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The Orthodontic/Periodontal Interface Part 3

Abstract: Adult patients are increasingly seeking orthodontic treatment. It is essential to establish optimal periodontal health in these patients before embarking on such treatment, which demands the interaction between the general dental practitioner (GDP) and orthodontist for effective management. This article focuses on the management of periodontal disease in orthodontic patients, orthodontic considerations, retention and complications that may arise. This is demonstrated throughout a series of clinical cases treated within a multidisciplinary team. The management of patients with periodontal disease is often challenging; the clinical issues that require consideration are discussed throughout this article.

CPD/Clinical Relevance: This article provides a summary of the orthodontic and periodontal implications of different treatment techniques and management for the general practitioner.

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Adult patients are increasingly requesting orthodontic treatment. An epidemiological study at the Eastman Dental Hospital revealed that the number of adults undertaking orthodontic treatment has increased significantly, especially since 1985.[1] This may be due to social acceptability of appliance therapy, with the main motivation of adult patients being the desire to improve their dental appearance.[2]

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Adults can be excellent candidates for orthodontic treatment. They are motivated and co-operative, however, consideration must be given to the periodontal condition in this group of patients. Periodontitis is a common problem in adults. It has been found that 72% of adult patients have at least one site with clinical attachment loss (CAL) equal to or more than 3 mm.[3] Furthermore, the cumulative impact of periodontal challenges over a lifetime may result in older patients having more CAL.

Though plaque has a significant role in the aetiology of periodontal disease, the seminal work of Löe and colleagues[4] demonstrated that plaque alone is not the critical factor in disease progression. There is a complex interaction in the subgingival environment between disease-causing bacteria, their numbers and virulence within the biofilm and the host inflammatory response.[5] It is this inflammatory response that results in the collateral damage of tissue breakdown.[6] Many risk factors have been identified that may influence periodontal disease progression which are listed in Table 1.

The destruction of bone, periodontal ligament and connective tissue fibres joining adjacent teeth has a significant role in stabilization of the tooth position within the soft tissue environment.[7,8] Loss of this connective tissue attachment can lead to drifting, tilting or rotation of teeth (Figure 1).

Periodontally compromised patients often present with:

- Mobile teeth;
- Proclined incisors;
- Spacing due to drifting of teeth or early loss of teeth;
- Rotations;
- Overeruption of teeth.

It is essential that referring practitioners control periodontal disease before referral. The signs of periodontal disease include:

- Presence of plaque or calculus with inadequate oral hygiene;