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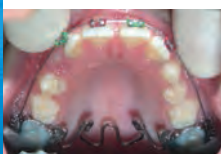
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2. Case: Ea, female, age 10 years 8 months. TP: CLII div I malocclusion treated with the NiTi transpalatal Rotator and 16x22 Beta-ti and RCS intrusion / bite-opening wires. *p 161*



3. Case: Mi, female, dental age 10.5. TP: Use of NiTi Expander to: correct $\frac{3}{4}$ CLII molar, gain 6 mm of space for 13, gain space to be able to shift the maxillary M-L 2 mm to the left (need 2mm of space on left side to correct). No CLII elastics were used in the treatment. *p 167*



4. Case: Le, female, dental age 11. TP: Use of the HA NiTi Expander, an intra-oral molar distalizer using a lock-stop with compressed O-C spring, and CLII elastics to correct: CLII molar with open-bite tendency, unilateral X-bite with mandibular slide, deviation of both midlines, and the lack of space (13 mm) in the maxillary arch and 6 in the mandibular. Use of delta elastics for final bite settling. *p 170*



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8. Case: Ls, boy, age 12 years, dental Age 11 years. TP: Use of the NiTi Transpalatal Rotator, RCS NiTi wires and asymmetric CLII elastics to correct a severe CLII div I, OJ = 12 mm, OB = 6 mm and soft tissue dysfunctions. *p 226*



9. Case: Mn, boy, 11.5 dental years old (13 chronological age.) TP: Use of NiTi Rotator, 16x22 Beta-ti and 17x25 RCS intrusion wires, High-pull Head Gear and asymmetric CLII elastics for the treatment of: Full CLII div II, severe OB = 9 mm, OJ = 5 mm, very deep CoS, gummy smile, maxillary vertical excess. *p 232*



10. Cases: 6 cases with different problems demonstrating the use of [Bite Ramps](#) combined with the SWA and its auxiliaries. Discussion on so called “self-ligating bracket systems”. *p 238*



11. Case: K, female, 10 years old. TP: Use of NiTi transpalatal appliance, mandibular fixed lingual anti-tongue thrust appliance, maxillary 16x16 steel “extrusion wire”, CLII and box elastics to treat: CLII div I with anterior incisor flaring, anterior open bite of 4mm and severe soft-tissue dysfunctions. *p 251*



12. Case: Ma, female, age 13. TP: The use of the SWA, CLII elastics and box and delta bite closing elastics to treat: CLII div I, 12 mm OJ, 4 mm anterior open bite, and soft tissue dysfunctions that occur during swallowing and speaking. Use of finishing Step-bends to create additional anterior overbite. *p 257*



13. Case: Na, female, 13 years old. TP: Use of High-pull HG, “auxiliary 16x22 *extrusion wire*”, fixed lingual arch anti-tongue appliance and bite-closing elastics to treat: CLII skeletal, soft tissue dysfunctions, 6 mm anterior and posterior open bite, tongue habit with soft tissue dysfunctions, a vertical growth pattern with a steep MPA and a convex profile. *p 265*



14. Case: Pr, boy, 11.5 years old. TP: use of NiTi Transpalatal appliance, High-pull HG, NiTi CLII Corrector (a fixed functional appliance) and elastics to treat: CLII div I, maxillary vertical excess, OJ = 10 mm, OB = 6 mm, dolichocephalic, long face vertical growth pattern, convex profile, high MPA (46°) and soft tissue dysfunctions. Treatment of an impacted canine. Delta elastics for final occlusal interdigitation. *p 271*



15. Case: Do, boy, 12 dental years old. TP: Use of Transpalatal NiTi Expander, high-pull HG, NiTi CLII Corrector and elastics to treat: Full CLII div I, OB = 6 mm, OJ = 12 mm, convex profile, severely narrow palate with Vertical Maxillary Excess, and strong dysfunctional habits. *p 292*



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Extra-oral:

- Cervical and Combi Head Gear. *p 309–326*

Intra-oral:

- Sliding Yoke combined with CLII elastics. *p 327*
- Various laboratory intra-oral appliances. *p 338*
- “Mini-screw distalizer system”: using mini-screws to provide “anterior anchorage” against the reactionary forces of a compressed (using lock-stops) +300 gr O-C spring. *p 340*
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Chapter 17 p 351

CASES: CLIII non-extraction: mixed dentition and adolescent.



