeding caused by oral anticoagulants should be addressed immediately by using FFP to reverse it, after which vitamin K should be administered. FFP contains active vitamin K-dependent coagulation factors, which can effectively counteract the coagulopathy caused by oral anticoagulants in the majority of patients. Normally, around 15 mL/Kg of FFP should be sufficient to reverse coagulopathy [1, 4, 6]. Although PCC is the preferred agent for emergent reversal of warfarin toxicity, it was unavailable in our ED. FFP combined with intravenous vitamin K was successfully used to correct coagulopathy. This approach demonstrated a practical and generalizable strategy for resource-limited emergency settings.

In summary, sublingual hematoma is a seldom encountered yet significant possibility in individuals undergoing anticoagulation therapy who present with symptoms related to the upper aerodigestive system. In such cases, prompt and decisive interventions for airway management play a vital role in the emergency department. In parallel with airway management, rapid correction of anticoagulation is essential. Although PCC is preferred, FFP and intravenous vitamin K can effectively reverse warfarin toxicity in most emergency settings, particularly where PCC is unavailable. Emergency physicians should be aware of institutional resources and limitations in order to act decisively.

Declaration

Ethics approval and consent to participate: The study was approved by the Ethics Committee of Kurdistan University of Medical Sciences (IR.MUK.REC.1403.333), and written informed consent was obtained from the patient.

Consent for publication: All authors have read and approved the final manuscript and consent to its publication in the journal.

Conflict of Interest: The authors declare that they have no conflict of interest.

Funding: This research received no specific grant from any funding agencies in the public, commercial, or non-profit sectors.

Data availability: Not applicable.

Authors' Contribution: PE: Drafted the manuscript; MB: Supervised; MAM: Drafted the manuscript and collected data; DZ: collected data. All authors read and approved the final manuscript.

Acknowledgment: The authors would like to express their gratitude to the patient and his family as well as emergency department staff of Kowsar Hospital.

References

1. Adhikari A, Sharma S, Ghimire N, Mainali G, Yadav SK, Rajkarnikar R. Spontaneous sublingual hematoma secondary to warfarin therapy—A rare complication. *Clin Case Rep*. 2022;**10**(12):e6739.
2. Berthelsen RE, Tadbiri S, Rosenstock C. Spontaneous sublingual haematoma in a patient treated with warfarin. *Acta Anaesthesiol Scand*. 2013;**57**(4):530-1.
3. Cashman E, Shandilya M, Amin M, Hughes J, Walsh M. Warfarin-induced sublingual hematoma mimicking Ludwig angina: conservative management of a potentially life-threatening condition. *Ear Nose Throat J*. 2011;90(2):E1.
4. de Moraes HHA, de Santana Santos T, Camargo IB, de Holanda Vasconcellos RJ. Sublingual hematoma after usual warfarin dose. *J Craniofac Surg*. 2013;**24**(5):1858-9.
5. Ghosh SK, Majumder B, Agarwal M, Rudra O. Spontaneous sublingual hematoma due to warfarin: An emergency presenting to the dermatologist. *Indian J Dermatol Venereol Leprol*. 2016;**82**(4):432-3.
6. Bapat VN, Brown K, Nakas A, Shabbo F. Retropharyngeal hematoma—a rare complication of anticoagulant therapy. *Eur J Cardiothorac Surg*. 2002;**21**(1):117-8.
7. Bektas F, Soyuncu S. Warfarin induced sublingual hematoma: A rare complication of anticoagulant therapy. *Journal of Acute Disease*. 2012;**1**(2):154-5.
8. Pathak R, Supplee S, Aryal MR, Karmacharya P. Warfarin induced sublingual hematoma: a Ludwig angina mimic. *Am J Otolaryngol*. 2015;**36**(1):84-6.
9. Pelman A, Deere J, Schneider K, Van Heukelom J. Spontaneous epiglottic hematoma secondary to direct oral anticoagulant. *Am J Emerg Med*. 2022;**59**:216.e7-. e9.
10. Ashraf A, Bannon M, Smith C, Kaushik P, Marak C. Upper airway hematoma: An unusual presentation of acute upper airway obstruction. *Respir Med Case Rep*. 2022;**36**:101613.
11. KARS A, ATALAY F, TOPAL K. Laryngeal and Sublingual Hematoma Causing Upper Airway Obstruction Due to the Use of Warfarin. *Journal of Ear Nose Throat and Head Neck Surgery*. 2022;**30**(1):53-6.