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CASE REPORT

Case Report: Severe Upper Lip and Hard Palate Necrosis Associated With Chronic NSAID Abuse

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Abstract

A 67-year-old woman experienced extensive soft-tissue ulceration of the right upper lip and adjacent maxillary bone as a consequence of attempted abuse of aspirin (NSAID). All oral lesions healed within 28 days after local and systemic therapy. Oral ulceration has many potential causes ranging from physical trauma to malignancy. Chemicals are a less common cause of traumatic ulceration. Most chemical burns are characterized by mild to moderate tissue damage that heals spontaneously within seven to 15 days without scarring. The primary intervention involves discontinuing the aspirin use and addressing the underlying vascular compromise. Treatment may include supportive measures, wound care, and in severe cases, reconstructive surgery.

Keywords: **Aspirin abuse, oral ulceration, chemical burn, NSAIDs, upper lip necrosis, maxillary bone**

Prikaz slučaja: Opsežna nekroza gornje usne i tvrdog nepca povezana sa hroničnom upotrebom nesteroidnih antiinflamatornih lekova (NSAIL)

Sažetak

Pacijentkinja starosti 67 godina imala je opsežnu ulceraciju mekih tkiva desne strane gornje usne i susedne maksilarne kosti kao posledicu pokušaja zloupotrebe aspirina (NSAIL). Sve oralne lezije su zarasle u roku od 28 dana nakon primene lokalne i sistemske terapije. Oralni ulkusi mogu imati različite uzroke, od fizičke traume do maligniteta. Hemikalije su ređi uzrok traumatskih ulceracija. Većina hemijskih opekotina karakteriše se blagim do umerenim oštećenjem tkiva koje spontano zarasta u roku od sedam do 15 dana bez formiranja ožiljka. Osnovna terapijska mera je prekid upotrebe aspirina i rešavanje osnovnog vaskularnog poremećaja. Lečenje može uključivati suportivne mere, zbrinjavanje rane, a u težim slučajevima i rekonstruktivnu hirurgiju.

Klučne reči: **Zloupotreba aspirina, oralni ulkusi, hemijska opekotina, NSAIL, nekroza gornje usne, maksilarna kost**

Introduction

is a widely used medication with various therapeutic benefits, including anti-inflammatory and anticoagulant effects. However, like many drugs, it can have adverse effects when used improperly or in excess. Human exposure to toxic agents can be classified as unintentional (accidental), intentional (self inflicted) and others[1-4]. Most traumatic ulceration reflects the local physical etiologies such as a broken tooth or dental restoration, or trauma from an orthodontic or prosthodontic appliance. Chemicals are a less common cause of traumatic ulceration. Examples include local application of medications (e.g., aspirin), recreational drugs (e.g., cocaine), some materials commonly used by dentists, and non-pharmaceutical substances[5-7]. Although the upper lip necrosis specifically related to aspirin abuse is rare, aspirin has been associated with gastrointestinal bleeding, which can potentially affect blood supply to various tissues. In extreme cases,

severe compromise of blood flow may lead to tissue necrosis, including the upper lip.

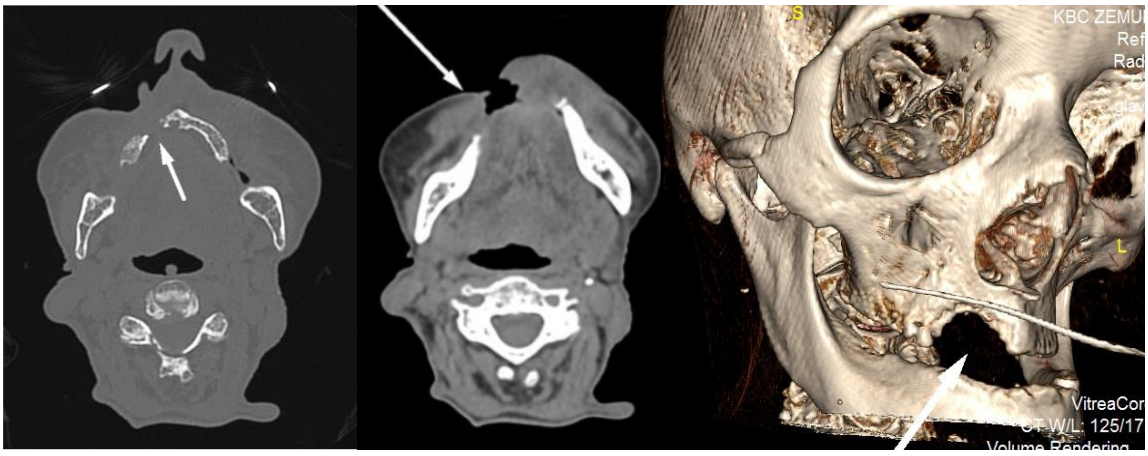
We report a case of chemical soft tissue upper lip and hard palate tissue ulceration and necrosis as a result of an error due to patients' improper prolonged and continuous application of NSAID (i.e. aspirin) when applied as a tablet in the oral vestibule in an attempt to alleviate pain.

