Contemporary Lingual Treatment with suresmile

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suresmile... a treatment option that allows us to achieve our treatment goals reliably and in a very short time.

These days our patients demand reliable, fast therapy that is as close to invisible as possible. The lingual treatment option from suresmile offers a perfect way for us to satisfy this demand.

suresmile is not just a system that lets us precisely render the position of the teeth and their roots at the start of treatment; it is also a treatment option that allows us to achieve our treatment goals reliably and in a very short time.

I have selected a case example to illustrate the efficiency and performance of suresmile Lingual.
Case No. 1:
Class I treatment with severe crowding and deep bite

Initial Observations

8/12
A 26-year-old female patient presented for consultation as a 2nd opinion in our practice with a Class I bimaxillary inclination of both arches with severe crowding, massive wear of front teeth and a distinct deep bite. Beginning gingival recessions in the lower front with a thin gingival tissue were observed; all third molars were impacted.

Treatment Plan

8/12
The patient was only interested in “invisible” therapy with lingual braces, but agreed to composite build-ups on the maxillary anteriors to achieve alignment of the upper teeth for an ideal gum line level.

The extraction of the third molars was recommended and accepted by the patient as precondition for further treatment. (Fig 1-3)
Fig 2
Pretreatment records

Fig 3
Pretreatment records
Treatment Preparation

9/12
Brackets were placed with an IDB tray based on a pre-treatment simulation from a diagnostic model. The space at the lower right lateral incisor did not allow immediate bracket placement and necessitated a partial scan at a later appointment. *(Fig 4)*

A CBCT scan to identify bracket and tooth position was done.

*Fig 4*
Treatment preparation
Treatment Simulation

9/12

Even though the global positioning of maxillary and mandibular jaw was not finally determined, the CBCT scan already revealed multiple bone recessions and fenestrations which were considered in the Plan1 simulation. (Fig 5)
Treatment Phase 1 and Partial Scan LR2

2/13

The first wires in both arches were 0.014” CuNiti mushroom preshaped for initial alignment, followed by 0.016” round and 0.016” x 0.016” suresmile CuNiti wires.

When changing to a 0.16” x 0.22” suresmile CuNiti in the upper arch, the still missing bracket on the lower right lateral was placed, followed by a partial scan. A full second set of suresmile wires for the lower arch was ordered, beginning again at 0.016” round CuNiti. (Fig 6,7)
Fig 6  
Treatment Phase 1

Fig 7  
Treatment Phase 1
Treatment Phase 2, Build-ups and tooth update

3/13
Composite build-ups were placed on the upper front teeth and a tooth update (as partial scan) was done. The patient was instructed to wear class II elastics. Wire changes in the lower arch were made, while digital STL-files were exported to order a set of aligners and a bimaxillary positioner. *(Fig 8-10)*
Fig 10
Composite build-ups and suresmile tooth update
Bracket Removal, Positioner and Aligners for Finishing

5/13
All brackets were removed and the patient was instructed to wear the positioner at nighttime and aligners during the day for at least 4 weeks.

End of Treatment

6/13
After 4 weeks, aligner and positioner treatment was completed; the patient was provided a pair of fixed retainers as well as an additional new set of aligners for retention. (Fig 11-12)
Summary

Treatment took a total of 9 months, during which lingual brackets were worn for just under 8 months. This treatment was more difficult because it proved necessary to bond sequentially as an additional partial scan was necessary for the lower right lateral incisor. The mid-treatment tooth build-ups in the maxillary anterior also necessitated an additional partial scan as a “tooth update.”

This clinical circumstance is precisely where the semi-open suresmile system is most effective, as it can be used not only for labial and lingual treatment, but also to produce removable devices. For this patient, the interplay of a variety of treatment techniques yielded a very good result, and above all a very short treatment period. Even though the lingual apparatus is invisible, patients are still quite relieved and grateful when the fixed appliance is removed. If the patient had rejected the finishing with removable devices, it certainly would have been necessary to change archwires 1-2 additional times, which would have lengthened the treatment time by approximately two months, even if the 5 weeks when she had to wear the positioners and the aligners are deducted.
Treatment highlights

- Total treatment time 9 months
  - Brackets worn for just under 8 months
  - 1 set of aligners worn just over 1 month
- Compressed wire technique used
- Sequential bonding for LR2 done
- Partial scan for LR2 taken
- The mid-treatment tooth build-ups for UR2-UL2 done
- Partial scan “tooth update” for UR2-UL2 taken

Wire Sequence Upper Arch

1) .014 Niti mushroom
2) .016 suresmile CuNiti
3) .016 x .016 suresmile CuNiti
4) .016 x .022 suresmile CuNiti
5) .017 x .025 suresmile CuNiti
6) .016 x .022 suresmile Eligiloy

Wire Sequence Lower Arch

Phase 1: First Wire Sequence

1) .014 Niti mushroom
2) .016 suresmile CuNiti
3) .016 x .016 suresmile CuNiti

Partial Scan

- Replaced missing brackets
- Partial scan of new brackets
- Order Plan 2
- Order Second Wire Sequence

Phase 2: Second Wire Sequence

4) .016 suresmile CuNiti
5) .016 x .016 suresmile CuNiti
6) .016 x .022 suresmile CuNiti
7) .017 x .025 suresmile CuNiti

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