



Iatrogenic Lip and Facial Burns Caused by an Overheated Surgical Instrument

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ABSTRACT An unusual case of an iatrogenic superficial burn of the lip and face during third molar surgery is presented. The burn was caused by a heated surgical instrument after sterilization. Although completely healed within three weeks, the burn had a negative influence on the patient-doctor trust. The surgical team must avoid using recently sterilized instruments in an unsafe manner.

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Thermal burns are documented complications associated with various medical and dental operations.¹⁻⁶ However, the majority of the reported iatrogenic burns could have been prevented by paying careful attention to this hazard by the clinic team. Peterson described abrasion of the lips and corners of the mouth as a result of the rotating shank of the bur rubbing on the soft tissue during dental extraction.⁷ The author advised that when the surgeon is intent on the cutting end of the bur, the assistant should be aware of the location of the shank in relation to the soft tissues. Thermal burns, however, are not discussed as a potential complication of oral surgery operations in that textbook.⁷ Reports of thermal burns related to oral surgery are scattered.²

This report describes a case of an iatrogenic burn resulting from inadequate cooling of a recently sterilized instrument.

Case Report

A 20-year-old healthy patient went to a dental clinic for extraction of upper and lower right third molars. The potential complications of the operation and healing period were described to the patient. After administering appropriate anesthesia that included a right inferior alveolar nerve block, the dental surgeon developed a flap around the lower tooth and asked the dental assistant for a smaller straight elevator than the one available in the extraction tray.

Accordingly, the assistant gave the dentist a recently sterilized instrument. Then, without checking its temperature, the dentist applied the elevator to the patient's mouth. As the elevator touched the intraoral tissue, the surgeon noticed that the instrument was hot. He immediately stopped the operation and then noticed that the heated instrument had made contact with, for a short time, the anesthetized lower face and lip area, inflicting

a minor superficial burn (FIGURES 1A-B).

The operator explained to the patient what had happened, but the patient was interested in completing the operation despite the burn event. After the removal of two teeth, the patient was medicated by oral paracetamol-propoxyphene HCl (Teva, Petah-Tikva, Israel) 500 mg q.i.d., 0.12 percent chlorhexidine (Taro, Jerusalem, Israel) b.i.d. mouthwash, along with a topical application of Vaseline Intensive Care lotion (Lever, Haifa, Israel) q.i.d.

Three days later, the patient reported his displeasure because of the facial lesion (FIGURES 2A-B) and complained that the intensity of the burn pain was greater than the intensity of pain from the intraoral extraction sites. The patient rated the intensity of the pain as 9 on a 1-to-10 visual analog scale (VAS) (with "10" as the most severe). One week after the event (FIGURE 3), the patient was referred to a plastic surgeon for completing the follow-up.

The plastic surgeon reported the burn lesion, as well as the intraoral extraction sites, was uneventful and completely healed within three weeks. Unfortunately, the patient developed distrust toward the clinic team as the healing process progressed. Although a lawsuit did not happen, the patient had threatened to sue the dental team for the mishap. The patient has not returned to the dental clinic since then even though he needed further dental and surgical treatments.

Discussion

Superficial burns (also known as first-degree burns), caused by very short flashes (flame exposure), are limited to the epidermis layer and are characterized by a dry and red appearance as well as pain. This type of burn usually heals without scarring. From the six "Cs" (clothing, cooling, cleaning, chemoprophylaxis, covering, and comforting) for



FIGURE 1A. Extraoral view of the patient several minutes after the burning event.



FIGURE 1B. Intraoral view of the patient several minutes after the burning event.



FIGURE 2A. Extraoral view of the patient three days post event.



FIGURE 2B. Intraoral view of the patient three days post event.

treating burn wounds, only comforting (pain relief) was relevant in the present case. Superficial burns require neither infection prophylaxis nor wound dressings. Use of a skin lubricant is sufficient. Moreover, because of its relative simplicity, the extent of a superficial burn does not need to be estimated (by a "rule of nines" or other methods).⁸

The first rule of medicine, *Primum non nocere* ("First do no harm") was violated in this case with negative consequences to the trust between the patient and the doctor. Despite constant reassurance, the patient lost his confidence in the clinic team and eventually did not return to the clinic for completion of his planned treatment. Zinman reported a case of a lawsuit by a young student who was burned in her lower lip owing to overheated handpiece during endodontics. That lawsuit was settled for \$280,000.⁷ Moreover, beside the damage to the patient, the iatrogenic accident caused the operator and his assistant unnecessary stress and anxiety.

The burn could have been prevented by allowing an appropriate cooling period for instruments after sterilization before their use.



FIGURE 3. Extraoral view of the patient one week post event. The patient did not allow additional pictures to be taken.

This paper documented a case in which a relatively simple superficial burn healed within a short period but had a negative influence on the patient-physician trust. The dental and surgical teams must make every effort to prevent accidents of this type. ■■■■

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