Case report

On 04/09/2023 a 67-year-old woman accompanied by her family was admitted to the Outpatient Maxillofacial Surgery Ambulance of Clinical Medical Center in Zemun (Serbia) because of food intake problems associated with pain and swallowing, as as well as significant visible facial deformation associated with a defect in the upper lip and adjacent tissue. Her family reported that she had an oral habit of applying an aspirin tablet in the upper right oral vestibule for more than 5 years. The patient confirmed that she had continuously sucked on and melted the aspirin tablet below the right side of upper lip in an attempt to alleviate pain.

Initial clinical examination revealed the tumor-like formation (total size about 3.5 x 3cm) with a soft tissue defect (about 1cm in diameter) in the region of the upper lip. Intraoral examination revealed extensive ulceration of the upper lip mucosa and adjacent musculature, with an impression of infiltration of the alveolar extension of the upper jaw on the right side.

An immediate CT scan of the facial bones demonstrated a larger osteolytic bone defect in the alveolar process of the maxilla on the right and soft-tissue ulcerative tumor lesion of the upper lip with locoregional destruction of skin and soft tissues. (Fig. 1 -3).



Figures 1-3. Patients CT scan of the facial bones showing large defect in the alveolar process of the maxilla on the right.

Following observation, on 10/04/2023 an incisional upper-lip biopsy was performed, and the conclusion was that in the obtained material there is a piece of mucosa covered with squamous keratinizing epithelium, which is ulcerated in one part. In the submucosa, in the area of ulceration, there is a granulomatous inflammation of the type around the foreign body (the foreign body is inorganic in nature and of unclear etiology). Seven days later, a re-biopsy was performed and the pathologist's conclusion was the same. Following clinical admission from 11/07/23 to 23/11/23, the soft-tissue and hard palate ulceration was initially treated with extensive surgery. Under local anesthesia and sedation, debridement and reconstruction of the upper lip defect on the right side were performed with a muscle-arterial flap (Webster) of the right buccal region (Fig. 4-9).

During hospitalization, total parenteral nutrition was administered for eight days. Systemic antibiotics (ceftriaxone, 1000 mg every twelve hours for ten days) and analgesics (sodium metamizole, 400 mg every eight hours) were provided. During early postoperative period, systemic corticosteroids (betamethasone, 4 mg once a day for three days) followed by topical corticosteroids (betamethasone, 0.5 mg in 10 mL of water as mouthwash three times daily for ten days). The early and late postoperative period was without complications. The only longstanding abnormality was some local scarring of the upper lip and cheek on the right side. Fig. 10-11).

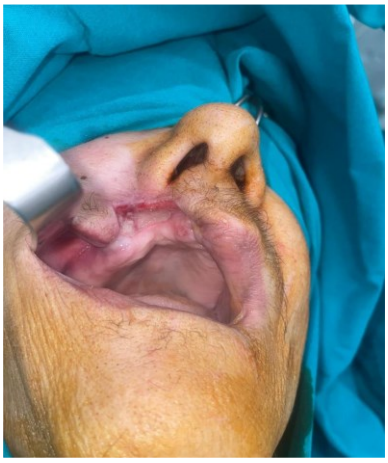


Figure 4. Intraoperative finding before planing.

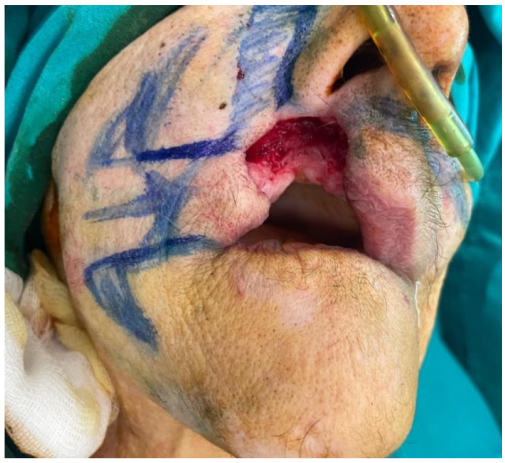


Figure 5. Planing of the incision.

