

Post-Anaesthetic Herpetic Lesion following Extraction - A Case Report

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Abstract

Rationale: In Indian subcontinent, every adult may have suffered from chicken pox during their early childhood and harbour the virus, which eventually becomes inactive over years. These latent organisms can undergo sudden activation when triggered by injection of local anaesthesia in the oral cavity. Probably, some symptoms develop along the distribution of the nerve. **Patient Concerns:** Here, we present a case report of a 55-year-old male patient who reported to us with post-anaesthetic herpetic lesion involving the face unilaterally and also a lesion present in the intraoral cavity not crossing the midline. **Diagnosis:** The patient was diagnosed as post-anaesthetic herpetic lesion. **Treatment:** Symptomatic medical management was given. **Outcomes:** On two month follow-up, the lesion was completely resolved and replaced by healthy tissue. **Take-Away Lesson:** Medical history should also include a question about past experience with chicken pox before proceeding with extraction.

Keywords: Herpes zoster, local anaesthetic complication, post-herpetic lesion, trigeminal nerve involvement

INTRODUCTION

Extraction is a simple procedure with complications, which can be predictable and preventable. However, sometimes when patient neglects to give a history of their past experience with chicken pox, both surgeon and patient can be caught unaware. One of the post-anaesthetic complications is herpes infection following injection of local anaesthesia (LA). The herpes zoster is a rare virus along the division of the trigeminal nerve which is caused by reactivation of the varicella-zoster that resides within the trigeminal ganglion after the primary infection of chickenpox. Herpes zoster infection is usually characterised by a unilateral, painful vesicular rash which is limited to a single dermatome. Age, stress, immunocompromised status and immunosuppressive drugs are known factors for virus reactivation.^[1] Among the Indian population, the part of the body which most commonly gets affected is the thoracic dermatome followed by the trigeminal nerve.^[2]

CASE REPORT

A 55-year-old male patient reported to the Department of Oral and Maxillofacial Surgery in Adhiparasakthi Dental College and

Hospital with a chief complaint of broken restoration in the left upper back teeth region. The patient denies a history of heart, lung, liver, kidney disease, hepatitis, diabetes, neurologic or psychiatric disorder, malignancy, bleeding disorder and drug allergy. The patient was conscious, vitals were stable, well oriented to time and place with no gross facial asymmetry. On intraoral examination, a fractured restoration was seen in relation to the upper left third molar. Intraoral periapical radiograph reveals evidence of radiolucency involving the enamel, dentine and pulp of the tooth. Based on radiographic and clinical examination, the diagnosis was given as fractured restoration with secondary caries in relation to 28. The patient was advised for extraction of 28 under LA. Under strict aseptic environment extraction of 28 under LA was done and post-extraction instruction was given.

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The patient reported to the department two days after the extraction with the complaint of painful swelling on the left side of his face, malaise and on and off low-grade fever. On clinical examination non-tender, diffuse oedematous swelling with widespread erythema and crusting distributed over the left ophthalmic and maxillary division of the trigeminal nerve unilaterally without affecting the right side of the face. The left eye had inflamed conjunctiva with normal acuity and pupillary reflexes [Figure 1].

Intraorally vesicular eruptions, erythema and areas of ulcerations were noted unilaterally over the distribution of the maxillary nerve including the hard palate and buccal mucosa [Figure 2]. On questioning it was found that the patient had a positive history of varicella zoster infection in his childhood. A provisional diagnosis of herpes zoster involving the ophthalmic and maxillary divisions of the trigeminal nerve was given. He was referred to the dermatologist for further management. Dermatologist confirmed the diagnosis of herpes zoster of the trigeminal nerve by clinical and haematological investigation of herpes simplex virus 1, immunoglobulin M (IgM) and IgG. The patient was started with acyclovir (ACV) 400 mg twice daily for five days. The patient responded to treatment and was reviewed after one week. The patient was evaluated every week. Gradual healing was observed in phases. The patient was completely free from post-anaesthetic herpetic lesions during the one month recall and negligible permanent facial scarring was observed [Figure 3].

DISCUSSION

LA causes various complications as described in the literature. One rare complication of local anaesthetic administration is post-anaesthetic herpetic lesions. The patient occasionally reports after the second post-operative day with ulceration around the injection site. Recurrent aphthous lesions can be differentiated from varicella-zoster virus (VZV) infections based on the clinical presentation (extraoral and intraoral distribution pattern) and other burning symptoms. VZV is a double-stranded DNA, enveloped virus of the Herpes viridae family that is found exclusively in humans. It is one of the nine human herpes viruses in this family that have been reported to cause disease in humans.^[3] The incidence of varicella in tropical climates is 13–16 cases/1000 people/year affects more in children aged 1–9 years old. In India, the incidence of varicella is higher in adults.^[4] VZV which infects almost 99.5% of the population of more than 40 years of age gains access to the cranial nerve or dorsal root ganglia during varicella in childhood. After the primary infection, the herpes virus remains dormant within the neural ganglia. A secondary outbreak of herpes zoster occurs after a latency of several decades when cell-mediated immunity to VZV declines.

