ISSN: 2573-8224

Case Report

Journal of Oral & Dental Health

Palatal Necrotic Ulcer Following Local Anesthesia: A Rare Complication

Adel Bouguezzi[1,2]*, Jade Chagra[1,2], Maroua Garma[1,2], Sameh Sioud[1,2], Hajer Hentati[1,2] and Jamil Selmi[1,2]

[1]*University of Monastir, Faculty of Dental Medicine, Oral Health and Oro-Facial Rehabilitation Laboratory Research (LR12ES11), Monastir, Tunisia*

[2]*Dental Clinic of Monastir, Department of Medicine and Oral Surgery, Monastir, Tunisia*

***Corresponding author**

Adel Bouguezzi, University of Monastir, Faculty of Dental Medicine, Oral Health and Oro-Facial Rehabilitation Laboratory Research (LR12ES11), Dental Clinic of Monastir, Department of Medicine and Oral Surgery, Monastir, Tunisia

Submitted: 22 Apr 2020; **Accepted:** 29 Apr 2020; **Published:** 12 May 2020

Abstract

The everyday practice of dentistry relies heavily on achieving adequate local anesthesia. Even though the safety record of local anesthetic agents is high, complications do occur. Palate is a favorable site for soft-tissue lesions. Various factors such as direct effects of the drug, blanching of the tissues during injection, relatively poor blood supply, and reactivation of the latent forms of herpes can all promote to tissue ischemia and a lesion in the palate. Among various complications, anesthetic necrotic ulcer is a rare and uncommon condition occurring mostly in the hard palate possibly after a local anesthetic infiltration. We report a case of palatal ulceration in a female patient after the administration of a local anesthetic to the right posterior hard palate and follow-up.

Keywords: Anesthetic necrosis, Local anesthesia, Palate, Ulcer

Introduction

Dental anesthesia is an essential act for the smooth running of care. It provides comfort for both the patient and the practitioner. However, in certain situations, dental anesthesia can lead to unexpected complications. The hard palate is a richly vascularized structure, particularly through the greater palatine arteries. A collateral supply is provided by the anastomosis between the ascending palatine artery and the lesser palatine artery [1]. The palatine mucosa is innervated in its posterior part by the greater palatine nerve and in its anterior part by the naso-palatine nerve, collateral to the maxillary branch of the trigeminal nerve [2]. The palatal tissues are sensitive to all factors that could lead to tissue changes due to its firm and adherent nature [3].

Clinical Case

A 22-year-old female patient, in good health, referred to the department of oral medicine and surgery for a hematoma in the palate. Her history revealed that she had received a palatal injection few hours back of 2% lidocaine with 1:100,000 epinephrine in the area of the upper right first premolar when she attended her regular dental practice to have an endodontic treatment of the maxillary second premolar on the right side. The treatment was uneventful, later the patient developed a blister in the region of the palatal infiltration site and was referred to our department.

No sign of allergy to local anesthetics was reported in the previous dental treatments. The intraoral examination revealed a poorly defined borders bluish lesion associated with swelling in the medial part of the hard palate.

The patient was seen and diagnosed with palatal mucosal hematoma (Figure 1) which was managed conservatively with simple finger pressure associated with local antiseptic, analgesic prescription and regular review appointments.

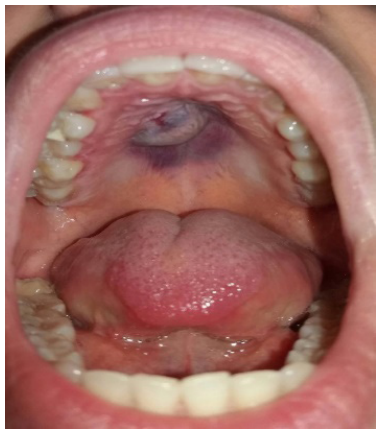

Figure 1: Palatal mucosal hematoma

A further two appointments were arranged for the patient (Figure 2 and 3), the hematoma disappeared and a well-defined ulceration with erythematous margins appeared which was initially 15 mm by 15 mm and decreased to a size that was insignificant. However, the patient was experiencing severe posttraumatic neuralgia which developed at the site of the ulcer during the healing process. The patient reported that the whole experience had left her stressed, affecting her personal and social life and has been advised to have counselling to treat this matter.

