

Iatrogenic Injury of Facial Skin due to Formocresol: A Case Report

Rakhi Issrani, Namdeo Prabhu¹, Mohammad Khurseed Alam

Departments of Preventive Dentistry and ¹Oral and Maxillofacial Surgery and Diagnostic Sciences, College of Dentistry, Jouf University, Sakaka, Saudi Arabia

Abstract

A detailed history and complete clinical examination of the patient with the soft tissue injury are needed to identify and diagnose the most probable underlying cause of that specific injury. The presented case is of a chemical burn due to formocresol, presenting with moderate pain and burning sensation with respect to a patch of darkly discolored skin. This case is reported because of the rarity of such lesions and the paucity of information concerning them in the dental literature. It is suggested that all the pediatric endodontic procedures should be performed along with essential preventive isolation methods.

Keywords: Burns, chemical, formocresol, iatrogenic

INTRODUCTION

The key causative factors for the soft tissue injuries are chemical, thermal, and physical agents. Clinically, it mainly presents as erythema, burn, edema, desquamation, and ulceration. These injuries in different forms might resemble with other commonly occurring oral diseases.^[1] Thus, the clinical diagnosis of soft tissue injuries is generally a diagnostic challenge, which needs a detailed history and review of the patient for the diagnosis of the possible causal factor of that specific injury. An early detection of the lesion and removal of the causative agent along with the immediate therapeutic measures ensure a rapid cure.

Formocresol (FC) was introduced to treat non-vital deciduous and permanent teeth, which soon gained popularity for dental procedures such as root canal treatment (RCT) and deciduous teeth pulpotomy.^[2,3] Local soft and hard tissue necrosis occurs if FC is not confined to the pulp.^[4] The main purpose of this article was to show the degenerative potential of FC.

CASE REPORT

A 12-year-old female patient reported to the College of Dentistry, Jouf University, Saudi Arabia, with pain in the left

mandibular posterior region. Intraoral examination revealed disto-occlusion caries with respect to tooth #36. A diagnosis of acute irreversible pulpitis with respect to tooth #36 was made after the radiographical investigation, and the tooth was planned for multivisit pulpotomy. The case was allotted to an intern for performing the dental procedure. The assigned intern performed access opening and biomechanical preparation in that specific tooth and gave her dressing using FC-soaked cotton. The assigned intern cleaned the patient's cheeks with wet cotton and sent the patient. After 24h, the patient reported with complaints of moderate pain and burning sensation with respect to patches of darkly discolored skin, one measured approximately 2.5 × 1.5cm and the other measured nearly 0.5 × 1 cm on the left cheek [Figure 1]. The burns were extending from the middle of the upper lip on the left side toward the corner of the mouth and further to the left cheek. Owing to the involvement of the angle of the mouth, her mouth opening was also reduced with difficulty in food intake. Immediately before the patient left, she complained of mild burning sensation on left cheek around the corner of the mouth with no erythema or

Address for correspondence: Dr. Rakhi Issrani,

Department of Preventive Dentistry, College of Dentistry,
Jouf University, Sakaka, 72345, Saudi Arabia.
E-mail: dr.rakhi.issrani00@gmail.com

Access this article online

Quick Response Code:



Website:
www.jcasonline.com

DOI:
10.4103/JCAS.JCAS_151_19

This is an open access journal, and articles are distributed under the terms of the Creative Commons Attribution-NonCommercial-ShareAlike 4.0 License, which allows others to remix, tweak, and build upon the work non-commercially, as long as appropriate credit is given and the new creations are licensed under the identical terms.

For reprints contact: reprints@medknow.com

How to cite this article: Issrani R, Prabhu N, Alam MK. Iatrogenic injury of facial skin due to formocresol: A case report. J Cutan Aesthet Surg 2020;13:240-2.

discoloration. After reaching home, she started complaining of mild burning and discoloration with respect to these patches. Slowly, this burning sensation was accompanied with moderate pain. It was learned that the operating intern squeezed the cotton pellet dipped in FC with gloved hand and continued the treatment without washing his gloved hand. This led to mild skin burns.

Treatment: An analgesic was also administered to relieve the symptoms of pain. She was recommended soft diet and advised to avoid spicy food. After 1 week, her condition improved markedly [Figure 2]. On her next visit after 2nd week, the condition had totally resolved, and her RCT was subsequently completed.

DISCUSSION

Improper handling of various medications or dental materials by dental practitioner may cause chemical burns.^[5] Lesions produced might differ from mild to severe depending on the composition, pH, concentration, the quantity applied, the manner and duration of tissue contact, the extent of penetration into tissue, and the mechanism of action of the chemical agents.^[6,7] Chemical burns manifest as diffuse erosive lesions ranging from simple desquamation to complete mucosal detachment with extension into the submucosa. The tissues exposed to chemical agents show changes in their color, texture, consistency, and vascularity. The typical chemical burn usually presents as a superficial white to yellow, wrinkled lesion. As the duration of exposure increases, the necrosis

progresses, and the affected epithelium is separated from the underlying tissue, leading to desquamation. On removal of necrotic epithelium, the red bleeding connective tissue can be observed, subsequently covered by yellowish fibrinopurulent membrane. If the chemical injury is involved with a salivary gland duct, it might present as transient obstructive sialadenitis; the resulting scarring of ductal opening might lead to permanent obstruction and chronic sialadenitis.^[7,8] Few case reports of FC burn in a dental office were published earlier but all were of oral mucosal burn caused by FC. In spite of conducting thorough literature review, any case report of facial skin burn due to FC could not be found. Water or saline irrigation is the emergency treatment of choice to minimize the product effect. If pain is significant, symptomatic treatment such as analgesics may be beneficial.^[9]

CONCLUSION

It is suggested that a pediatric endodontic procedure should be performed along with necessary preventive isolation methods such as the regular use of rubber dam by every clinician.

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.



Figure 1: Darkly discolored skin due to FC burn



Figure 2: Significant healing of lesions after 1 week

Financial support and sponsorship

Nil.

Conflicts of interest

There are no conflicts of interest.

REFERENCES

1. 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.
2. Chandrashekhar S, Shashidhar J. Formocresol, still a controversial material for pulpotomy: A critical literature review. *J Res Dent* 2014;2:114-24.
3. Al-Dlaigan YH. Pulpotomy medicaments used in deciduous dentition: An update. *J Contemp Dent Pract* 2015;16:486-503.
4. Verma P, Chandra A, Yadav R. Endodontic emergencies: Your medication may be the cause. *J Conserv Dent* 2009;12:77-9.
5. Dilsiz A. Self-inflicted oral soft-tissue burn due to local behavior and treatment. *J Clin Exp Dent* 2010;2:e51-4.
6. Morais CAH, Bernardineli N, Garcia RB, Westphalen VPD. Camphorated parachlorophenol and cresol formalin—empirism X science. *J Bras Clin Estética Odontol* 2001;5:31-3.
7. 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.
8. Girish MS, Anandakrishna L, Chandra P, Nandlal B, Srilatha KT. Iatrogenic injury of oral mucosa due to chemicals: A case report of formocresol injury and review. *IOSR J Dent Med Sci* 2015;14:1-5.
9. Finkelstein JL, Schwartz SB, Madden MR, Marano MA, Goodwin CW. Pediatric burns. An overview. *Pediatr Clin North Am* 1992;39:1145-63.