



# Palatal Necrotic Ulcer Following Local Anesthesia: Rare Case Report

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## ABSTRACT:

The aim of this case report was to aware dental practitioners regarding a rare complication after local anesthesia and how to manage this. Infiltration of local anesthetic solution is a common practice in dentistry which involve few complications ranging from mild pain to severe life threatening anaphylactic shock. Necrotic ulcer due to palatal infiltration is a rare complication that occurs few days after the procedure at the site of injection. A case of palatal necrotic ulcer in a female patient was reported that occurs two days after the procedure. Conservative treatment was given for 3 weeks. Healing occurs after 3 weeks and no additional intervention was required.

**KEYWORDS:** Necrotic ulcer, local anesthesia, palatal ischemia.

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## INTRODUCTION

Palatal infiltration is a very common practice in dentistry included in every other dental procedure. Normally, the effect is achieved with no adverse effects but sometimes complications may occur either intraoperatively or postoperatively. These include needle breakage, hematoma, postoperative paresthesia, trismus, infection, edema, tissue necrosis, post anesthetic intraoral lesions as well as life threatening complications such as anaphylactic shock.<sup>1</sup>

Local anesthesia induced palatal necrotic ulcer is a rare complication that may occur due to faulty injection technique which includes traumatic needle penetration, pressurized deposition of anesthetic solution, blanching at the anesthetic site or excessive deposition as well as presence of vasoconstrictor (epinephrine), and the possibility of reactivating the latent forms of a disease process such as herpes.<sup>2,3</sup>

Treatment of such lesion usually includes patient reassurance and conservative management with anesthetic-antiseptic gel and if underlying bone is involved surgical intervention needs to be done.<sup>4</sup> Most of the lesions heal spontaneously within 3-4 weeks with simple conservative management. Ischemia induced palatal ulcers can be avoided or minimized by careful infiltration of local anesthesia and by using anesthetic solution without epinephrine especially for minor surgical cases such as simple extraction.

## CASE PRESENTATION

A 23years female patient reported to the Operative Dentistry Department, Shaheed Zulfikar Ali Bhutto Medical University, Pakistan Institute of Medical Sciences (PIMS), with the complaint of painless lesion on palate two days following tooth extraction under local anesthesia. It was determined that she had received a palatal infiltration of approximately 2 ml. of 2% lidocaine with 1:100,000 epinephrine in the area of the upper left canine region while extracting her tooth. The treatment went well and patient was sent home after giving post-operative instructions and prescribing medication i.e. Tab. Brufen (ibuprofen) 400mg B.D. Patient was medically stable with slightly compromised oral hygiene. On clinical examination, a well-defined palatal ulceration was evident on the hard palate as shown in Fig. 1.

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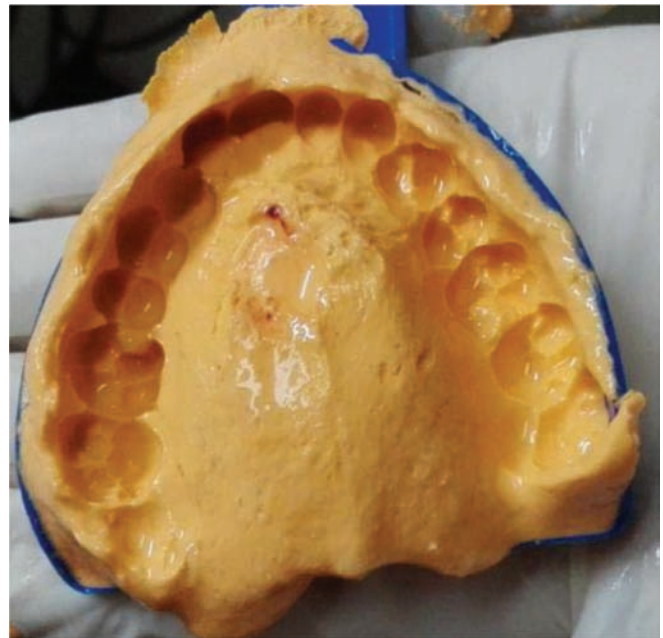
**Fig. (1).** Pre-operative picture showing palatal necrosis.

Ulcer was 10mm in diameter surrounded by hematoma, roughly oval in shape, with well-defined punched out margins, and a depth of 2-3 mm. The central part of the ulcer was yellowish in color and covered by pseudomembranous slough, which on removal revealed a bleeding surface and non-tender on palpation. It was decided to do surgical intervention if not managed with the conservative treatment. Patient was prescribed antiseptic-analgesic gel (Somogel oral topical ointment) and chlorhexidine mouthwash. Patient came after 3days for follow up appointment, ulcer was healed partially with the presence of an erythematous area (Fig. 2).



**Fig. (2).** After 3 days post-treatment; necrosis still present.

We decided to place a COE-Pak dressing over the lesion for rapid healing so impression was taken and sent to laboratory for tray making (Fig. 3).



**Fig. (3).** Impression taken for tray fabrication.

The next day of impression, Coe-Pak dressing was placed (Fig. 4).



**Fig. (4).** Tray with COE-Pak dressing inserted in mouth.

and the patient recalled after 2 weeks for further evaluation. After a period of 3 weeks the lesion was healed completely (Fig. 5) thus, decision was made not to do any surgical intervention.





Fig. (5). Healing 3 weeks post-operatively.

## DISCUSSION

Complications following rapid and pressurized injection of local anesthetic solution containing vasoconstrictor is evident.<sup>1</sup>

In the present case report, infiltration was given in palate which is supplied by greater and lesser palatine arteries that plays an important role in providing oxygen and nutrients to the overlying tissues. Increase in pressure, either because of vasoconstrictor or due to poor faulty technique deprives the tissues of its necessary nourishment resulting in necrosis of the overlying epithelium. During vasoconstriction, contraction of smooth muscles within the arterial wall may lead to transient ischemia of structures at the injection site leading to tissue necrosis. Thus, epinephrine contained in local anesthetics can be a cause of ischemia and necrosis.<sup>5, 6</sup>

Allergic reactions to local anesthesia may also result in such lesions but will occur immediately after administration of the anesthetic solution and are generalized mostly. However, modern anesthetic solutions containing amide greatly reduced hypersensitivity reactions.<sup>3</sup>

Apthous ulcer, herpes simplex and necrotizing sialometaplasia are also included in differential diagnosis but clinical features of the present case concluded it to be

anesthetic necrosis. It was well circumscribed, painless, deeply ulcerated lesion on hard palate at the location of local anesthesia with delayed healing. However, herpes simplex occurs extraorally and may occur intraorally in response to any traumatic injury to the tissues like aphthous ulcer while, necrotizing sialometaplasia is a self-limiting, benign, inflammatory disease of the minor salivary glands.<sup>7</sup>

Management of such lesions include only patient reassurance and conservative treatment with topical antiseptic-anesthetic gel without vasoconstrictor. There is no need of surgical intervention unless sequestration of underlying bone is visible which occurs rarely. Post-traumatic neuralgia is also reported in some cases but it was absent in our case. For that counselling at regular intervals is important to be included in the treatment plan.<sup>6</sup>

## CONCLUSION

Although palatal necrosis due to local anesthesia is rare but it should be kept in mind while diagnosing palatal lesions. Care should be taken while infiltrating local anesthesia on the palatal side to avoid such complications.

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