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LETTER TO EDITOR

Periodontics and Orthodontics -An Interdisciplinary Approach

Dear Editor:

In recent years advances in techniques, dental materials and growing public interest in developing and maintaining a healthy attractive smile, has resulted in a greater understanding of the interrelationships between Periodontics and orthodontics. A multidisciplinary approach is often necessary to treat and prevent dental problems in patients. Orthodontics and Periodontics are interrelated in variety of situations. However this article will address basic considerations for orthodontists as well as periodontists for successful outcome of various treatments.

Benefits of orthodontic therapy from periodontal perspective:

1. Aligning crowded or malposed teeth help in maintenance of proper oral hygiene by permitting better and easy access to clean all teeth surfaces.
2. Vertical orthodontic tooth positioning can improve various osseous defects in periodontal patients
3. Orthodontic treatment allows open gingival embrasures to be corrected to regain lost papillae
4. Orthodontic treatment can even create space for implant placement in situations like drifting and tipping of the adjacent dentition [1].

Orthodontic treatment of gingival discrepancies for uneven gingival margins: the relationship of gingival margins of the maxillary anterior teeth plays an important role in esthetics appearance of crowns. The four factors contribute to gingival forms are

1. The gingival margins of two central incisors should be at the same level
2. The gingival margins of central incisor should be positioned more apically than lateral incisor and same level as canines
3. The contour of labial gingival margins should mimic cementoenamel junction of the teeth
4. A papilla should exist between each tooth and height of the tip of the papillae is seen usually between the incisal edges [2].

To make correct decision, it's necessary to evaluate four criteria's

1. Check whether gingival discrepancy is displayed or not, if it is displayed then only treatment is advised.
2. If gingival discrepancy is displayed then evaluate the labial sulcular depth over the two central incisors, if shorter tooth has deeper sulcus then excisional gingivectomy is indicated, if the depth is equivalent then gingival surgery does not merely correct the problem.

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3. Evaluate the relation between shortest central incisor and lateral incisor, if shortest central incisor longer than lateral incisor then extrude central incisor and equilibrate incisal edge, if shortest central incisor is shorter than lateral incisor then orthodontic correction is not recommended.
4. Determine whether the incisal edges have been abraded, if incisal edge is thicker labiolingually than adjacent tooth, this indicates abraded and over erupted. Best method to correct is to intrude the shorter central incisor. It should be accomplished at least 6 months before appliance removal. This allows reorientation of the principal fibers of periodontium and avoids reextrusion of central incisors after appliance removal [3].

Orthodontic therapy for restoration of implant papillae reconstruction: The orthodontist takes leading role in establishing the ideal implant site by positioning the dentition especially the teeth immediately adjacent to the anticipated site in cases with diminished space due to mesial drifting of neighboring teeth. In some cases where teeth or roots are indicated for extraction, orthodontic extrusive remodeling procedures should be considered to enhance soft and hard tissue profiles. The extrusive movement can be valuable for the improvement of papillary height and allow for bone deposition beneath remaining roots and this can even minimize the need of future bone grafting [4]. Response of periodontal ligament to orthodontic forces : A strong forces lead to crushing of periodontal ligament on pressure side leading to degeneration of periodontal ligament produces hyalinization makes delayed tooth movement. A moderate force causes strangulation of periodontal ligament lead to delay in bone resorption. Light forces causes tooth movement continuous with simultaneous bone resorption and formation actually which is recommended [5].

Mucogingival considerations in orthodontic treatment of malocclusions: Maryland and Ochsebein [6] have postulated that the best solution to mucogingival problems is to initiate orthodontic treatment at its earliest stage of development during mixed dentition in order to avoid the more advanced gingival recession. The mucogingival problems in permanent dentitions are developmental problem. The apicocoronal dimension of keratinized tissue is affected by two factors.

1. The eruption patterns of the permanent incisors
2. The labiolingual width of alveolar process

Occasionally the labiolingual dimensions of alveolar process and gingiva is only slightly larger than labiolingual dimension of tooth. This will lead to insufficient width of bone and gingiva after the tooth has erupted. Influence of malocclusion on mucogingival treatment priorities; A specifically there are three instances where the tooth in question should be evaluated orthodontically prior to any mucogingival procedure:

1. When the involved incisor may be selected for extraction occasionally tooth size discrepancy problem requires the treatment plan of choice to be removed of one or more lower incisors.

If only the periodontists evaluates this he may overlook the possibility that the orthodontist may prefer to remove this incisor as the best way to manage orthodontically.

2. In areas where a tooth exhibits a mucogingival problem and is in labioversion, consultation with an orthodontist to determine if it's feasible to make the tooth lingually is advised. If tooth be moved back onto the ridge then it would be better to wait until after tooth movement to decide whether a mucogingival procedure would be still is necessary. Instructions concerning oral physiotherapy given to these patients were to use a soft bristled toothbrush in modified bass technique [7].

Conclusions

Where mucogingival problems exist in mixed dentition with no malposition of involved teeth, surgical procedures designed to eliminate the problem should be performed as soon as possible to prevent further break down. If malocclusion exists, consultation with an orthodontist would be advisable to find out what type of tooth movements and extractions can be anticipated. If a mucogingival problem exists coincidentally with a tooth in labioversion and orthodontic treatment planed including positioning teeth lingually over basal bone, then it would be advisable to perform the orthodontic therapy first, then mucogingival status should be reevaluated after orthodontic therapy has been completed to decide whether an additional periodontal treatment is indicated.

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