1. Case: JI, female, dental Age 11. TP: the SWA, 16x16 UAW, and CLIII elastics to treat: CLIII skeletal growth pattern: Wits = -4. p 351



2. Case: Mk, boy, 13.3 years old, dental age ~11.5. TP: Use of SWA with archwire expansion, O-C springs, CLII elastics, and delta elastics for bite settling to correct: CLIII with unilateral X-bite due to a mandibular slide to the right. Correction of the maxillary midline that is shifted to the left. p 359



3. Case: Jn, boy, age 13 years. TP: use of NiTi Expander and CLIII elastics to resolve *non-extraction*: The severe CLIII skeletal/dental, with bilateral posterior and anterior x-bite, due to a previous orthodontic treatment that was improperly done. Use of the mandibular 19x25 NiTi wire with 20° lingual crown torque to aid in resolving the problem of hyper labially-tipped incisors. Re-bracketing used for final occlusal finishing. p 364

4. [Workshop 8: Expansion wire](#) used to correct CLIII X-bites. p 370



5. Case: Sr, boy, dental Age 10.8. TP: Use of a 16x22 Beta-ti expansion wire in a 2x4 situation to correct an anterior (CLIII) X-bite in a case with a "functional" CLIII due to dental interferences. p 371



6. Case: Bt, male, age 14 years, dental age 12. TP: Use of a steel expansion wire, X-elastics, CLIII and bite closing elastics to correct: a unilateral X-bite due to a mandibular slide, posterior and anterior X-bite, the CLIII dental and skeletal occlusion and the lower midline. Profile problem: the upper lip is flat and the lower lip is too prominent. Thus, must develop/enlarge the maxillary arch in all directions and reduce the prominence of the mandibular arch. p 378



7. Case: Tm, boy, 11 dental years old. Example of a "set-up" using HA NiTi Expander, wires and lock-stops to correct a CLIII (mandibular slide) with bilateral posterior and anterior cross-bites. p 389



8. Case: Ad, female, dental age 11. Skeletal functional problem: mandibular slide causing an A-P (functional) problem. TP: Maxillary 16x22 Beta-ti expansion wire. Distalization of the mandibular teeth into existing natural spaces in order to correct the CLIII dental and skeletal anterior X-bite using CLI space closure techniques (like a mini-extraction case). *p 390*



9. Case: Boy, age 13. TP: The NiTi transpalatal Expander is used for the following reasons: the “regaining” of significant space is indicated (maxillary arch: 14 mm); to correct a CLIII (with posterior and anterior X-bites) due to a significant mandibular slide; the palate is narrowed and V-shaped; the maxillary molars are severely rotated meso-lingually; there is a need to vertically stabilize the maxillary arch. *p 394*



10. TP: Use of the NiTi Expander, archwires, O-C springs, CLIII and oblique elastics to correct: CLIII skeletal/dental with bilateral and anterior X-bites, severe maxillary crowding, “CLIII Look” with a protruded mandible and retruded/underdeveloped maxilla with concave upper lip, and soft tissue dysfunctions. Inversing 180° the maxillary lateral brackets in order to labially torque the roots of the laterals. *p 397*

Chapter 18 *p 403*

Anchorage in space closure when using the SWA.

- Optimal forces *p 403*
- Different anchorage situations *p 403*
- Methods to control anchorage *p 404*

Chapter 19 *p 407*

Extraction treatments: Space closure and tooth movement using sliding mechanics.

- Levelling considerations *p 407*
- Forces used for space closure *p 408*
- Different anchorage situations and the variations thereof: Moderate, Maximum, Minimum *p 409*
- Clinical situations that can occur during space closure *p 410*
- Space closure and tooth movement in non-extraction cases *p 412*

Chapter 20 p 413

CASES: Extraction treatments: diagnosis and space closure mechanics in CLI and CLII cases.



