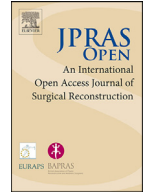




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Short Communication

Penetrating pressure ulcer of the lower lip caused by a tooth

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Letter to the editor,

Pressure ulcers are initiated by pressure that blocks blood circulation, leading to necrosis and ulceration of the mucosa and underlying tissues.¹ Uninterrupted pressure for as little as two hours can cause irreversible changes leading to ulceration.¹ Pressure ulcers are often developed over bone prominence and because of pressure combined with shear.^{1–4} If proper care is not given or etiology is not removed the ulcer continues to grow in diameter and will be difficult to heal.¹

Pressure ulcers in the oral mucosa can result in frequent pain and discomfort when the patient speak or eat resulting in a reduced quality of life.^{1,5}

We present a case with a persisting and penetrating ulcer of the lower lip caused by pressure from a tooth in an elder patient with dementia. Pressure ulcers in the oral mucosa are a rare occurrence and especially with involvement of the lip. In these cases, it's almost always related to endotracheal

Abbreviations: X-ray, X-radiation; MRI, Magnetic Resonance Imaging.

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tubes.¹ To our knowledge this is the first time a case with a penetrating pressure ulcer of the lip caused by a tooth is presented in literature.

An 82-year-old woman with Alzheimer's disease presented with a persisting ulcer of the lower lip. The patient was under medical examination because of unexplained weight loss and anemia. She was no longer able to use her teeth protheses due to discomfort caused by the ulcer. The ulcer was primarily treated as a fungus infection. The treatment had no effect, and the patient was referred to an oto-rhino-laryngologist. At this point the ulcer had been persisting for more than one month. The condition worsened leading to pain and further weight loss. Biopsies from the ulcer were taken, and an MRI scan of the throat, an orthopantomographic and an x-ray of the chest was performed. No abnormalities or signs of malignancies were found. Six weeks later the ulcer had expanded and penetrated the lower lip leading to drooling through the defect. A naso-gastric tube was placed for feeding. Renewed biopsies confirmed non-malignant findings. The patient was referred to the department of plastic surgery for lip-reconstruction. At the presurgical examination, the clinical findings included atrophic oral mucosa and a full-thickness defect in the left side of the lower lip. The skin edges were healed without any signs of ulcer, tumor, or infection. The defect was suspected to be due to pressure from the patient's dens caninus (dens no 33) since the tooth was protruding through the defect. Surgical wedge excision of the defect with frozen section biopsies and extraction of the tooth was performed in general anesthesia. The defect was closed directly in layers. Pathology exam confirmed non-malignancy. Four months post-surgery, the patient didn't have any ulcer re-occurrence, there was full oral continence and ability to eat (no need for the feeding tube), and the patient had gained weight. Unfortunately, the patient died from progression of known myelodysplastic syndrome 7 months post-surgery. There were no referrals or reports of recurrences of the ulcer after the 4-month follow-up.

The prolonged time to diagnosis was affected by the suspected malignancy at presentation and difficulty in recognizing pressure ulcers in the oral mucosa. In contrary to the three layers of the skin, the oral mucosa consists only of two layers, the stratified squamous epithelium and the deeper lamina propria.⁵ Depending on the region of the mouth the epithelium is either classified as non-keratinized or keratinized.⁴ The differences between the skin and the oral mucosa complicates the classification of the oral mucosa pressure ulcer stages as the presentation varies.^{4,5} Wound healing is characteristic by re-epithelialization, where the edges undergo proliferation and migration to replace the keratinocytes missing after injury.⁴ Oral mucosa ulcers show rapid re-epithelialization and reduction in scar formation, suggesting a greater proliferative capacity of the oral mucosa compared to the skin.^{1,4}

Many factors may have contributed to the severeness of the mentioned ulcer such as the patients' anemia, dementia and malnutrition. Malnutrition, hypoproteinemia, and anemia is a reflection of the patients overall status and can contribute to fragility of the tissue and reduced healing potential.¹ The chronicity often observed in these lesions is contributed by poor nutritional status and anemia which leads to decreased oxygen-carrying capacity of the blood and thereby to reduced healing potential.^{1,3} Age and cognitive impairment have also been found as contributing factors for an accelerated formation of pressure ulcers.^{2,3} Especially the age-related changes in skin elasticity, thinning of fat layers, sarcopenia and low intradermal vascular oxygenation and perfusion.³

The main treatment is to remove the cause and let the mucosa heal.¹ As demonstrated in this case successful treatment for penetration pressure ulcers of the lip can consist of a combination of removing the cause of pressure as well as surgical revision and reconstruction (Fig. 1).

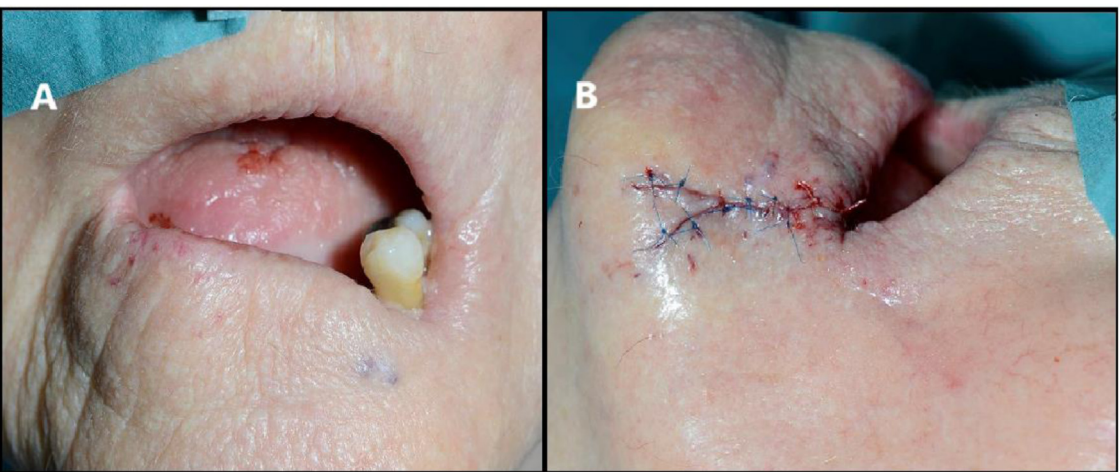


Fig. 1. (A) The wound before surgery. (B) Reconstruction of the defect.

Availability of data and materials

Data will not be shared due to personal information about the patient.

Ethics approval and consent to participate

Not applicable.

Consent for publication

The patient is deceased and do not have any relatives, therefore it isn't possible to obtain a consent to participate.

Authors' contributions

Both authors have contributed to the making of this manuscript. JOB was the surgeon in this case.

Competing interests

No competing interest from both authors.

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