

THE RISE OF LINGUAL MORE DEMAND, FEWER ISSUES

In his second article on lingual orthodontics, Rob Slater discusses how the speech and discomfort difficulties associated with the technique are improving as demand for lingual appliance is rising

There are several reasons for patients to choose lingual appliances, but the one quoted most often is a desire not to feel self-conscious among friends and professional colleagues. Because they are invisible, lingual appliances provide the perfect solution.



Robert Slater completed his specialist training in orthodontics at Guy's Hospital in 1997 gaining an MOrth and MSc. In 2001, he opened South Birmingham Orthodontics and in 2007 he opened a private practice, One Devonshire Place, which was shortlisted for 'Best New Practice' in the Private Dentistry Awards in 2008. He is an Associate Clinical Teaching Fellow at Warwick University where he teaches on the Masters Programme in Lingual Orthodontics and is also an examiner on the Orthodontic Therapists Programme. He is a founding member of the British Lingual Orthodontic Society (BLOS) and, the immediate past Chairman.

There are a significant number of patients who opt for a mixture of lingual and labial appliances so that just the upper appliance is fitted lingually. This is because many patients do not have a great deal of lower incisor visibility during normal speech and as a result, do not mind having the lower appliance fitted labially.

SPEECH DISTORTION

In the past, patients who wished to hide their appliance completely may have been disappointed to suddenly find, once a lingual appliance is fitted, that they are unable to say anything without distortion to speech.

The older lingual appliances were very bulky, with many brackets being 3.5mm thick (Figure 1). In the last 10 years there has been a revolution in the development of a range of appliances that are smoother and far lower in profile, many of which are now around 1.5mm thick. The thickness of the appliance has been shown to have a major influence on speech as well as discomfort¹ and this is not just down to the bracket thickness but also how the brackets are bonded to the teeth with differing composite thicknesses (Figures 2 and 3).



Figure 2: An appliance bonded with thick composite

Didier Fillion published the results of a questionnaire survey² on a number of his patients in 1997 and found that 82% of patients felt that they were speaking normally within one month of starting treatment, but this still left 18% of patients with difficulties. It was also suggested that there was little hope of a solution to this problem. Caniklioglu et al³ compared a group of patients undergoing labial orthodontic treatment with a group undergoing lingual treatment and found that 90% of patients with lingual appliances suffered discomfort, with half of these reporting a high level of discomfort. Whereas



Figure 1: An older lingual appliance with large brackets



Figure 3: An appliance bonded with a much thinner composite layer



Figure 4: Low profile customised brackets



Figure 5: The same patient shown during the alignment phase



Figure 6: This patient opted for labial brackets in combination with upper lingual appliances



Figure 7: Close up view of a bulky bracket...



Figure 8: ...compared to a lower profile

in the labial group 27% suffered discomfort, all of whom reported the intensity of discomfort to be 'low to medium'.

Miyawaki showed that the levels of discomfort and speech distortion produced by upper and lower lingual brackets were very similar⁴, and that increased overbite and overjet both correlated with increased levels of discomfort and speech difficulty. A significant number suffered discomfort throughout treatment suggesting that adaptation for some patients is more difficult but also the treatment stages such as auxiliaries, and extraction space closure may have a part to play. It was concluded that a greater level of discomfort and speech difficulty was produced in patients with upper and lower lingual appliances when compared with a group who had upper lingual and lower labial appliances.

RECENT ADVANCES

It is apparent that the potential for speech issues is high, but much of the research is based upon the results of studies carried out on patients wearing much bulkier appliances (Figure 7). The situation seems to have improved hugely with the development of lower profile lingual brackets (Figure 8) but there are some patients who still struggle.

It is apparent from Fillion's study that there were no correlations on the factors

that he studied, between speech and other patient factors; but a statistical analysis of the factors was not published in his study. Speech problems that arise today are, for most people, a temporary issue and speech tends to return to normal within a few weeks of having an appliance fitted. The upper arch fixed appliance is normally fitted first and so it is important that patients understand that there will be a similar deterioration when the lower appliance is fitted. Rather interestingly, in cases with lingual upper and labial lower, more patients are now complaining of discomfort from the feel of the buccally positioned brackets near the buccal mucosae associated with the lower molar teeth, some indicating that this is worse than the lingual appliance that they had fitted on their upper arch of teeth.

Going back to speech, those who speak more in their work will develop strategies for fine tuning their speech if, for example, they have an aphthous ulcer or oral discomfort and it is these same strategies that come into play when getting used to the feel of a lingual appliance. Long wires will always produce discomfort but these are easily remedied with the use of wax or a silicone agent placed over the offending area. In my experience, the patients who often find it more difficult to cope are those who speak less, and who may be seen as quiet, less effusive people.

THE FUTURE

Speech, along with many other issues, could be studied further to help us to guide patients before they embark upon their lingual appliance treatment. Orthodontists should be in a position to guide prospective patients regarding speech and discomfort, in a balanced way, when they are referred for an opinion.

The web has meant that patients are often able to do this research prior to seeing an orthodontist. However, an Ipsos Mori poll carried out by the British Lingual Orthodontic Society (BLOS) last year, however, showed that around 72% of people in England and Wales had still not heard of lingual appliances; so there is every reason to expect that the demand will become higher in the future and patients will request information prior to being referred.

Acknowledgement : The author would like to thank Professor Bob Ireland at the Postgraduate Dental Education Unit, Warwick University, for his collaboration in a study which led to this article being produced



To find out more about the British Lingual Orthodontic Society, visit www.blos.co.uk

A full list of references is available. Please email: comments@ppdentistry.com

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