

ASSESSMENT OF RISK FACTORS ASSOCIATED WITH
DELAYED HEALING OF ORAL MUCOSAL INJURIES IN
ORTHODONTIC PATIENTS

Novruzova Nafisa Orzujonovna¹,

Saidov Akbar Ahadovich²

Abu Ali ibn Sino Bukhara State Medical Institute,
Bukhara, Uzbekistan^{1,2}

ABSTRACT: *Traumatic injuries of the oral mucosa are common complications associated with fixed orthodontic appliances. Continuous mechanical irritation caused by brackets, archwires, and other orthodontic components may contribute to mucosal inflammation, ulceration, pain, and impaired tissue regeneration. Identifying clinical factors potentially associated with delayed wound healing is important for improving preventive and therapeutic approaches in orthodontic patients.*

Objective. To evaluate clinical characteristics potentially contributing to delayed healing of traumatic oral mucosal injuries in patients undergoing orthodontic treatment and to assess recovery dynamics following different therapeutic approaches.

Materials and Methods. The study included 116 patients aged 10–18 years with traumatic oral mucosal injuries associated with orthodontic treatment. The patients were divided into two groups: a main group (n=61), receiving an improved comprehensive treatment regimen, and a comparison group (n=55), receiving conventional therapy.

Clinical examination included assessment of pain intensity using the Visual Analog Scale (VAS), wound area and depth, hyperemia, edema,

epithelialization, and secondary infection. Treatment outcomes were monitored on days 1, 3, 7, and 14.

Results. Initial clinical examination demonstrated a mean pain intensity of 6.8 points and a wound area of 10.5 mm². By day 7, pain intensity decreased to 2.3 points in the main group and 2.9 points in the comparison group. Wound area decreased to 3.2 and 4.7 mm², respectively.

Epithelialization reached 85% in the main group and 78% in the comparison group on day 7. By day 14, these values increased to 100% and 95%, respectively.

The comprehensive treatment group demonstrated more favorable wound-healing dynamics, accompanied by reductions in pain intensity and local inflammatory manifestations.

Discussion. Persistent mechanical irritation, local inflammatory changes, and difficulties in maintaining adequate oral hygiene may contribute to unfavorable healing conditions. The observed differences between treatment groups indicate the potential clinical importance of combining the elimination of traumatic factors with local therapeutic interventions. However, the independent effects of individual risk factors require further investigation.

Conclusion. Traumatic oral mucosal injuries associated with orthodontic appliances require timely clinical assessment and appropriate preventive measures. Comprehensive treatment was associated with more favorable recovery dynamics compared with conventional therapy. Further studies are needed to establish the independent contribution of specific factors to delayed oral mucosal healing.

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