

PROSTHETIC TREATMENT OF DENTAL ARCH DEFORMITIES: CLINICAL APPROACHES AND RESTORATIVE STRATEGIES

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Abstract: *Dental arch deformities represent structural deviations in the shape, continuity, and alignment of teeth caused by a combination of local and systemic factors, including the loss of one or more teeth, long-standing edentulous spaces, pathological tooth wear, tooth displacement (dystopia), and periodontal disease. Such deformations often lead to masticatory dysfunction, overload of remaining teeth, mandibular asymmetry, occlusal imbalance, speech disturbances, and, in some cases, temporomandibular joint disorders.*

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The primary goal of prosthetic treatment in these cases is not merely the replacement of missing teeth, but the reconstruction of the anatomical integrity of the dental arches, restoration of occlusal harmony, and reestablishment of functional balance within the stomatognathic system. Depending on the extent and type of deformity, as well as the condition of the supporting structures, various prosthetic solutions may be employed. These include removable prostheses (e.g., removable partial dentures with guiding planes), fixed prosthodontic restorations (bridges, veneers, inlays/onlays), and total removable dentures for complete arch rehabilitation. In many cases, preprosthetic orthodontic or surgical interventions — including osteotomy or ridge augmentation — are indicated to optimize the treatment outcome.

Special emphasis is placed on the integration of digital technologies such as occlusal simulation, 3D planning of tooth positions, and CAD/CAM fabrication of customized restorations. Clinical experience supports the effectiveness of a phased rehabilitation strategy, where temporary prostheses serve to stabilize occlusion prior to definitive treatment. Successful management of dental arch deformities requires a comprehensive and interdisciplinary approach, involving prosthodontists, periodontists, orthodontists, and maxillofacial surgeons.

Conclusions:

1. Dental arch deformities demand an individualized treatment plan that accounts for functional, aesthetic, and psychosocial factors.

2. The use of modern prosthetic systems, combined with digital protocols, provides stable and predictable outcomes.

3. Multidisciplinary collaboration and stepwise restorative planning significantly improve long-term treatment success.

