Case presentation: OptiBond™ XTR

By Claude Finelle

This 85-year-old patient, who was in good health, came for a consultation to "improve his smile".

This was motivated by jokes made by his grandchildren about the condition of his teeth. Primarily, the 6 anterior maxillary teeth were involved. There was no particular request to lighten the smile.

During the first consultation, the clinical examination revealed the presence of numerous cervical lesions, as well as fractures of the incisive edges of 11 and 21.

The above-mentioned fractures of the free edges of the central incisors, the presence of a carious lesion on the mesial surface of 11, an old composite on the mesial surface of 21 and the patient’s complaint about the elongation of the two centrals led us to opt for two all-ceramic e.max crowns made of feldspathic ceramic reinforced with lithium disilicate. Taking into account the patient’s age, this therapeutic choice was not hindered by the proximity of a high volume of pulp.

We selected e.max in the hope of achieving better aesthetic integration, with its translucency allowing the saturated and natural appearance of the underlining preparations to show through.

This type of all-ceramic restoration allows us to take advantage of bonding, which appeared to us to be the best solution on the vital teeth. (We used the bonding agent to seal the dentinal tubules and improve the sealing of the cervical limits.)

We remedied the cervical wear on all of the teeth, including the central incisors (from 14 to 25). For this treatment, we used OptiBond™ XTR, a two-step, self-etching adhesive system (SAM2), and Miris composite in shade S6.

The central incisors were then prepared by cutting back the marginal limits inside the vestibular composite itself, in the manner described above.

We used the green-ringed tip (Komet) followed by the red tip bur for polishing, under heavy irrigation. The preparations were carried out with optical assistance (magnification X 2.5) and the limits were un gingival.

An impression of the 2 preparations was made during the same appointment. One week later, the two crowns, made by LNT laboratory in Paris, were delivered to the practice. They were tried in and then etched with 5% hydrofluoric acid for 20 seconds. Once the acid had been neutralised and the surface carefully dried, a layer of OptiBond XTR universal adhesive (bottle no. 2) was applied to the restorations’ internal surface shortly before application of the adhesive.

The advantage of OptiBond XTR is its ability to adhere to all types of prosthetic substrates without preparation or initial priming. This allowed us to perform our bonding procedures more efficiently, dealing with both restorations at the same time regardless of the prosthetic material. The adhesive treatment of the preparations was carried out with the same OptiBond XTR and, in this case, we applied a first layer of the primer, Optibond XTR Primer (bottle no. 1), which was brushed onto the enamel and the dentine for 20 seconds and then dried for 5 seconds. We were careful to dip the brush in several times during the application process, to ensure fresh acid was being brought into contact with the dentinal surfaces each time and to optimise etching.

Before applying OptiBond XTR Adhesive (bottle no. 2), we were careful to shake the bottle lightly to ensure homogeneity of the adhesive.

1. Initial clinical presentation. The patient’s concerns were aesthetic and focused on the upper dentition.
2. Creation of two ceramic crowns in e.max.
3. The crowns were etched with 5% hydrofluoric acid for 20 seconds. Note the white, chalky appearance on the margins.

OptiBond XTR and NX3
The perfect combination

XTR and NX3 are so good, you can use both in total dark cure without any additional self-cure activator. The combination of OptiBond XTR + NX3 Automic cement demonstrated better indirect dentin bond strength to the Munive Cementation System.

Study performed by Stalco University New York, Buffalo.

OptiBond XTR and NX3
Some things are just meant to be. The powerful chemistry of OptiBond XTR provides high and predictable self-etch bond strengths, while NX3 resin cement brings unmatched aesthetics, and excellent colour stability.

Put the two together, and you’ve got the perfect match for all your indirect restorations without self-cure activator and additional primers. Try OptiBond XTR and NX3 in your practice. Great on their own – even better together.
Two phase treatment of a Class II division I patient complicated by traumatic upper incisor intrusion: A Case Report

By Dr. Roelien Stapelberg

Phase I

A female patient presented at the age of 7 years and 8 months with the complaint that one of her upper teeth was absent. She had a mild thumb-sucking habit with a tongue thrust. She had a Class II division 1 incisor relationship on a Class II skeletal base with mildly decreased vertical facial proportions.