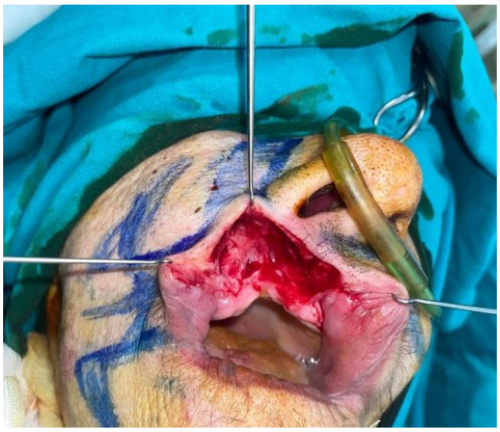


Figure 6. Intraoperative finding

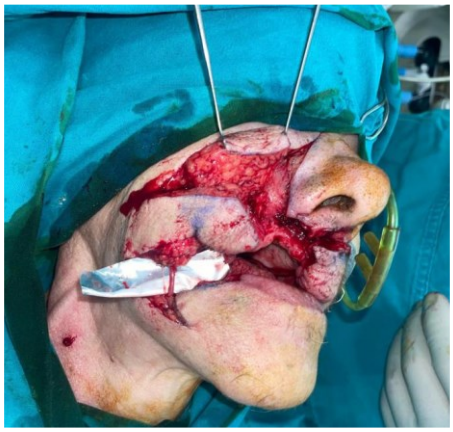


Figure 7. Intraoperative finding

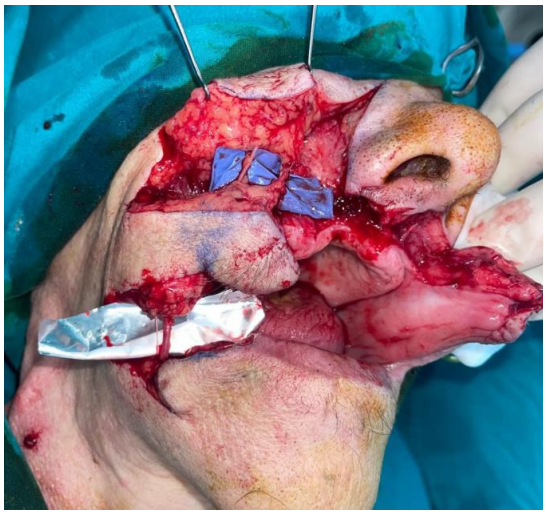


Figure 8. Intraoperative finding during reconstruction

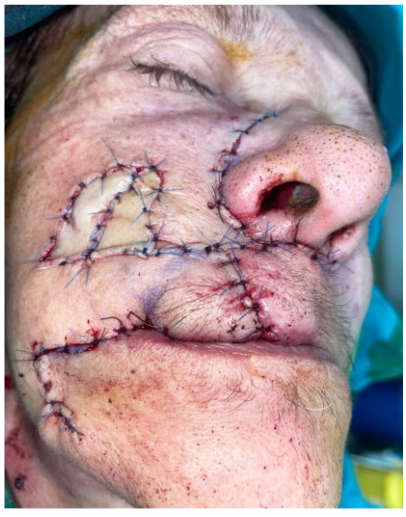


Figure 9. Postoperative finding

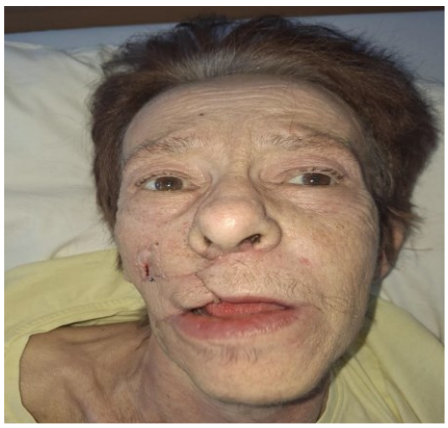


Figure 10. Postoperative fainding after several days.10.