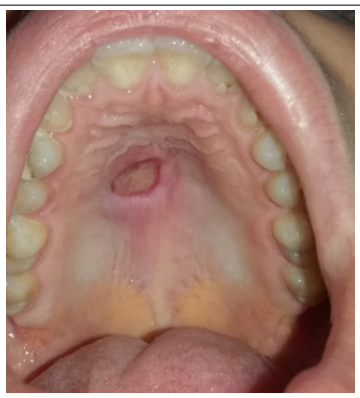

Figure 2: Palatal ulceration with a grayish necrotic slough

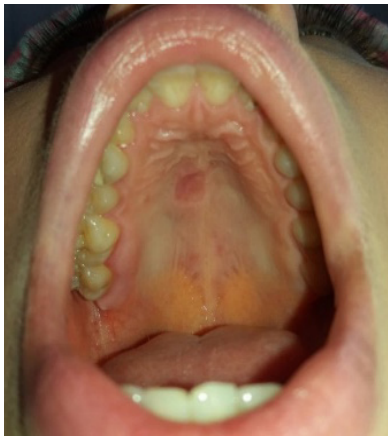

Figure 3: Healing of the ulcer after 2 weeks

Discussion

The palate has a rich blood supply via the greater and lesser palatal arteries which play a role in wound healing and sustaining metabolism by providing oxygen and nutrients. An increase in pressure may provide an explanation into the etiology of such an event, or the absence of a good supply, via vasoconstriction, deprives the tissue of its necessary sustenance resulting in necrosis of the overlying epithelium [4]. The contraction of smooth muscle within the arterial wall during vasoconstriction may lead to transient ischemia of structures distally to the injection site leading to tissue necrosis [5].

It is customary in odontostomatologic anesthesia to add a vasoconstrictor to the anesthetic solution. Indeed, the vasoconstrictor decreases the intravascular passage of the injected product, thereby reducing systemic effects and toxicity and allowing a longer time of action. It also reduces surgical bleeding [3].

Systemic complications may include cardiovascular reactions such as tachycardia, hypertension arrhythmias or tremors, convulsions indicating intoxication due to exceeding the maximum dose have been reported [6,7]. Allergic reactions, although rare, may be observed and may be related to preservatives used in preparations containing adrenaline or to local anesthetics, especially the esters. These allergic reactions can range from a simple eczema to more severe general manifestations such as anaphylactic shock [8].

In our case, the hematoma and ulceration observed on the palate could be explained by the increase of pressure following a rapid and forced injection, an excessive concentration of vasoconstrictor causing hypoxia leading to the accumulation of acid by-products, or trauma caused by repeated injections in the same area responsible for local ischemia [9,10].

Due to the thinness of the palatal mucosa and its adherence to the underlying bone any abrupt change can be a source of complications, which could explain the more frequent occurrence of this type of complication in the palate [7]. Post-anesthetic ulceration is nevertheless characterized by pain that persists for several days and by a relatively long healing time [10].

The management of post-anesthetic ulceration is generally based on close control examinations and the maintenance of strict hygiene by the patient. The prescription is limited to analgesics and/or antiseptics, antibiotics are advised only if the lesion is secondarily infected [6]. In certain instances, a palatal plate or an oral protective paste may also be prescribed to protect the lesion [8].

In our case, we prescribed an analgesic and a local antiseptic and healing was achieved within three weeks. The check-up appointments are of major importance as they allow us to follow the evolution and to intercept a possible complication such as a secondary infection of the lesion. Surgery may be necessary in certain situations where the ulcer has no tendency to heal spontaneously [9].

In order to minimize complications that may occur in the palatal mucosa following local anesthesia, it is advisable to inject the product slowly with controlled pressure, to avoid multiple injections and solutions containing high concentrations of epinephrine. Anesthetic solutions without vasoconstrictors are preferred, especially in the palatal mucosa, because of their effectiveness in obtaining sufficient analgesia and the lesser risk of necrosis [8].

Conclusion

Care should be exercised when a topical or a local anesthetic agent is used. Knowledge of the palatal anatomy coupled with a slow deposition of the anesthetic solution; and a thorough knowledge of dental anesthetic dose will greatly help in minimizing local complications.

References

1. Ranjitha EG, Ramasamy S, Austin RD, Ramya K (2015) Necrotic ulcer on the palate: As sequale of local anesthetic administration: A rare case report. Int J Adv Health Sci 2: 10-13.
2. Sharma U (2017) Palatal ulceration: A local anesthetic complication. Indian J Health Sci Biomed Res 10: 94-96.
3. Jain V, Triveni MG, Tarun Kumar AB, Mehta DS (2012) Role of platelet-rich-fibrin in enhancing palatal wound healing after free graft. Contemp Clin Dent 3: S240-243.
4. Berkovitz B, Moxham B (2002) Head and Neck Anatomy: A Clinical Reference. 1st ed. Martin Dunitz.
5. Schwartz HJ, Sher TH (1985) Bisulfite sensitivity manifesting as allergy to local dental anesthesia. J Allergy Clin Immunol 75: 525-527.

6. Gogna N, Hussain S, Al-Rawi S (2015) Case reports: Palatal mucosal necrosis after administration of a palatal infiltration. Br Dent J 219: 560-561.

7. Carroll MJ (1980) Tissue necrosis following a buccal infiltration. Br Dent J 149: 209-210.

8. Vidisha Gargi, Ravi Prakash Sasankoti Mohan, Nagaraju Kamarthi, Swati Gupta (2017) Palatal Perforation: A Rare Complication of Postanesthetic Necrosis. Contemp Clin Dent 8: 501-505.

9. Gupta R, Garg M, Pawah S, Gupta A (2016) Postanesthetic ulceration of palate: A rare complication. Natl J Maxillofac Surg 7: 86-88.

10. Hartenian KM, Stenger TG (1976) Postanesthetic palatal ulceration. Oral Surg Oral Med Oral Pathol 42: 447-450.