PROBLEM SOLVING IN ORTHODONTICS

INcludes:
OVERVIEW ON CLINICAL SITUATIONS FREQUENTLY ENCOUNTERED IN ORTHODONTIC TREATMENTS
MECHANOThERAPY USED TO RESOLVE THESE SITUATIONS

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Goals: This course should enable the resident to:
1. Know the different methods for obtaining a determined orthodontic movement.
2. Understand the philosophy of different techniques used in contemporary orthodontics.

Objectives: At the end of this series, the resident should:
1. Know in depth the mode basics and indications of different orthodontic treatment techniques.
2. Be proficient in applying the mechanotherapy of each technique, or an amalgamation of different techniques, with in depth comprehension of their mode of action, its effects and side effects.
3. Know the precautions to be taken to prevent or minimize undesired reactions.
COURSE DURATION AND SCOPE: This course is scheduled between January and June for the first and second year residents. It is given every Monday at a 2-hour session between 8:00 a.m. and 10:00 a.m. and imparts fundamental knowledge on the orthodontic mechanotherapy used to resolve clinical problems frequently encountered.

POLICY ON EXAMINATIONS: One examination is given for this course, usually during the final examination in July.

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SUMMARY OUTLINE

- MECHANOTHERAPY USED IN THE MOST FREQUENT ORTHODONTIC MOVEMENTS
  - .018 VERSUS .022

SLOTS: ADVANTAGES/DISADVANTAGES
  - 0˚ VERSUS PRE-

INFORMED BRACKETS
  - TYPES OF BRACKETS
    - CONTINUOUS

VERSUS SEGMENTAL TECHNIQUES
  - SPACE

MAINTENANCE
  - ANCHORAGE
  - STOPS
  - TOOTH SEPARATION
  - MOST COMMONLY

USED ORTHODONTIC APPLIANCES
  - SOME

ORTHODONTIC TECHNIQUES
  - CLINICAL TIPS
    - CORRECTION OF VERTICAL PROBLEMS (OPEN BITE, DEEP OVERBITE)

COURSE OUTLINE

1. MECHANOTHERAPY USED IN THE MOST FREQUENT ORTHODONTIC MOVEMENTS
   A. Alignment (S.S with loops, Multistranded wire, Nitinol, Braided wire)
     a. Advantages, disadvantages and side effects of aligning with:
       a.1. Nitinol
       a.2. S.S. + loops
       a.3. S.S. + Nitinol in overlay
   B. Leveling
     a. Extrusion of lower posteriors (bite plane)
     b. Continuous technique
     c. Sectional techniques
     d. True intrusion
e. Relative intrusion (by holding the anterior teeth during growth or by premolar extrusion)

C. Space closure
   a. Closing loops
   b. Sliding (Power thread or plastic chain. Closed coil. Active lace back)
   c. Clearance

D. Space opening
   a. Opening loops
   b. Open coil

E. Uprighting
   a. Tipping
   b. Bodily movement (Translation)

F. Correction of rotations (Couple of force)
   a. With removable appliances
   b. With fixed appliances
      b.1. Rotation auxiliaries
   b.2. Lang and Lewis brackets (Reciprocal correction of rotations)

G. Different ways for obtaining a bodily movement on the upper incisors
   a. Torque in the bracket slot
   b. Additional torque in the arch wire
   c. Torquing auxiliaries

H. Molar uprighting techniques

I. Different alternatives of vertical intermaxillary traction

2. .018 VERSUS .022 SLOTS: ADVANTAGES AND DISADVANTAGES.

3. 0˚ VERSUS PRE-INFORMED BRACKETS.

4. TYPES OF BRACKETS
   A. Single
   B. Single with wings (Lewis. Lang)
   C. Siamese

5. CONTINUOUS VERSUS SEGMENTAL TECHNIQUES

6. SPACE MAINTENANCE
   A. Unilateral (band and loop)
   B. Nance
   C. Lingual arch
   D. Vertical steps (Confined)
   E. Closed coil
   F. Omega stop confined

7. ANCHORAGE
A. Maximum, moderate, minimum
B. Anchorage preparation (Tweed. Ricketts)
C. Different appliances for reinforcing the anchorage (Headgear, Nance, Nance + transpalatal bar, lingual arch, lip bumper ...)
D. Different techniques used for reinforcing or losing anchorage in a determined area
   a. Electrolytic reduction of one segment
   b. Overlay
   c. Bidimensional

8. **STOPS**
   A. Their function
   B. Where to place them
   C. Tie back and cinch back

9. **TOOTH SEPARATION**

10. **MOST COMMONLY USED ORTHODONTIC APPLIANCES**
    A. Utility arches
    B. Rapid Palatal Expander
    C. Face mask
    D. Bonded R.P.E. (Lab. phase)
    E. Headgear
       a. Orthodontic. Orthopedic
       b. Biomechanics
    F. Transpalatal bar
       a. Plain
       b. With mesially or distally oriented loop
       c. With a loop 8 mm distant from the palate
       d. Soldered or removable
    G. Quad Helix
    H. Lingual arch
    I. Straight and reverse Nance button

11. **SOME ORTHODONTIC TECHNIQUES**
    A. Vari-simplex technique
    B. Ricketts technique
    C. Bidimensional technique

12. **CLINICAL TIPS**
    A. Methods for preventing dislodgement of archwires from the molar tubes
    B. Different approaches for hanging cusps
    C. Different alternatives of vertical intermaxillary traction
    D. Clinical tips for counteracting undesired reactions during sliding movements (loss of anchorage, rotations, tipping)
    E. Clinical tips with the straight wire technique
       a. Upper lateral during the mixed dentition phase
b. Distal angulation of the canine brackets
c. Palatally positioned upper laterals
d. Cases finished in class II molar relationship
e. Precautions to be taken when the molars are stabilized (with a soldered Goshgarian for instance)

F. Wires in overlay (different alternatives)

13. CORRECTION OF VERTICAL PROBLEMS (OPEN BITE-DEEP OVERBITE)
   A. Grower versus non grower
   B. Depending on the facial pattern

REFERENCES