

Point-of-care Ultrasound in Lingual Hematoma

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Abstract

Isolated tongue hematoma following direct trauma to face is not a common finding. It can cause life-threatening airway obstruction and needs prompt diagnosis and early intervention. We report the case of a 40-year-old male who presented to our hospital with a large tongue swelling after a fall. Bedside point-of-care ultrasound (POCUS) of the tongue revealed a hematoma. This case highlights the use of POCUS for early diagnosis of tongue hematomas.

Keywords: Airway, lingual artery, point-of-care ultrasound, tongue hematoma

INTRODUCTION

Tongue hematoma secondary to lingual artery bleed is a common presentation following seizures, in patients on anticoagulants or postthrombolysis. We report a case of tongue hematoma following direct trauma to the face.

CASE REPORT

A 40-year-old male arrived in the emergency room of our trauma center with a history of fall from stairs about 4 h back. He presented with the complaints of swelling of the tongue with difficulty in mouth closure and drooling of saliva. On arrival, his airway seemed to be potentially threatened due to the swollen tongue and oral secretions drooling from the angle of mouth [Figure 1]. There was no other visible external injury on the face. The probable mechanism thought was tongue bite after the fall. Oral suction was done, and chin-lift maneuver was done to maintain the patency of airway. His respiratory rate was 22/min with no obvious distress or stridor and was maintaining 99% saturation on room air. Pulse rate was 110/min and blood pressure was 145/100 mmHg. He was mentally alert with a Glasgow Coma Scale score of 15. Chest compression and pelvic compression tests were negative, and extended-focused assessment with sonography in trauma was also negative. An immediate bedside ultrasound of the swollen tongue was done using a pediatric linear probe (13 MHz frequency, Sonosite M-Turbo(r) ultrasound system),

which revealed a hypoechoic shadow suggestive of a large hematoma in the tongue [Figure 2]. The probe was kept in the midline in sagittal orientation over the tongue. The patient had no history of coagulopathy nor was he taking any anticoagulants. As the patient was stable, he was immediately shifted for a contrast-enhanced computed tomography (CT) neck with CT angiography. The scans revealed a large hematoma with contrast extravasation from the right lingual artery with pseudoaneurysm [Figures 3 and 4]. Laboratory work showed a normal platelet count and coagulogram. As the lingual swelling did not increase further as measured by serial clinical examinations and point-of-care ultrasound (POCUS), conservative management was planned. The patient was shifted to the intensive care unit and in view of the potentially threatened airway, nasal intubation was performed. He was started on intravenous steroids and managed conservatively. The swelling subsided gradually; the patient was extubated, was started on liquid diet, and was discharged on day 3 after the event.

DISCUSSION

Acute tongue enlargement is a rare but recognized airway hazard resulting from trauma, vascular anomalies, or coagulopathy and also due to edema, infarction, and

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Figure 1: Swollen tongue at the time of presentation to emergency



Figure 2: Tongue hematoma as visualized on point-of-care ultrasound



Figure 3: Contrast-enhanced computed tomography face with neck sagittal view showing large swollen tongue with contrast extravasation from the right lingual artery (blue arrow)



Figure 4: Contrast-enhanced computed tomography face showing contrast extravasations on the right side of the tongue (yellow arrow)

infection.^[1,2] Tongue hematoma which develops post trauma can be due to road traffic accident,^[3] dental surgery,^[4] and tongue bite during seizure.^[5] Tongue is a vascular structure supplied by the branches of lingual artery, which can result in significant bleeding and hematoma formation.^[6] For an emergency physician (EP), the main focus in such cases is early detection and airway management.

Usually, ultrasound as a modality for diagnosing lingual hematoma has not been described, but in our case, we decided to use bedside POCUS as a diagnostic tool. On an ultrasound, hematomas are generally hypoechoic with a variable degree of internal linear echoes, but may be hyperechoic in the acute phase.^[7] Furthermore, if there is active bleeding in hematoma, Doppler will show internal echoes.^[7] This was a novel application of POCUS in a condition with potentially significant morbidity and mortality. In the setting of trauma, the most common differential will be a hematoma, but a bedside ultrasound can help in quickly ruling out an intraoral foreign body which can be missed due to swelling, thus

limiting a complete oral examination. This can be a great tool in the hands of EP for the early evaluation of lingual hematomas, especially in a resource-poor setting where immediate availability of CT angiography is not there. In cases where patients complain of pain or change in voice, a covert swelling can be quickly identified with ultrasound, thus anticipating an impending threatened airway. Most cases of tongue hematomas come with a threatened airway and need a nasal intubation to secure their airway.^[6,8,9] Once the airway has been secured, conservative management using corticosteroids and antibiotics has shown a positive result in managing such cases.^[10,11]

CONCLUSIONS

This case highlights the use of POCUS for early diagnosis of tongue hematomas. It can be a valuable modality for triage and decision-making, especially in low-resource settings, and potentially the only modality required if the patient is planned for conservative management, thus avoiding unnecessary radiation exposure.

Declaration of patient consent

The authors certify that they have obtained all appropriate patient consent forms. In the form, the patient has given his consent for his images and other clinical information to be reported in the journal. The patient understands that his name and initials will not be published, and due efforts will be made to conceal identity, but anonymity cannot be guaranteed.

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Conflicts of interest

There are no conflicts of interest.

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