1. Case: Rf, boy, age 13 years. TP: *4 premolar extraction treatment using en masse, reciprocal, CLI space closure* (200gr NiTi coil springs) to treat an esthetic problem: “teeth too far forward” (protrusive) with BIPRO look, convex profile, slightly elevated MPA. Functionally the patient does not have proper lip closure (forces lips closed). p 413



2. Case: Adult. *Maximum anchorage*. TP: treatment using O-C springs (010x030) to push cuspids distally. The distalizing forces from these springs push the cuspids toward their final positions, and as there are no mesial forces on the posterior segments, there is maximum posterior anchorage. p 420



3. Case: Aa, female, 15 years old, CLI occlusion. TP: 4 premolar extraction treatment, *moderate anchorage becoming maximum anchorage* (cuspid first distalization followed by en masse distalization of the incisor segment) to correct: the facial esthetics (convex profile, high MPA with BIPRO look due to protrusion and crowding of the anterior segments). Use of re-bracketing for final finishing. p 424



4. Case: Ge, young adult female, 14 years old. CLI, crowding, high MPA, BIPRO look with convex profile. TP: *Maximum anchorage* using CLI forces for cuspid first distalization followed by CLII en masse retraction of the maxillary incisor segment. Use of re-bracketing for final finishing. p 432



5. Case: Female, 12.5 years old; dental age 11.5 years. CLI dental and skeletal with agenesis of 41 & 31. TP: *Minimum anchorage mechanics* to advance the mandibular posterior teeth using a combination of: lock-stops with compressed O-C springs, CLI and CLII elastics and 200gr NiTi closing springs. p 440



6. Case: Mo, adult female, CLI with crowding. TP: *moderate anchorage is changed to minimum anchorage*: CLI forces are used to “advance first” the 2nd premolars, then after they are advanced, the molars are advanced – all without distalizing the anterior segments. Occlusal inter-digitation using delta elastics. p 451

7. *Orthodontic Camouflage and Orthognathic Surgery* p 457

- Camouflage CLII p 457
- Camouflage CLIII p 459
- Orthodontics combined with surgery. p 461



8. Case: Pa, adult female, CLII dental and skeletal. This case describes the limits of *non-extraction camouflage CLII* orthodontic treatments in non-growing patients. Use of “Short CLII elastics”. p 464



9. Case: Ae, adult female, CLII dental/skeletal. The use of the HA transpalatal appliance to disto-rotate and distalize the maxillary 1st molars in *the correction, non-extraction, of an adult CLII malocclusion*. p 469



10. Case: Pe, adult female, Full CLII occlusion, Wits +6. TP: *Camouflage CLII extraction therapy* (extraction of 2 maxillary premolars). Levelling with RCS intrusion wires to reduce the “gummy smile”. Space closure combines CLI and CLII forces. Composite veneers used on undersized maxillary laterals. 19x25 NiTi wire with 20° additional torque used for additional labial crown torque to the maxillary incisors. Use of re-bracketing for final finishing. p 472



11. Case: Kt, adult female, Full CLII dental/skeletal (Wits +8). TP: *camouflage CLII, extraction of 4 premolars*. Protrusion of maxillary incisors, severe mandibular crowding (20mm). Demonstration of problem solving: imprecise bracketing and mechanics. p 483



12. Case: Je, adult female, 19 years old. Full CLII dental and skeletal (Wits +9), 8 mm OB, 6 mm OJ, deep curve of Spee (4 mm), moderate crowding. TP: *Camouflage CLII extraction therapy*. Use of RCS wires for bite opening with incisor intrusion, sliding yoke for unilateral maxillary molar distalization. CLII elastics for final en masse space closure, midline correction and bite opening. Delta elastics for settling-in the occlusion. p 493