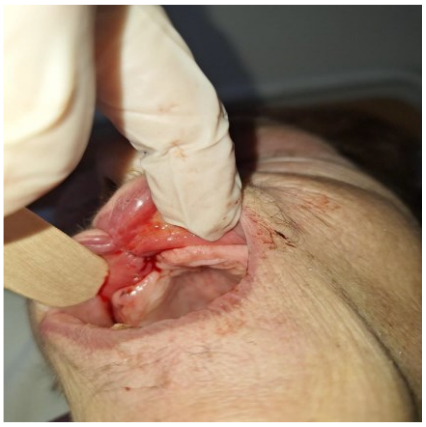


Figure. 11. Postoperative intraoral finding

Discussion

Unintentional self-inflicted therapeutic error due to patients' improper application of medication (e.g. aspirin and derivatives) is quite common[8-17]. Most cases are caused by aspirin and derivatives when sucked on,[6] applied as a gel,[7] mouthwash,[8] powder[9] or as a tablet next to an aching tooth in an attempt to alleviate pain[10-14]. The low pH (3.5-5.0) of these products seems to be the origin of the mucosal damage. Chemical irritants cause oral mucosal damage via a variety of mechanisms such as direct damage via their acidic or alkaline nature. The organic and inorganic acids tend to bind with epithelium (tissue) proteins and denature the proteins of the cells leading to coagulative necrosis of the cells, with the coagulum tending to limit the penetration of the acid. Aspirin inhibits platelet function and has anticoagulant properties. Prolonged and excessive use can increase the risk of bleeding disorders and compromise blood circulation to vital organs and tissues. Necrosis occurs when blood supply is significantly impaired, leading to tissue death. Regardless of the cause, the clinical features of chemically induced traumatic ulceration are generally similar. In general, the more caustic the agent is and the longer the exposure, the greater the tissue damage. Chemically induced oral ulceration can affect any oral mucosal site but more commonly affects the labial and buccal mucosa. The severity of chemical oral burns usually ranges from mild to moderate lesions, however, sometimes they can result in life-threatening damage and residual.

Following exposure to the caustic agent there is immediate erythema and edema of the oral mucosa and gingiva, with later formation of white slough pseudomembrane covering the underlying ulceration. The ulceration has an irregular border and bleeds easily. If there is involvement of the ductal openings of the major salivary glands a transient obstructive sialadenitis can arise[18]. Subsequent scarring of affected sites can cause permanent obstruction, chronic sialadenitis and require surgical excision of the gland[19]. The diagnosis of chemically induced oral ulceration is usually based upon clinical history and features. A history demonstrating chronological correspondence between a potential causative agent and the onset of the ulceration greatly aids diagnosis[20].

Histopathological examination of lesional and perilesional tissue is rarely indicated unless it is difficult to obtain an adequate history (this may be intentionally unclear or confusing) or if there is a suspicion of malignancy or potential malignancy. The histopathology of chemically induced ulceration typically demonstrates areas of focal coagulative necrosis of the epithelium, ulceration, intra- and extra-cellular edema and a sub-epithelial acute inflammatory infiltrate.

The treatment of oral ulceration due to chemical trauma principally requires identification and removal of the toxic agents. Most chemical burns are characterized by mild to moderate tissue damage that heals spontaneously within seven to

15 days without scarring[21], thus only palliative and symptomatic treatment such as gentle plaque control and rinsing with a topical anesthetic is required. In instances of more severe tissue damage, non-potent topical corticosteroids (e.g. triamcinolone) in a protective vehicle of carboxymethylcellulose may be helpful[22]. A bland diet may also be beneficial. Lesions occurring after extensive exposure to strong caustic agents may require local debridement and antibiotic therapy. Patients may present with symptoms such as discoloration, swelling, and pain in the upper lip area. The diagnosis involves a thorough medical history, physical examination, and, if necessary, imaging studies to assess blood flow and tissue viability. Preventing upper lip necrosis involves using aspirin according to recommended guidelines and under the supervision of healthcare professionals. Patients should be educated on the potential risks of aspirin abuse and the importance of seeking medical attention for any unusual symptoms. While upper lip necrosis specifically due to aspirin abuse is rare, it highlights the importance of responsible medication use. Healthcare providers should be vigilant in monitoring patients for potential adverse effects, and patients should adhere to prescribed dosages and seek medical advice if experiencing unusual symptoms.

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