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RESEARCH ARTICLE

WHEN ANTICOAGULANTS LEAD TO A RESPIRATORY THREAT: A RARE ANTICOAGULANT-INDUCED SUBMANDIBULAR HEMATOMA CASE

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Abstract

Submandibular floor hematomas are rare but potentially life-threatening complications, often linked to anticoagulant therapy, coagulation disorders, trauma, or dental interventions. Spontaneous idiopathic hematomas, sometimes attributed to severe hypertension, have also been reported. We present the case of a 62-year-old woman with a history of mitral valve replacement and atrial fibrillation, treated with oral anticoagulants (Sintrom), who developed an idiopathic submandibular hematoma. The patient, who also had hypertension and diabetes, presented with a significant swelling in the floor of the mouth, causing elevation of the tongue, mild respiratory discomfort, dysphagia, and dysphonia. There was no clear trigger for the hematoma. Immediate management included oxygen therapy, antibiotics, and a comprehensive hemostatic workup, with consultation from cardiology and intensive care. Despite the severity of the hematoma, a tracheostomy was not required, in contrast to other cases reported in the literature where airway compromise necessitated more invasive interventions. This case underscores the importance of prompt recognition and multidisciplinary management of such rare complications, as well as the role of anticoagulant therapy in increasing the risk of severe hemorrhagic events.

Introduction:-

The submandibular floor hematoma, also known as pseudo-Ludwig's phenomenon, is a rare condition characterized by non-infectious upper airway obstruction due to blood accumulation in the sublingual and submandibular spaces [1,2]. It often arises in the context of coagulation disorders, trauma, dental procedures, or anticoagulant use [3]. Although spontaneous hematomas without an identifiable cause are rare, some cases have been linked to factors such as severe hypertension [4,5].

In severe cases, a submandibular hematoma can compromise the airway, requiring invasive interventions like intubation or tracheostomy [1,6]. However, less severe cases may be managed conservatively, as illustrated by the case presented in this article, where no tracheostomy was required despite significant swelling [7].

Currently, there is no consensus on the optimal management of anticoagulant-related submandibular hematomas, making it crucial to review both the literature and individual case outcomes to refine treatment strategies [8,9].

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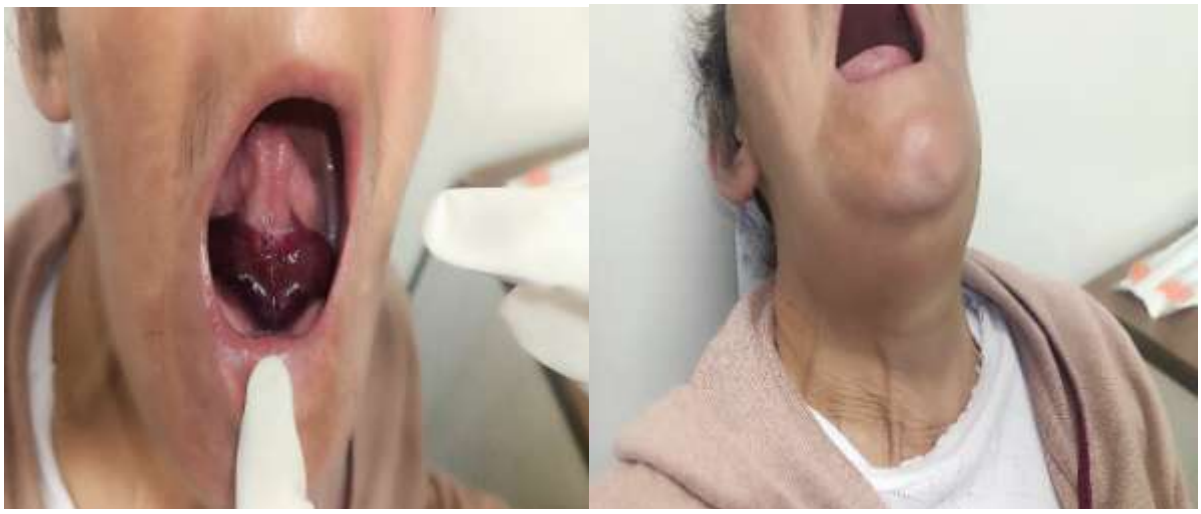
Case report :

We report the case of a 62-year-old woman who developed a submandibular hematoma in the absence of any clear precipitating factors. The patient had a medical history of mitral valve replacement performed three years prior and was currently being treated with oral anticoagulants (Sintrom) for atrial fibrillation. She also had a history of hypertension and diabetes.

The patient presented to the emergency department in March 2024 with significant swelling of the submandibular floor. She was experiencing mild respiratory discomfort, dysphagia, and dysphonia. There was no clear history of trauma or recent dental procedures that could explain the hematoma.