13. Case: Ae, female, 18 years old. TP: Extraction of 3 premolars and 1 molar to correct a dental and skeletal CLII with a BIPRO Look. Problems to solve: *Moderate anchorage becomes minimum anchorage*. Use of mini-screw. Re-bracketing and the use of the 19x25 NiTi wire with additional labial crown torque for final finishing. p 533



14. Case: Ie, adult female. Patient complains about unsightly smile with crowding. TP: *Camouflage CLII* with extraction of 2 upper premolars to correct: a full CLII skeletal and dental. CLI en masse space closure combined with CLII asymmetric forces. Composite veneers for undersized maxillary laterals. p 542



Chapter 21 p 553

CASES: Extraction treatments: diagnosis and space closure mechanics in CLIII cases.



1. Case: Pl, adult male, 30 years old. Full CLIII dental (Wits = -6), bilateral posterior and anterior x-bite, crowding, CLIII Look and profile, and anterior open-bite. TP: *CLIII camouflage extraction therapy*. Use of HA NiTi transpalatal Rotator, wires, O-C springs, closing springs and elastics for the treatment of the full CLIII malocclusion. p 553



2. Case: Wy, adult female. Full CLIII with anterior and posterior X-bite, severe crowding. TP: *Camouflage CLIII with unilateral extraction; asymmetric/unilateral space closure*. Use of CLIII and CLI asymmetric forces for en masse distalization of the lower anterior segment and correction of the midlines. CLII, CLIII, oblique and delta elastics for final finishing. p 562



3. Case: Ne, adolescent female, 14 years old. Full CLIII, bilateral X-bite, severe crowding. TP: *camouflage CLIII* with extraction of 4 premolars. BIPRO characteristics. For space closure: use of O-C springs for "cuspid first" distalization (33, 43), and CLI and CLIII forces. Box and delta elastics for closing the open bite. Re-bracketing and delta elastics for finishing. p 573



4. Case: Le, adolescent female, age 13. Full CLIII dental and skeletal (Wits -3.5), anterior open bite (5 to 7mm) with bilateral posterior and anterior X-bite. Mouth breather. Poor lip posture. Tongue interposition. Long face type. TP: *camouflage CLIII* with extraction of 36, 45. Use of archwires with expansion. *CLIII en masse space closure* of the lower anterior segment of 9 teeth. *CLI "minimum anchorage" space closure* to advance lower molars. Box elastics for final closure of the open bite. p 581

Chapter 22 p 589

Orthodontic treatment combined with Oral Surgery

- Description of the most common orthognathic surgeries used today.
 1. The Lefort I down-fracture p 589
 2. The BSSO of the mandible p 593
 3. The corticotomy of the palate (surgical expansion) p 598
 4. The genioplasty p 599
- How to differentiate and to diagnose a surgical case from a non-surgical one.
- The handling of surgical orthodontic cases (these cases are treated differently than routine orthodontic cases): What may be a simple GM treatment in a young patient becomes a surgical case in adults.
- Maxilo-facial surgeries are combined with orthodontics to treat severe dento-facial problems of any type.
- Surgical treatment is for those orthodontic problems that are so severe that neither Growth Modification nor camouflage extraction therapy offers an acceptable dental, occlusal and esthetic solution.
- Surgery is used to correct skeletal problems of the jaws and/or problems of the dento-alveolar segments.
- Both jaws and the chin can be repositioned in all 3 planes of space.
- Diagnosis and Treatment planning.
- Pre-surgical orthodontic treatment.
- The surgical procedure.
- The post-surgical orthodontic treatment and finishing.

Chapter 23 p 601



The following 3 cases demonstrate the use of orthodontics in preparing a patient before prosthetic and esthetic restorations. They demonstrate the use of orthodontics to correct a malocclusion beforehand in order to prepare an optimal occlusal base. Without this, the restorative treatment would be compromised to the extent that it would be impossible to have a pleasing esthetic result along with an acceptable occlusion.



