



# Management of Traumatic Partial Tongue Amputation: Case Report

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## Abstract

Partial tongue amputation is a serious complication that can present with pain, inability to articulate and massive intraoral bleeding that could be life-threatening within minutes due to difficulty in controlling the bleeding and shock and the direct threat to the airway. It is a life-threatening challenge for the medical staff. A 52-year-old patient was received after an emergency evacuation following a fall from a vehicle during a military patrol. On clinical examination, he presented with facial trauma with lingual lacerations. The provided care involved addressing any life threatening emergencies, followed by suturing the tissue loss using reconstructive techniques particularly on the tongue. The postoperative period was uneventful, and the tongue regained vitality and normal motion. Tongue trauma treatment must be prompt because it can be life-threatening. Proper management can help restore function.

## Subject Areas

Dentistry

## Keywords

Tongue Trauma, Hemorrhage, Emergency, Rapid Care

## 1. Introduction

The tongue is a muscular organ that is located on the floor of the oropharynx. The tongue is surrounded by mucosa and contains glands, sensory organs, and four pairs of extrinsic muscles.

It plays a vital role in a person's ability to communicate, taste, and intake food through masticating and swallowing. Therefore, injuries to the tongue have a considerable impact on quality of life [1]. Deep tongue injuries can be impressive with

hemorrhages that require rapid treatment [2].

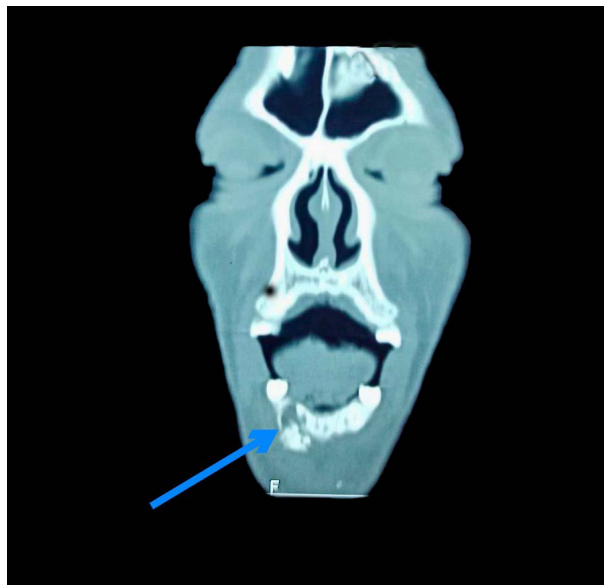
## 2. Case Presentation

A 52-year-old patient with no significant medical history, was received urgently after falling from a vehicle during a patrol in Arlit in the Agadez region (Niger). The patient remained conscious throughout the event and did not report any vomiting or signs of neurological compromise. The clinical examination revealed facial trauma with a laceration of the upper lip. The intraoral assessment found a triple partial amputation of the tongue and complete loss of the anterior mandibular teeth (**Figure 1**).

A maxillofacial computed tomography scan was ordered to eliminate any fracture of the bony bases, which exhibited a mandibular alveolar fracture and also ruled out any cerebral hemorrhaging (**Figure 2**).



**Figure 1.** Intraoral view showing lingual lacerations.



**Figure 2.** Frontal CT Scan section showing a mandibular alveolar fracture.

Surgical management, under local anesthetic using lidocaine with epinephrine, involved the plane-by-plane suturing of the tongue with 4/0 absorbable sutures in the lingual muscles (deep structures) and with 3/0 sutures in the superior and inferior mucosa (**Figure 3**).

An intravenous medication prescription consisting of amoxicillin-clavulanic acid (1 g every 8 h), Celestene (4 mg) and Paracetamol (1 g every 8 h) was administered to the patient for three days, followed by an oral regimen for four days.

The patient was reassessed a few hours after the sutures were placed to confirm that the bleeding had stopped, with follow up after one week, two weeks, one month and six months. The patient had regained full tongue function with good healing (**Figure 4**).



**Figure 3.** Intraoral view after the lingual sutures have been performed.



**Figure 4.** Intraoral view showing good lingual healing after one month.

### 3. Discussion

The tongue constitutes is a musculocutaneous organ situated within the oral cavity, specifically on the floor of the oropharynx. The tongue is surrounded by mucosal tissue and contains numerous glands, sensory receptors, and four pairs of

extrinsic musculatures. The tongue is integral to multiple vital functions, including articulatory movements, gustatory perception, manipulation of ingested material, deglutition, and the production of speech production [2]. Embryologically, tongue development initiates around the fourth week of intrauterine life, with its morphogenesis exerting considerable influence on the configuration of the oral cavity. Embryonic differentiation divides the tongue into anterior and posterior segments [3] [4].

Traumatic injuries to the tongue, such as lacerations, may arise from various etiologies including epileptic seizures, self-inflicted trauma, blunt facial force, or oral trauma during intubation procedures. Such injuries are frequently observed within pediatric populations in acute care settings [1] [5]. Several authors have advocated conservative management for lacerations under 2 cm that are not associated with active hemorrhaging [6] [7]. When surgical intervention is indicated, some recommendations include suturing dorsal injuries and those located along the lateral margins of the tongue. Some authors advocate a layered closure with deep sutures. Additionally, layered closure with deep sutures to ensure optimal tissue approximation [8] [9].

Donat *et al.* [7] specifically recommended suturing wounds exceeding 2 cm or those exhibiting significant bleeding, as exemplified in the present clinical case. Repair techniques are primarily derived from anecdotal evidence, with options including one-, two-, or three-layer closures for through-and-through lacerations. The objective is to secure the closure of the muscular layer to achieve hemostasis [10].

Postoperative management characteristically involves a soft dietary regimen for two to three days. Pharmacologic measures include prescribing analgesics such as, paracetamol (1 g every 8 hours), and chlorhexidine-based mouth rinses administered three times daily. The prescription of antibiotics remains a subject of debate; however, agents (e.g., amoxicillin 2 - 3 g daily) may be considered in cases involving contaminated or soiled wounds [11] [12].

Potential immediate and delayed postoperative complications must be acknowledged. Immediate risks predominantly involve infections and hemorrhagic events, particularly in patients with pre-existing clot formation, which may compromise the airway. Long-term sequelae may include dysphagia, phonatory disturbances, and scarring that could hinder lingual mobility [13]-[15].

#### **4. Conclusion**

The tongue is a muscular organ that plays a vital role in phonation and swallowing. The tongue may be subject to lacerations that do not require sutures in most cases (rich vascularity) except in cases of deep lacerations. Postoperative instructions must be followed to minimize the risk of complications.

#### **Conflicts of Interest**

The authors declare no conflicts of interest.

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