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Case Report

Management of formocresol burn-case report

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ABSTRACT

Formocresol is widely used in pediatric endodontics as a pulpotomy medicament. Formocresol helps to fix soft tissues in oral cavity such as pulp. Care should be taken while using formocresol proper isolation techniques should be used during its application as an endodontic material, because of its hazardous effects on soft tissue. This article elaborates the case of chemical burns due to improper handling of formocresol during dental treatment. It demonstrates the underlying effect such as moderate pain burning sensation and patchy dark discoloration of skin and its resolution.

Keywords: Facial burn, Formocresol, Pulpotomy

INTRODUCTION

Soft tissue injuries of head and neck are the most common injuries encountered during clinical practice.[1] Injuries to oral soft tissues can occur due to accidental, iatrogenic and factitious trauma, which may present as burns, ulcerations and gingival recessions.[2] Physical, chemical and thermal agents are the main causative agents for oral soft tissue burns.

Iatrogenic trauma can be defined as any trauma that has been induced by the dentist's activity, manner, or therapy.[4] The severity and extent of lesions caused by chemical agents depends on the concentration, type, and quantity of the substance, as well as duration of contact with the oral soft-tissues.[5] Disfigurement and scars become a social stigma and can have a detrimental effect on the personality and future of the child patient.[3]

Formocresol pulpotomy is one of the most common procedures in cases of mechanical and carious exposure in primary teeth.[6] It is known to have some clinical benefits, although local soft and hard tissue necrosis occurs if not confined to the pulp.[7]

The following case is reported due to paucity of literature describing tissue degeneration in a patient treated with formocresol during pulp therapy.

CASE REPORT

A 6-year-old female patient reported to Shri. Yashwantrao Chavan memorial medical and rural development foundation's dental college and hospital, Ahmednagar, India; with spontaneous pain in right mandibular posterior region. Intraoral examination revealed deep occlusal caries with respect to tooth #85. The tooth was planned for multi visit pulpotomy following the radiographic examination.

Then the case was assigned to an undergraduate student to perform the dental procedure. The intern performed access opening and biomechanical preparation with #85 and a dressing of formocresol soaked cotton was given Immediately after the patient left, she complained of mild burning sensation on right cheek with no discoloration. After reaching home, she started complaining of mild burning, moderate pain, skin irritation and discoloration. After 24 hours, the patient reported to the department of

pedodontics (Shri Yashwantrao Chavan dental college, Ahmednagar) with complaint of moderate pain and burning sensation on right cheek. A patch of darkly discoloured skin measuring 0.6×0.5 cm at corner of mouth and another of 1.2×0.5 cm on body of mandible was seen (Figure 1). Owing to the involvement of the angle of the mouth, her mouth opening was also reduced with difficulty in food intake. Immediately after the patient left, she complained of mild burning sensation on right cheek with no discoloration. After reaching home, she started complaining of mild burning, moderate pain, skin irritation and discoloration. It was later learned that the intern squeezed the cotton pellet dipped in formocresol with gloved hand and continued treatment without changing her gloves. This induced burning sensation and discolouration on affected site.

Management

A topical analgesic was administered to relieve the symptoms of pain. Patient was advised soft diet and recalled. After 1 week, her condition improved markedly (Figure 2). On subsequent visit after two weeks, the condition had totally resolved, and pulpotomy was completed.