1. Case: La, adult female. Full CLII div I, Wits +6, OJ = 9 mm, OB = 5 mm, deep CoS. X-bite 16 & 17. TP: Patient would like to replace the fixed bridge from 11 to 22 and have made a porcelain veneer on 12. *Camouflage CLII extraction treatment* will be completed first to correct the OB & OJ and to create space in the anterior segment such that the crowns can be made larger and more attractive. En masse asymmetric space closure using CLI closing springs and CLII elastics. Tooth whitening. New porcelain bridge 11 to 22 and a porcelain veneer on 12. p 601



2. Case: Ce, adult female. CLI skeletal, slight crowding, missing molars (36 & 46), mesially inclined molars (37, 38, 47, 48), super-erupted molars (16 & 26). TP: improve the smile and occlusion with orthodontics so that the missing posterior teeth can be properly restored with implants or bridges. Use of the SWA, wires and elastics. Bracketing technics to improve the Smile esthetics; tooth whitening. *p 607*



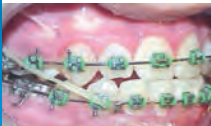
3. Case: Js, adult. CLIII with severe crowding and severely worn down teeth. After extraction of 2 lower teeth, the arches will be leveled in order to correct the CLIII malocclusion. After, the maxillary arch will be restored (bridges and crowns on all the teeth) and then the mandibular arch (crowns and veneers on the front 6 to 8 teeth) to support the new occlusion and for esthetic reasons. *p 616*



Chapter 24 *p 621*

Stripping and Air Rotor Slicing. These procedures are used to gain small amounts of space as needed in various dental arch segments/quadrants to alleviate minor crowding, to camouflage a small CLII or CLIII skeletal/dental problem or to correct midlines. Slicing can be used in place of premolar extractions as a conservative space gaining method.

The following 3 Cases demonstrate the protocol for Slicing and Stripping. *p 624*



1. Case: Nk, adolescent male, 13.5 years old. Bilateral posterior dental X-bite. 1/2 CLIII dental with severe crowding. TP: CLIII malocclusion will be treated with slicing and CLIII elastics. Use of delta and box elastics for bite settling. *p 624*



2. Case: Re, adult, CLII dental & skeletal (Wits +8). Severe crowding, deep CoS, super-erupted lower incisors. CLII profile with retruded chin. Patient would like "esthetic dentistry": recommended orthodontics beforehand and then the patient could have a much superior Esthetic Dental treatment. TP: extract 2 lower teeth (to relieve 19 mm crowding). Space closure by compressed O-C springs. Slicing of the maxillary left quadrant to provide space for the correction of the midline and CLII canine. Use of CLI and CLII elastics for space closure and to correct the CLII occlusion and the midlines. *p 636*



3. Case: Ae, adult. Skeletal CLI. Moderate to severe crowding. Anterior open bite tendency. Cross bite 12. Missing 14, 24 and 32 (extracted for a previous "orthodontic treatment"). TP: teeth straightened for a nicer smile. Slicing will be used to solve the problems created by the previous extractions so as to obtain a more optimal occlusion. 33 will be sliced and reshaped as 32, and 34 will become 33, etc. Use of unilateral CLII elastic combined with an oblique elastic. *p 649*



Chapter 25 *p 663*

Mini-screws: an overview of the uses of mini-screws (TADs).



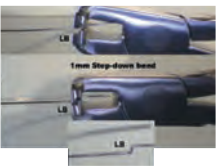
Chapter 26 *p 681*

Impacted teeth: an overview of impacted teeth (7 different cases).



Chapter 27 *p 691*

Lingual orthodontics: 2-D, Simplified Lingual technique. An affordable system that can be used to align mild to moderately crowded anterior segments. Use of indirect bracketing that can be prepared by the doctor and/or the staff in the office.



Chapter 28 *p 697*

Finishing bends: Step-up/step-down. Step-in/Step-out.
Bends can be made in HA NiTi wires using step pliers that are available in various size steps from 0.25 mm to 3 mm.



Chapter 29 *p 699*

Removing the SWA, finishing and polishing the teeth surfaces, placing fixed lingual wires and removable Hawley retainers.