Retention: a sensible, evidence-based approach
Dr Simon J Littlewood
Consultant & Specialist Orthodontist, UK

Challenge of preventing relapse
• Preventing relapse is arguably the most challenging problem for any orthodontist
• Aetiology of relapse includes both orthodontic factors (periodontal fibres/occlusal factors) and normal physiological changes or “aging” (growth and long-term soft tissue changes)
• If retainers are not worn, long-term unwanted changes after orthodontic treatment should be regarded as normal, not unlucky
• Long-term observational studies of patients who have not had orthodontic treatment show deterioration in the alignment of teeth, as a result of natural reduction of arch length, reduction in arch depth and reduction in intercanine width
• Currently the best way we know to prevent relapse long-term appears to be wearing retainers long-term
• There is currently a general lack of scientific evidence to support which type of retainer is best
• This lecture will discuss some of the potential challenges of asking patients to wear retainers long-term, including oral health issues and compliance

Oral health issues of long-term retainer wear
• Patients with bonded retainers have different oral flora. There is an intra-oral increase of bacteria capable of causing caries and periodontal disease
• Fortunately, most clinical studies suggest that provided good oral hygiene is maintained, this does not necessarily translate into active clinical disease
• There is however the potential for severe caries if patients have a high cariogenic diet, while wearing removable retainers, particularly full coverage vacuum-formed retainers
• Bonded retainers have the potential to move teeth into unfavourable positions if they are not placed in a passive position, or if they are distorted and become active
• It has been suggested that one possible cause of unwanted tooth movement as a result of bonded retainers may be due to commonly used twisted multistrand wires which could be unwinding

CAD/CAM Nitinol bonded retainers
• In an attempt to ensure a passive, well-fitting bonded retainer, commercially available CAD/CAM fabricated nitinol retainers are now available (Memotain®)
• These indirectly produced retainers offer the potential for a high-precision fit, customised to each patient. This may be particularly useful in the upper arch, where positioning is key to minimise occlusal trauma and distortion
• The nitinol material should allow good physiological movement, as well as being less likely to be distorted in use.
• This a relatively new product and a future prospective RCT is planned to investigate them further and this study will be discussed.

Compliance
• Compliance (better referred to as “adherence”) is key for removable retainers.
• Factors that affect adherence will be discussed
• A method of successfully improving adherence of removable retainers that has been tested in an RCT will be discussed

Simon J Littlewood, April 2017
www.littlewoodortho.com
References


