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Chronic Trauma of The Oral Mucosa: A Literature Review

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Abstract: This article explores the causes and pathogenesis of decubital ulcers in the oral cavity, examining their clinical presentation, diagnostic methods, and treatment strategies. It places particular emphasis on distinguishing these ulcers from other types of ulcerative lesions of the oral mucosa. Modern treatment and prevention techniques are discussed, alongside potential complications arising from delayed intervention. The importance of early detection and the removal of the traumatic cause is underscored to prevent the development of chronic conditions or oncological issues.

Keywords: Decubital ulcer, oral mucosa, removable dentures, mechanical trauma, treatment, prevention, differential diagnosis.

Introduction: 1. Etiopathogenesis of Decubital Ulcers

Decubital ulcers in the oral cavity are caused by prolonged pressure or mechanical trauma to the mucosal tissue. Common contributing factors include poorly fitted or damaged dentures, orthodontic appliances, bruxism, and malocclusion. If left untreated, these ulcers can lead to secondary infections, chronic inflammation, or, in severe cases, the development of precancerous lesions. Effective treatment requires a comprehensive approach, and numerous studies and strategies are available to guide management [1,4].

Key factors contributing to decubital ulcer development include:

- Injury from sharp dental edges or poorly fitting dentures;
- Incorrectly positioned orthodontic appliances;
- Prolonged pressure from bruxism or malocclusion;
- Weakened local immunity and reduced salivation, especially in elderly patients [1].

According to Fitzpatrick (2020) and Kumar et al. (2019), these ulcers form as a result of sustained pressure on the mucosa, leading to impaired blood flow, ischemia, and tissue necrosis. Without timely treatment, the ulcers may become infected [5,8].

Fitzpatrick (2020) highlights the importance of understanding the trauma mechanism to facilitate accurate diagnosis and treatment, recommending the adjustment of dentures and diligent oral hygiene [5].

Kumar et al. (2019) explain that ulcers typically appear in areas where dentures, braces, or sharp tooth edges come into contact with the mucosa. The use of antiseptics and addressing local inflammation are crucial elements of therapy [8].

The pathogenetic process involves tissue ischemia, necrosis, and ulcer formation. Oral mucosa is

particularly vulnerable to infection after trauma. The severity and clinical course depend on the nature of the irritant, the duration and intensity of exposure, and the individual characteristics of the patient.

Traumatic agents can be mechanical, chemical, thermal, or radiation-related.

2. Clinical Presentation and Diagnosis

Decubital ulcers typically have a round shape with clear boundaries and are covered by a fibrinous layer. They are located at the points of contact with the traumatic source. Pain is common, especially during eating or speaking, and swelling or secondary infection may also occur.

Stages of ulcer development:

- Initial (erythema): Redness and swelling at the pressure site, moderate pain, burning, dryness, and tightness.
- Ulcer formation: A single ulcer with defined, smooth edges and a fibrinous base (grayish-white or yellowish). The depth of the ulcer depends on the intensity and duration of the trauma.
- Complicated course: If the traumatic factor persists, the ulcer enlarges, its edges become indurated and irregular, and secondary infection may occur, leading to pus formation and halitosis.

If the ulcer does not heal within 2-3 weeks, malignancy must be considered, especially in older patients or smokers.

The differential diagnosis includes aphthous stomatitis, herpes infections, allergic stomatitis, oral cancer, syphilitic ulcers, and tuberculosis-related lesions [2].

The primary diagnostic methods include clinical examination, patient history, and occasionally biopsy. O'Brien et al. (2018) recommend using standardized scales, such as the Bruna Scale, to assess the severity and guide treatment [11].

3. Treatment of Decubital Ulcers

Despite advances in treatment, challenges remain due to variability in therapeutic approaches and a lack of comprehensive data on long-term outcomes. Tanenbaum et al. (2020) and Turner et al. (2021) stress the need for further research to enhance treatment options [15,16].

Treatment involves both addressing the source of trauma and local therapy:

Local treatment:

- Antiseptics: Chlorhexidine, Miramistin, and other disinfectants are used to prevent infection [6,9].
- Pain relief and tissue regeneration: Anesthetic gels (such as Calgel, Kamistad) to alleviate pain, and epithelizing agents (such as Solcoseryl, Actovegin) to aid healing.

Prosthesis correction:

When dentures cause trauma, adjustments or replacements are necessary. Hsu et al. (2019) and Smith et al. (2021) emphasize reducing pressure on the mucosa by improving prosthetic designs [7,14].

Steps in treatment:

1. **Eliminate the source of trauma:**
   - o Adjust dentures;
   - o Smooth sharp edges of teeth;
   - o Correct or temporarily replace orthodontic appliances.
2. **Local therapy:**
   - o Antiseptics: Chlorhexidine 0.05%, Miramistin;
   - o Pain relief: Calgel, Kamistad, Lidocaine ointment;
   - o Epithelizing agents: Solcoseryl, Methyluracil, Actovegin;
   - o Anti-inflammatory medications: NSAIDs such as ibuprofen or diclofenac.
3. **Treat secondary infections:**
   - o Topical antibiotics (e.g., tetracycline or metronidazole ointments);
   - o Systemic antibiotics if severe, based on bacterial culture.
4. **General therapy:**
   - o Immunostimulants (e.g., echinacea, B vitamins);
   - o Nutritional support with vitamins A, C, E, and zinc.
5. **Surgical intervention (rare):**
   - o Removal of suspected malignancy;
   - o Reconstructive surgery to restore mucosal or functional integrity.

4. Prevention and Prevention of Recurrence

Prevention is key and should include:

- Ensuring proper fitting of dentures through regular dental check-ups;
- Practicing good oral hygiene, including daily cleaning of dentures;
- Using protective gels or creams when wearing orthodontic appliances for extended periods.

Timely treatment can prevent complications such as infections or chronic ulcers. Proactive measures significantly reduce recurrence.

According to Rosenblum et al. (2021), the following measures are important:

- Routine check-ups for denture adjustments;
- Regular orthodontic evaluations;
- Educating patients on proper hygiene and appliance care [13].

Zhu et al. (2019) highlight the advantages of using mucosal protectants in high-risk patients [17].

CONCLUSION

Treating decubital ulcers in the oral cavity requires a comprehensive approach involving early diagnosis, removal of the traumatic factor, local treatment, and prevention. Key treatment strategies include the use of antiseptics, anesthetics, epithelizing agents, and prosthetic or orthodontic corrections. Further research is necessary to optimize treatment and prevention methods.

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