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CLINICAL FEATURES OF TEMPOROMANDIBULAR JOINT DYSFUNCTIONS IN PARTIAL TOOTH LOSS

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Abstract. Partial tooth loss is one of the significant factors affecting the functional condition of the dentoalveolar system and the temporomandibular joint (TMJ). This article presents the results of a clinical study of patients with partial edentulism and signs of TMJ dysfunction. The main clinical manifestations were studied, including pain syndrome, joint sounds, limitation of mandibular movements, and muscle tenderness. It was found that occlusal disorders and redistribution of masticatory load play a key role in the development of TMJ functional disorders. The necessity of comprehensive clinical and functional examination of patients before prosthetic treatment is emphasized.

Keywords: temporomandibular joint, partial edentulism, occlusal disorders, TMJ dysfunction, masticatory muscles, prosthetic treatment.

Introduction. Temporomandibular joint dysfunction remains one of the most relevant problems in modern dentistry. According to epidemiological studies, clinical signs of TMJ dysfunction are observed in a significant proportion of the adult population, especially in patients with dentition defects.

Partial tooth loss leads to changes in the morphological and functional state of the dentoalveolar system. The uniform distribution of masticatory load is disrupted, the lower facial height changes, occlusal interferences develop, and pathological mandibular movements are formed. These changes may contribute to functional and structural disorders of the TMJ.

The masticatory muscles and the temporomandibular joint function as a single biomechanical system. Therefore, any occlusal changes affect the condition of both muscular and articular structures. Long-term tooth loss leads to muscular imbalance accompanied by increased tone of certain muscle groups and overload of joint elements.

Despite numerous studies devoted to TMJ pathology, clinical manifestations of TMJ dysfunction in patients with partial edentulism require further investigation, particularly in the context of prosthetic rehabilitation.

Aim of the study — to determine the clinical features of TMJ dysfunction in patients with partial tooth loss.

Objectives of the study:

- to analyze patient complaints;
- to assess the condition of masticatory muscles;
- to evaluate the functional state of the TMJ;
- to determine the relationship between occlusal disorders and clinical manifestations of dysfunction.

Materials and Methods

The study was conducted at a dental clinic. A total of 52 patients aged 25–60 years with partial tooth loss were examined. The control group consisted of 20 patients with intact dentition.

Inclusion criteria:

- partial edentulism;
- absence of acute inflammatory diseases;
- informed consent to participate in the study.

Clinical examination included:

- medical history assessment;
- palpation of masticatory muscles;
- palpation of the TMJ area;
- measurement of maximum mouth opening;
- assessment of mandibular movement symmetry;
- joint auscultation;
- analysis of occlusal contacts.

Palpation of the masticatory muscles was performed both at rest and during functional load. Mouth opening amplitude was measured between the upper and lower incisors.

Statistical analysis was performed using descriptive statistical methods**.**

Results

In patients with partial tooth loss, signs of TMJ dysfunction were detected significantly more often than in the control group.

The most common complaints included:

- discomfort in the joint area;
- pain in masticatory muscles;
- clicking sounds during mouth opening;
- fatigue during chewing;
- limitation of mandibular movements.

Clinical signs of TMJ dysfunction were identified in the majority of patients in the main group.

Frequency of symptoms:

- joint sounds — 61%;
- masticatory muscle tenderness — 54%;
- pain in the TMJ area — 42%;
- mandibular deviation — 38%;
- limited mouth opening — 27%.

It was established that the severity of symptoms increased with prolonged absence of teeth and large dentition defects.

Analysis of occlusal contacts revealed premature contacts, decreased interalveolar height, and asymmetrical distribution of masticatory load.

Discussion

The obtained results indicate a close relationship between partial tooth loss and the development of TMJ dysfunction. Occlusal disturbances lead to changes in mandibular position and redistribution of masticatory load.

Muscle imbalance plays an important role in the pathogenesis of functional disorders. Increased activity of masticatory muscles may cause overload of joint structures and pain syndrome.

Adaptive capacity of the dentoalveolar system is limited. Long-term occlusal disturbances lead to persistent functional changes in the TMJ.

The results confirm the importance of early prosthetic rehabilitation in patients with partial edentulism to prevent TMJ dysfunction.

Conclusion

Partial tooth loss is accompanied by functional disorders of the temporomandibular joint. The main clinical manifestations include joint sounds, tenderness of masticatory muscles, and limitation of mandibular movements.

Comprehensive TMJ functional assessment should be performed in all patients with dentition defects before prosthetic treatment.

Timely restoration of occlusion contributes to normalization of masticatory system function and prevention of TMJ dysfunction.

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