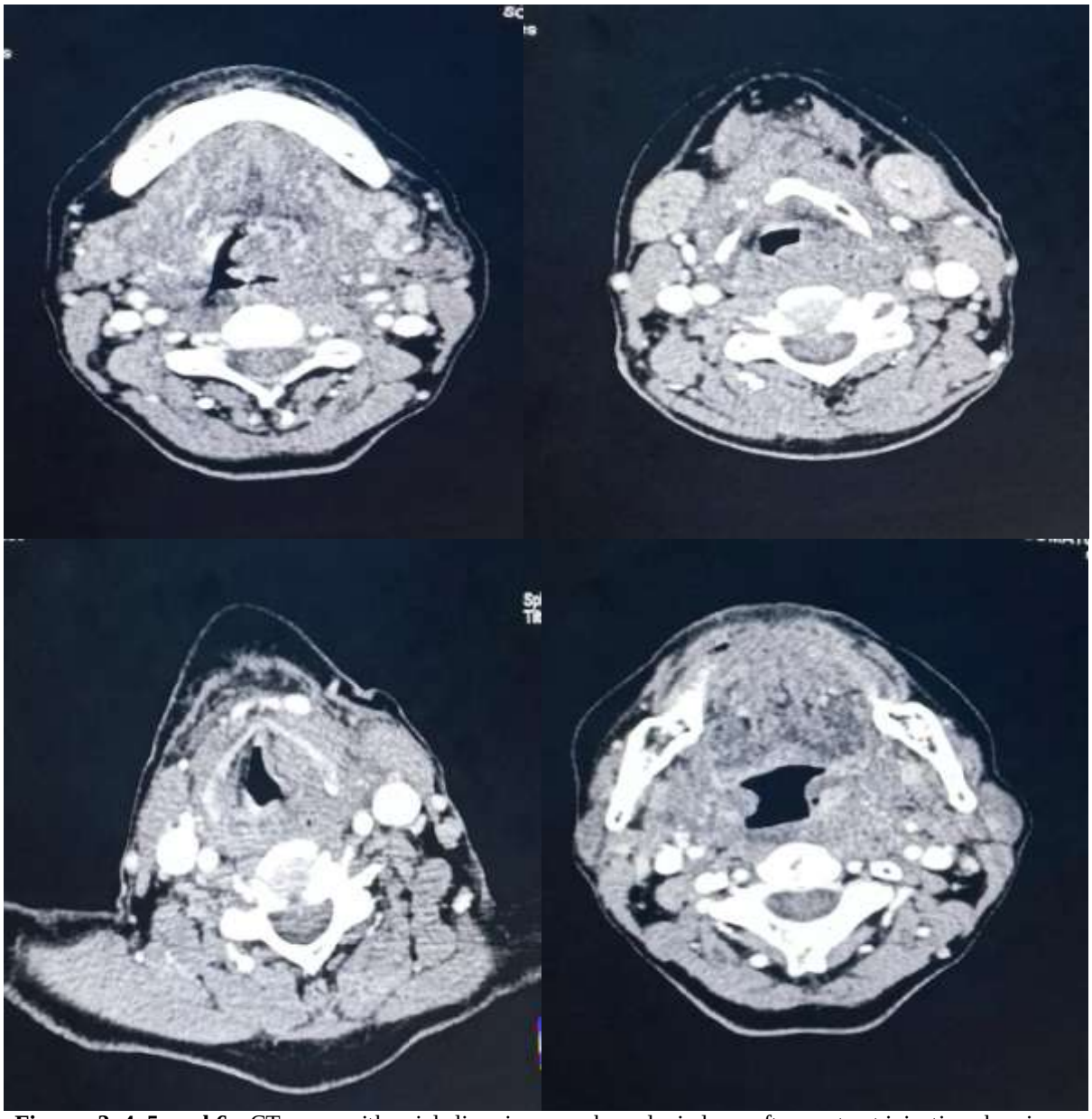
Upon admission, the patient was calm, afebrile, and well-oriented to time and place. She exhibited no signs of respiratory distress, with a respiratory rate within normal limits and oxygen saturation of 97%. Her blood pressure was 130/80 mmHg. On clinical examination, a right-sided cervical swelling was noted, and a bluish hematoma was visible in the oral cavity, which pushed the tongue upward and backward, limiting its forward movement. This was associated with dysphagia, a guttural voice, and mild respiratory discomfort. Additionally, the patient reported increased salivation (hypersalivation).

A flexible fiberoptic examination revealed a prominent, violet-colored submucosal thickening on the left side of the pharynx, causing a significant deviation of the pharyngeal wall to the right. This was associated with a considerable narrowing of the retro-basal lingual space. (Figures 1, 2)



Figures 1-2:- Images showing the submandibular hematoma at the time of the patient's admission and the significant cervical edema.

