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Quo vadis aligner orthodontics?

Werner Schupp

In the last editorial, James Mah outlined the development of aligner orthodontics very nicely[1]. Aligner therapy has been around for a long time, but the breakthrough in modern aligner therapy was certainly due to Zia Chishti, who founded Align Technology in Sunnyvale, California, in 1997 and, with the professional and scientific support of Prof Boyd, made aligner orthodontics a useful treatment option right from the start. For many years, for those wishing to work with aligners, there was no real sound and practicable alternative. As a result, dependency on Align Technology grew. Little by little, however, other companies in the USA, China and Europe appeared on the market that were able to offer a product with which a sound and reliable aligner therapy is possible.

Despite everything, there remains a certain dependency, both professional and economic, on companies and thus on their software, material, aligner design and development, which many colleagues do not want to accept. The alternative is in-office aligner (IOA) therapy, which Krey, Elkholy and Lapatki have previously discussed in the Journal of Aligner Orthodontics (JAO)[2-5]. We certainly did not have this possibility around the year 2000 when we started administering Invisalign therapy. Today, on the other hand, software is available from different companies for virtual treatment planning, along with affordable printers for model production, and mono- and multilayer films for thermoforming aligners. As orthodontists, with these components we are completely independent and do not have to deal with the different interests of the various aligner companies, some of which even operate their own aligner shops. One of the main advantages of IOA therapy is that the virtual therapy planning, result and staging are carried out by us as orthodontists and not by laypeople. Despite this, in our experience, treatment planning is not necessarily more time-consuming for practices and certainly allows us to implement our own orthodontic point of view fully. As with multibracket therapy, the entire control of the treatment is in our professional hands. We also decide whether the aligner is scalloped or straight and which material and thickness are used for the movement. This is a significant advantage of the treatment. In his editorial, Krey clearly outlined the benefits of IOA therapy for training young colleagues[6].

As Mah rightly noted in his editorial, the future of orthodontics lies in aligner treatments, which will continue to repress multibracket treatments. It is therefore even more important that we continue to work scientifically in the area of customised aligner orthodontics, and especially in IOA treatment. We require more knowledge about which movements should be performed on which tooth at which stage. Which material and layer thickness do we need for the planned movement? Which elastic modulus and material strength do we need for expansion of the dental arch? Which material and thickness do we need for a derotation? Can we perform expansion and derotation at the same time? We do not have any well-founded scientific knowledge about these and many other questions. As practitioners, we should work more closely with universities on

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these subject areas. Many of us now have extensive practical experience in IOA treatment. Please continue to share yours, both positive and negative, that show us how far we have come. We look forward to hearing about your international experience.

Orthodontics remains an exciting and developing field. Let's take this path into the future together. Let's stay – or become – independent!

Werner Schupp

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