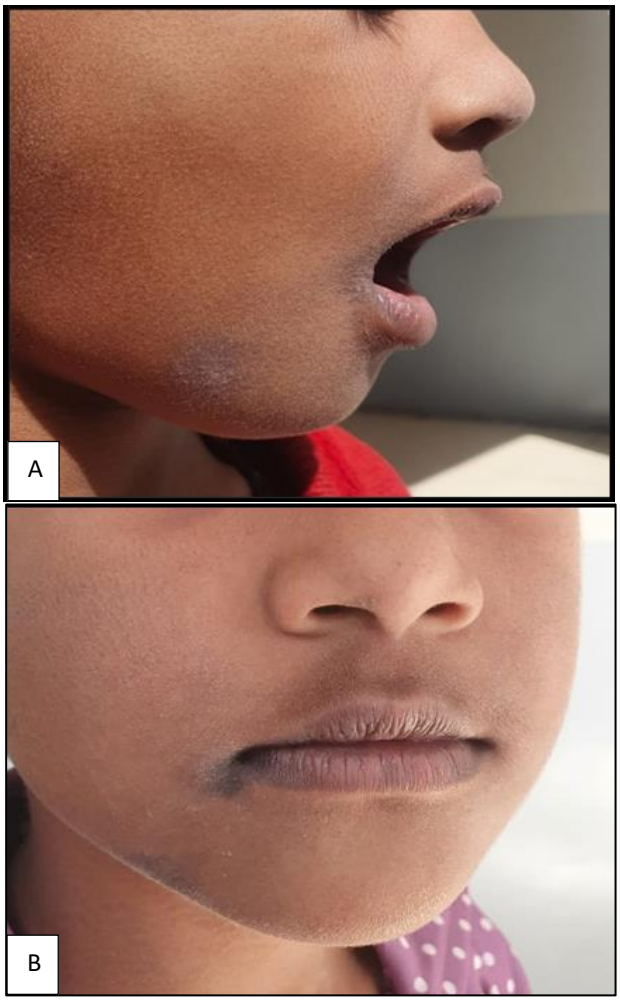

Figure 1 (A and B): Pre-operative images.

Figure 2 (A and B): Post-operative images.

DISCUSSION

Clinical presentation of the chemical injuries might differ according to the composition and concentration, pH of the substance, the quantity applied, the manner and duration of tissue contact, and the extent of penetration into tissue. These changes can vary from diffuse erosive lesions ranging from simple sloughing to complete mucosal detachment with extension into the submucosa.[8] As the duration of exposure increases, the necrosis progresses, and the affected epithelium is separated from the underlying tissue, leading to desquamation.[9] Thus, tissue exposed to formocresol manifests changes in its texture and colour.

The case report of formocresol burns on facial skin occurring in dental practice are rare. Thorough literature review did not yield any case report of facial skin burn due to formo-cresol.

Immediate action after the accidental application of formocresol on skin should be to wash the affected skin with water or saline to reduce the severity of burns. If pain is significant, symptomatic treatment such as systemic or topical analgesics may be beneficial.

CONCLUSION

It is advised that all dental procedures in pediatric patients should be performed with all the preventive isolation techniques such as use of rubber dams, sterile instruments, and gloves while taking utmost precautions during use of agents like formocresol.

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REFERENCES

1. Datarkar A, Tayal S. Management of Soft Tissue Injuries in the Maxillofacial Region. In: Bonanthaya K, Panneerselvam E, Manuel S, Kumar VV, Rai A. (eds) Oral and Maxillofacial Surgery for the Clinician. Springer, Singapore. 2021;997-1012.
2. Girish MS. Iatrogenic injury of oral mucosa due to Chemicals: A Case report of formocresol injury and review. J Dental Med Sci. 2015;14(4):01-5.
3. Bhattacharya V. Management of soft tissue wounds of the face. Ind J Plastic Surg. 2012;45(3):436-43.
4. Ozcelik O, Haytac MC, Akkaya M. Iatrogenic trauma to oral tissues. J Periodontol. 2005;76(10):1793-7.
5. Aravind NKS, Reddy VS, Kumar Goud KA. Chemical injuries of the oral cavity in dental practice: a case report and review. Ann Essences Dent. 2014;6:53-5.
6. Chakraborty A, Dey B, Jana S. A Nonconventional Approach to Formocresol Pulpotomy. Int J Clin Pediatr Dent. 2018;11(6):490-5.
7. Verma P. Endodontic emergencies: Your medication may be the cause. J Conservative Dentistry. 2009;12(2):77-9.
8. Dayakar MM, Pai PG, Sooranagi RP, Vijayan V, Waheed A. Chemical burns of gingiva and its management. SRM J Res Dent Sci 2018;9:174-80.
9. Issrani R. Iatrogenic Injury of Facial Skin due to Formocresol: A Case Report. J Cutaneous Aesthetic Surg. 2020;13(3):240-2.

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