

Dental Management of Oral Self-Injury in a Stroke Patient: Case Report and Literature Review

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Abstract

This study describes a case report of a female stroke patient with an oral self-injury. She was admitted to a palliative care hospital and after two weeks of hospitalization she presented with a severe tongue injury caused by frequent biting. We proposed a course of curative treatment and preventive measures to prevent re-injury. We also present a short literature review of these types of injuries. Even though this is only a case report on self-injury in stroke patients, our approaches were different from those described previously in the literature; we used a new combination of a silicon device and laser therapy to treat this lesion.

Keywords: Oral medicine; Palliative care; Oral-self injury; Dentistry in palliative care

Introduction

Cerebrovascular accidents most frequently occur in patients with existing cardiovascular disease, especially hypertension. An ischemic stroke results from sudden interruption of blood flow as a result of an arterial occlusion, while the rupture of a blood vessel causes hemorrhagic stroke [1]. Overall, the survival and the severity of the ensuing functional deficit depend on the type and the extent of the lesion [2].

Patients with long-term admissions in whom pain perception was lost due to the systemic disease need for oral care [3,4]. Patients normally injure themselves using their teeth, causing finger biting, tongue lacerations and ulcerations to the lips and other areas of the oral mucosa. Furthermore, it is normal to find dental luxation and severe attrition in such patients [5-7].

Self-inflicted oral injuries of organic origin are particularly common in certain diseases, syndromes, and systemic disorders. Patients whose stroke caused cognition loss can present with muscle spasms and pain in their joints [8]. The temporomandibular joint (TMJ) can be compromised and prone to self-injuries as an unconscious behavior [9,10]. These issues can delay wound cicatrization and may cause infection.

We present a case report of a patient who suffered a tongue self-injury. The dental treatment was performed with minimum-risk interventions. An individualized combination of curative treatment with local procedures and the use of a prevention device were carried out.

Case Report

A female patient, had a hemorrhagic stroke at age 51. Five years later she had a second stroke with serious cognitive and motor consequences. She stayed in a general hospital for 2 years and was admitted in to a long-term facility six months before an oral event (described here).

On admission she arrives with oral silicone mouth guards for preventing self-bite injuries. The device was unfortunately lost during the admission process. After a week without it, the patient presented with an ulcerative lesion on the tip of the tongue (Figure 1). Oral evaluation showed normal teeth, gums, lips and buccal mucosa. Her coagulation rates were ok excluding blood related causes.

The ulcer treatment was handled by cleansing the area daily

with saline solution and an application of triamcinolone acetonide. Preventive treatment was carried out 3 days after detection of the lesion with two new silicone mouths guards, one in the upper and other in the low jaw. Oral cleaning procedures such as teeth brushing with low foaming dental cream (Biotene®), tooth flossing, hydration with artificial saliva (Biotene®) was continually done by a dental hygienist twice daily throughout the process.

Low-level laser therapy (LLLT) was used with an irradiance of 45 J per cm² and duration of 33 seconds. It was applied in 3 sites around the lesion and the patient was treated at 2 days intervals, 3 times a week for 15 days. After these procedures, epithelial tissue was re-established as shown in Figure 2 and Figure 3.

Discussion

The sequelae of stroke can cause disability in loss of self perception and this can result in declining oral health which in turn can affect general health and quality of life in nursing home residents and Long Term Acute Care (LTAC) facilities [9,11-14]. The American Dental Association describes medications that affect oral hygiene, agents that alter plaque composition and pH, salivary flow and pH, and taste. There are also agents that cause angioedema, alter tissue pigmentation, cause gingival enlargement, and these can affect hemostasis and alveolar bone [15].

Disabled adults with severe movement disorders need special oral care to provide treatment as necessary [16,17]. Preventive oral health protocols are important in patients with physical impairment, sensory or cognitive deficits that cause loss of independent oral care [18-20].

It has been reported that oral self-injuries are most common in males in the early years of life, and the sites most frequently involved are the lower lip and the tongue. This group concluded that therapeutic approaches in these patients should include psychological and pharmacological treatments, intraoral devices, and surgical procedures

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Figure 1: Tongue lesion at the time of new intra oral device installation

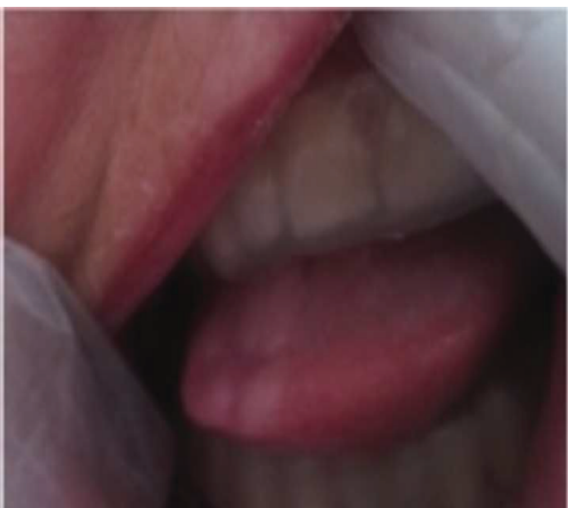


Figure 2: Tongue appearance after 10 days of treatment



Figure 3: Tongue appearance after 60 days of treatment

when necessary [7].

The several case reports of oral self-injury published show that therapies consisting of self-guard devices, tooth extractions, medications and toxin botulinum can be beneficial [7,10,21-27]. We note that even therapy must be individualized and professionals should direct their decisions based on pain relief, removal of infection focus and prevention of new lesions.

We decided to use a conservative approach that was based on a self-guard device. This avoided extraction of the patient's tooth and minimized mutilation.

Oral hygiene is important for oral and general diseases prevention and this must be carefully observed in patients whose disease cause disabilities that prevent the performance of basic self care such as brushing teeth, gargling or spitting. A Cochrane review from 2008 shows that even further research is need in this area, and that staff training can improve oral hygiene in stroke patients. Professionally delivered oral care could improve the oral and general health of this population [28].

Due our partnership with a group of palliative care professionals for cancer patients, we used laser therapy as a curative procedure to complement daily oral hygiene. Although there is no protocol gold standard for laser (dose, power unit and application time), several studies show the benefit of this technique as an auxiliary tool for the treatment of oral mucosa lesions in patients undergoing therapy for cancer treatment [29-31].

Our case report on self-injury in stroke patients is different from previous reports since we used a new combination of therapies to treat this lesion. Further studies are needed.

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