Extra-oral examination (Figure 1a-c)

Extra-orally the patient presented with a Class II skeletal pattern convex profile and accentuated labiometal fold. She had acceptable vertical facial proportions. The frontal examination revealed acceptable facial symmetry and balance, with the upper central incisor coincident with the midfacial axis. Soft tissue examination demonstrated thin upper and lower lips with mild incompetence, as well as an acute nasolabial angle. The lower lip was retrusive to Rickett’s E-line.

Intra-oral examination (Figure 1d-h)

The patient was in the early mixed dentition and had good oral hygiene. There was no history of dental caries, and no active dental caries. Mild generalized extrinsic staining was present. Furthermore there were no restorations present. The maxillary arch was symmetric and tapered, whereas the mandibular arch was square and symmetric. Both arches had no space deficiency and had well aligned buccal segments. The upper right central incisor was missing, and the upper left central incisor was protruded. In occlusion, the overjet measured 10mm, with no overbite present. The molar relationship on the left was full Class II, and the right side was ¼ Class II.

The lower centerline was 2mm to the left of the upper centerline, which was coincident with the facial centerline. There was no crossbite or displacements. The Dental Health Component (DHC) of the Index of Orthodontic Treatment Need (IOTN) was 5l, and the Aesthetic Component (AC) was 9.

Radiographic examination (Figure 2a,b)

The DPT demonstrated that all second molars were present and developing, as well as the lower third molars. The upper right central incisor seemed to be horizontally impacted. The cephalometric analysis confirmed our clinical findings of a Class II skeletal pattern with an ANB of 7°. The Wits appraisal confirmed the Class II skeletal pattern with a measured 7.5 mm. The vertical proportions were slightly decreased, demonstrated by the maxillary-mandibular plane angle of 92.7° and face height ratio of 52.1%. The upper incisors were severely proclined at 128.5°, as was the lower incisors at 106.0°. The lower incisors were retruded relative to the APo line with a measurement of -0.8mm.

Problem list

1. UR1 Horizontally impacted
2. Class II skeletal pattern due to mandibular retrusion
3. Convex profile
4. Increased overjet
5. Lower centerline 2mm to the left of the upper centerline
6. Aims and Objectives
7. Facilitate eruption of UR1
8. Correct Class II skeletal pattern by encouraging mandibular growth
9. Improve facial profile
10. Decrease overjet to within normal range
11. Maintain coincident centerlines
12. Maintain treatment until comprehensive orthodontic therapy

Treatment plan

1. Upper hybrid TPA - tongue crib appliance to assist in breaking the thumb sucking habit and relieve the present tongue thrust, while reinforcing the anchorage of the UR1 & UL1.
2. Upper 2x4 pre-adjusted edgewise fixed appliances (0.022” x 0.028” slot) with MBT prescription. Upper utility arch 0.016 SS with an open coil spring to create and maintain adequate space for the UR1. A 0.016 NiTi open coil spring was utilised to create the necessary space for the UR1.
3. Surgical exposure of the UR1 to alignment with the archwire was 5 months.
4. Bonded upper fixed retainer to UL1 to be maintained until comprehensive orthodontic treatment phase completion.

After the manufacture of the upper hybrid TPA tongue crib appliance, it was inserted and the bonding of the upper with 2x4 fixed appliances with MBT prescription was placed. An 0.016 SS utility arch wire was placed with elastomeric ties, and the patient was referred for surgical exposure of the UR1 to alignment with the archwire. The UR1 was bonded, and an upper fixed retainer from UR1 – UL1 was placed.

Conclusion

When the position of the UR1 was at an adequate level, it was engaged on the 0.016 SS with an elastomeric tie. The time period from surgical exposure of the UR1 to alignment with the archwire was 5 months. The patient was referred for surgical exposure of the UR1 – UL1.

Treatments Assessment (Figure 1a-g)

Case one was a 7 and 8 years old Caucasian female presenting with a Class II division 1 incisor relationship on a Class II skeletal base with mildly decreased vertical facial proportions. The mandible was retrognathic, and the maxilla normal. The malocclusion was compounded by a horizontally impacted UR1. The patient presented with no space deficiency. The upper centerline with on the facial midline, and the lower centerline was 2mm to the left of the upper. The molar relationship was full unit Class II on the left and ⅝ unit Class II on the right.

Phase I treatment was deemed appropriate, and consisted of a hybrid TPA-tongue crib appliance with a 2x4 upper pre-adjusted edgewise fixed appliances (0.022” x 0.028” slot) with MBT prescription. Surgi-