Diagnosis of herpes zoster is challenging when the patient does not reveal the disease before extraction. Risk factors for sudden exacerbation include HIV, malignancy, cytotoxic drugs, steroids, radiation therapy, stress, alcohol abuse and dental trauma.^[5] Most subjects typically have one episode of

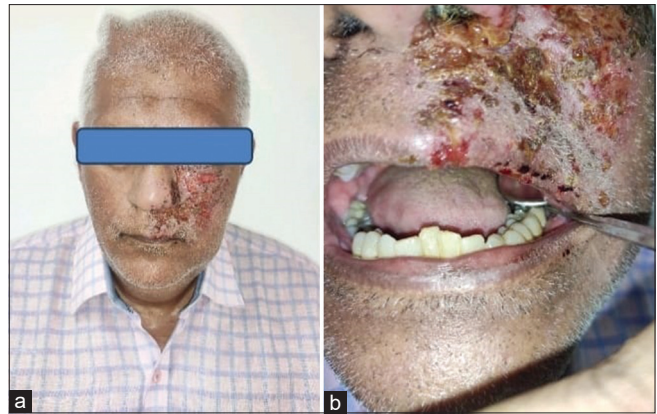


Figure 1: (a and b) Post-operative 2nd day with erythema and crusting



Figure 2: Intraoral image depicts the involving along the distribution of maxillary nerve and not crossed midline



Figure 3: (a and b) 1-month follow-up after antiviral therapy and symptomatic management, the lesion is completely healed and by healthy mucosa

herpes zoster in their lifetime although recurrent episodes are not uncommon.^[6]

Pelloni *et al.*, stated that there are few rare cases in the literature reporting herpes involving all three or two branches of trigeminal nerve and skin involvement during HZ infection has been rarely reported, it is important that dental surgeons

should be aware and more familiar with this presentation.^[7] Early diagnosis and antiviral therapy with ACV, famciclovir or valacyclovir are recommended. Antiviral therapy should be initiated early in the course of the disease which might decrease the severity of the lesion and lessens the healing time.^[8]

Prevention

According to the literature, there is no means of prevention of reactivation of the virus in sensitised individuals. However, the clinical feature of the disease can be reduced to an extent by treating it during the prodromal phase.

From our experience, we designed the following questions to be asked to the patient before the procedure.

1. Previous history of chicken pox infection
2. Skin rash, blister, vesicles
3. Vaccinated against varicella zoster
4. Antiviral therapy
5. Steroid therapy
6. Immunocompromised status.

These simple questions will help the surgeon to have safe practice and prepare for any upcoming complications.

With the increasing number of immunocompromised cases, dental surgeons will expect to encounter more post-anaesthetic lesions. The dental surgeon should be familiar with the signs and symptoms of the patient experiencing herpes zoster infection in branches of the trigeminal nerve. Immunocompetence status and age-specific screening should be warranted in case of atypical involvement and according to the patient's history, while treatment with antiviral drugs should be rapidly initiated in patients at risk for complications.

Apart from antiviral medication, Malamed suggests tannic acid preparation (zilatin) can be applied to the lesion intra and extraorally.^[9]

For the maintenance of oral hygiene, it is advised to use mouthwash which contains azulene sulfonic acid and physical cleaning of oral mucosa is encouraged.^[10] In our case, the patient presented with prodromal symptoms of fever, malaise and characteristic signs of extraoral and intraoral herpes zoster where the presence of unilateral vesicles with active bleeding was noted. On the skin and lips, vesicle rupture can result in erosions covered by pseudomembranes and haemorrhagic crusts, followed by healing of the lesion with healthy mucosa. The patient is under follow-up and has not presented with post-herpetic neuralgia, which is one of the frequent complications of herpes zoster.

CONCLUSION

The dentist and oral surgeon should ask the patient about their previous experience with chicken pox and other medical conditions. Failure to elicit detailed history could result in untoward complications. The treating practitioner must be able to diagnose the post-anaesthetic herpetic lesion after tooth extraction and refer them immediately to other specialities for prompt treatment at the initial stage.

Declaration of patient consent

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

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Conflicts of interest

There are no conflicts of interest.

REFERENCES

1. Koshy E, Mengting L, Kumar H, Jianbo W. Epidemiology, treatment and prevention of herpes zoster: A comprehensive review. *Indian J Dermatol Venereol Leprol* 2018;84:251-62.
2. Singh GK, Mitra D, Kumar S, Raman N, Das P, Sharma P. A clinico-epidemiological study of cases of herpes zoster in a tertiary care hospital. *J Skin Stem Cell* 2022;9.
3. Mocarski Jr ES. Comparative analysis of herpesvirus-common proteins. In: *Human herpesviruses: Biology, therapy, and immunoprophylaxis*. Arvin A, Campadelli-Fiume G, Mocarski E, *et al.*, (eds). Cambridge, USA: Cambridge University Press; 2007. PMID: 21348093.
4. Heininger U, Seward JF. Varicella. *Lancet* 2006;368:1365-76.
5. Nainggolan N, Dewi TS. Dilemma in diagnosing herpes zoster with prodromal odontalgia in immunocompetent patient: A case report. *J Clin Diagn Res* 2022;16:ZD20-2.
6. Carbone V, Leonardi A, Pavese M, Raviola E, Giordano M. Herpes zoster of the trigeminal nerve: A case report and review of the literature. *Minerva Stomatol* 2004;53:49-59.
7. Pelloni LS, Pelloni R, Borradori L. Herpes zoster of the trigeminal nerve with multi-dermatomal involvement: A case report of an unusual presentation. *BMC Dermatol* 2020;20:12.
8. Kaur R, Rani P, Malhotra D, Kaur R, Dass PK. A rare case report and appraisal of the literature on spontaneous tooth exfoliation associated with trigeminal herpes zoster. *Oral Maxillofac Surg* 2016;20:331-6.
9. Malamed SF. *Handbook of Local Anesthesia-E-Book*. Amsterdam, The Netherlands: Elsevier Health Sciences; 2014.
10. Matsuda Y, Mizuno R, Miyajima S, Arakawa S, Kabasawa Y. A case of oral health management for a patient with extensive ulceration of the oral mucosa due to herpes zoster. *Healthcare (Basel)* 2022;10:2249.