An urgent computed tomography (CT) scan of the cervical region was performed, revealing a laryngeal hematoma with associated edema, causing narrowing of the pharyngolaryngeal airway. (Figures 3, 4, 5, 6). Fortunately, the airway remained patent, and there were no signs of severe respiratory compromise.



Figures 3, 4, 5, and 6:- CT scans with axial slices in parenchymal windows after contrast injection showing a laryngeal hematoma with significant associated edema, causing narrowing of the pharyngolaryngeal airway, which remains patent.

Given the patient's anticoagulant therapy, the cardiology team advised withholding her evening dose of anticoagulants (AVK) for six days, with regular monitoring of the international normalized ratio (INR). Hemostatic workup was completed, and a multidisciplinary approach involving cardiology and intensive care was initiated, with close monitoring of respiratory status.

Over the course of the following days, the patient's condition improved significantly. There was a marked reduction in the volume of the hematoma, accompanied by resolution of dysphagia and dysphonia. The patient remained stable throughout her hospital stay, and no invasive airway interventions were required.

Discussion:-

The submandibular hematoma, although rare, is becoming more frequently reported due to the increasing prevalence of dental implants, oral cancer surgeries, and trauma. This condition can arise from multiple factors, which can be categorized into local and systemic causes.

Local causes include iatrogenic factors such as detachment of the lingual flap during oral surgeries, the placement of symphyseal dental implants [1], mandibular osteotomies, and dental extractions [2]. Trauma, including mandibular fractures or direct injury to the floor of the mouth, is another significant contributing factor [3].

Systemic causes are often related to coagulation disorders, hemorrhagic fever, and therapeutic interventions, such as thrombolysis or the use of anticoagulants [4,5].

In our case, the patient was on long-term oral anticoagulant therapy with an anti-vitamin K drug (Sintrom) for atrial fibrillation and a mechanical mitral valve replacement. This factor likely contributed to the spontaneous hematoma. Several reports in the literature support that anticoagulation therapy increases the risk of hematoma formation, especially in patients with underlying medical conditions like heart disease or hypertension [6,7].

The clinical presentation of submandibular hematomas can be highly variable, ranging from mild symptoms to severe airway obstruction. Common symptoms include dysphagia, dysphonia, hypersalivation, and cervical edema, which may necessitate urgent medical intervention. In more severe cases, these hematomas can obstruct the airway, leading to life-threatening complications and requiring immediate procedures such as intubation or tracheostomy [1,6].

In contrast, our patient experienced only mild respiratory discomfort and did not require invasive interventions. This highlights the spectrum of severity observed in such cases and the importance of individualized management approaches [7,8].

Diagnostic workup often includes imaging techniques such as CT or MRI to assess the extent of the hematoma and its potential to compromise the airway. A CT scan of our patient's cervical region showed significant laryngeal edema and a submandibular hematoma causing narrowing of the pharyngolaryngeal space, though the airway remained patent. Similar findings were noted in other reports, where imaging played a crucial role in determining the severity of the hematoma and planning the appropriate management strategy [9]. Flexible fiberoptic laryngoscopy is another useful tool for assessing airway patency and guiding treatment [10].

The management of submandibular hematomas depends on the severity of the symptoms and the underlying cause. In severe cases with airway compromise, emergency procedures such as intubation or tracheostomy may be necessary [1,6]. However, as in our case, less severe hematomas can often be managed conservatively. The patient received oxygen therapy, antibiotics, and careful monitoring of her respiratory status. This conservative approach has been documented in several studies, where less invasive management resulted in favorable outcomes without the need for surgical intervention [10,11].

For patients on anticoagulants, management strategies include temporarily stopping or adjusting the anticoagulant dose to prevent further bleeding. In our patient, the decision was made to withhold the evening dose of Sintrom for six days, and this led to a significant reduction in the hematoma size. Several studies support this approach, noting that a careful adjustment of anticoagulation therapy is crucial in managing anticoagulant-related hematomas [12,13]. Reversal agents or hemostatic measures may be needed in more severe cases, but these were not required in our case.

Surgical intervention may be indicated in patients with large, progressive hematomas or in those who develop persistent airway compromise despite conservative measures. Surgical options include hematoma drainage, hemostatic agent application, and, in some cases, reoperation to control bleeding [14,15].

Fortunately, our patient did not require such procedures, as her condition improved with conservative management and close monitoring.

Conclusion:-

Although submandibular hematomas are rare, they represent a significant clinical challenge, particularly in patients receiving anticoagulation therapy. Management should be tailored to the individual patient's condition, with careful consideration of the severity of symptoms, the underlying cause, and the risk of airway obstruction. Our case demonstrates the importance of a multidisciplinary approach and highlights the potential for successful conservative management in appropriately selected patients.

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