Creating a beautiful dental arch

Dr Stephanie Lingenfelder discusses the treatment of mandibular and maxillary crowding using In-Line Splints

More and more adults are willing to undergo orthodontic therapy for cosmetic reasons. However, they usually want the appliance to be as inconspicuous and comfortable to wear as possible.

In many cases, splint therapy can be applied successfully, e.g. in case of anterior crowding in the upper and lower jaw. In this case the anterior crowding was treated with In-Line splints from Rasteder Orthodontic Laboratory. (www.in-line.eu).

Initial Situation

The 29-year-old patient was not content with the position of the upper lateral incisors and expressed a desire to have them corrected with a therapy which should be as invisible as possible.

In addition to treatment with the near-invisible In-Line splint therapy the possibility of a lingual treatment was also explained to the patient.

A combination of mandibular lingual and maxillary plate apparatus would also have been possible, but this option was not acceptable to the patient because of the coverage of the palate and the resulting impairment of speech.

The proposal of a lingual treatment took into account the patient’s desire for an invisible treatment, which could also have rectified the deep overbite. Braces made of tooth coloured ceramics were rejected by the patient on aesthetic grounds.

In the interview the patient was comprehensively informed about the various treatment options. Among other things, he was shown a sample of an In-Line splint so he could get an impression of the material, the robustness and the thickness of the splint. This solution met his need for comfort. Wearing is comfortable, as the upper arch splints rest on the teeth only. The splints affect the patient’s speech only slightly and are visually barely noticeable.

Course of therapy

In this case, both the upper and the lower jaws were treated with five splints each. The patient was given new splints successively at individual check-up appointments, at intervals of approximately six weeks.

To create additional space, inter-proximal enamel was slightly reduced in the mandibular front area. Care was taken to ensure that the splints worn had done their complete work and were now seated precisely and without tension.

In this particular case, in the preparation of the splints a tooth movement of about 0.5 mm was undertaken.

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mm in the maxillary arch and of about 0.4 mm in the mandibular arch. Per-splint was programmed and implemented accordingly.

After six months, the treatment goal was essentially reached after the wearing of the fourth splint (Fig. 4 and 5).

By his compliance, the patient made a significant contribution to the excellent course of the treatment, since he had worn the splints for the recommended time of at least 18 hours a day.

Subsequently, the patient received the fifth pair of splints for finer adjustment and retention. For long-term stabilization, after initial hesitation on the part of the patient, a 5-5 wire retainer was bonded to the rear of the anterior segment of both arches.

Thanks to the patient's very good compliance, with In-Line splints the planned result was achieved in about the same time period and with comparable results as with fixed appliances.

Despite the difficulty of vertical tooth movements with removable splints, a slight bite elevation resulted in the anterior region (Fig. 6). The de-rotation and alignment of the mandibular canines also succeeded well, and the patient is very satisfied with the results achieved.

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