Operativ techniques in Dentistry: Paedodontics and Orthodontics

- The purpose of orthodontics
- Grouping of the appliances
- Element of fixed appliances
- The types and parts of the removable appliances
The aim of orthodontic treatments

To solve esthetic complains
To treat the functional problems (chewing, speech, TMI)
Prevention (caries, parodontitis, TMJ dysfunction)
Sagittal anomalies - Angle classification (based on: anteroposterior relationship of the jaws)

Angle I: normocclusion

Angle II: distocclusion

Angle III: mesiocclusion
I. class
Angle Classification

- Class I Molar (65%)
- Class II Molar (30%)
- Class III Molar (5%)
Angle I.
Angle II. - Distocclusion

Angle II/1

Angle II/2
Functional jaw orthopaedics, bimaxillary, functional appliances
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- Restructuring of TMJ
- Restructuring of dentoalveolar area
- New muscle balance
Bimaxillary appliances - Functional jaw orthopaedics

AKTIVATOR
Construction bite - set of anteroposterior and vertical relationship
Functional jaw orthopaedics

Set of vertical relationship
Grinding of appliance
Fixed appliances for the treatment of II. class anomalies

- Herbst-appliance
- Jusper Jumper
- Forsus spring stb.
CLASS II MALOCCLUSION

FUNCTIONAL APPLIANCES

PERMANENT DENTITION
CLASS II DIVISION 1

HERBST APPLIANCE (FIXED)
MANDIBLE HELD IN PROTRUSION + OPEN VERTICALLY
CLASS II MALOCCLUSION
FUNCTIONAL APPLIANCES

FIXED HERBST APPLIANCE
II. Class rubbers
Headger and fixed appliance

If the maxilla is responsible for the anomaly and in mild distalocclusion:
Distalisation of upper molars
Prohibition of growing of upper jaw
Headgear

Anchorage
Distalisation of molars
Treatment of vertical anomalies
Extraction of upper premolars (compromised treatment)
Profile !!!

Child aged 10 and 12; extractions and fixed braces
Surgical solutions
Műtéti előkészítés
Angle III – progenie - mesiocclusion
Orthodontic treatment in primary dentition

- **Progenia**
- 1. appliance: chin cap
- 2. Inclined plane
  - (against frontal crossbite)
Angle III – progenie - mesiocclusion
Angle III – progenie - mesiocclusion
CLASS III MALOCCLUSION

- FULL FIXED APPLIANCES
- CLASS III ELASTICS

PROTRACTION of the maxilla
FACE MASK (DENTAL + SKELETAL)
Premolar extractions
III.class
Assymmetric anomaly
Vertical anomalies

Deepbite
(skeletal or)

Open bite
dentoalveolar ?)
Bite raising plane
(on the upper appliance)
Bite raising plane

Fig. 11. Corrected incisor relationship, bilateral open bites.
Bimaxillary, functional appliances

Frankel- appliance
Anti Spee (curve) wires
Open bite

- Consequences of thumb sucking
  - Open bite
  - Protrusion of upper incisors
  - Retrusion of lower incisors
  - Distalocclusion
DEGLUTITIO INFANTILIS

Tongue thrust swallow
5- Intermaxillary rubbers, miniimplant
    Bite closure
• Hereditary skeletal open bite: surgery !!!
Transversal problems
Active acrylic plates (in mixed dentition)
Fixed expanders – Quad-helix
Fixed expanders – Transpalatal bar
Fixed expanders - Hyrax
Fixed expanders - Hyrax
Fixed expanders - Hyrax

Hibrid-hyrax

Dystractor
SARME = Surgically assisted rapid maxillary expansion, dystractios osteogenesis
REMOVABLE APPLIANCES: ACTIVE AND PASSIVE PLATES
Grouping the plates

**Passive**
Upper passive (retention) plate

**Active**
Upper typical active plate with a screw and inclined plane
The elements of the plates
Upper passiv (retention) plates

- Acryl basic plate
- Labial bow
- Clasps
- Active elements
The elements of the plates
Lower passiv (retention) plate

Acryl basic plate
Labial bow
Clasps
Active elements
The elements of the plates

- Acryl basic plate
- Labial bow
- Clasps
- Active elements
The elements of the plates

- Acryl basic plate
- Labial bow
- Clasps
- Active elements

Adams clasp
The elements of the plates

- Acryl basic plate
- Labial bow
- Clasps
- Active elements

Arrow clasp
The elements of the plates

- Acryl basic plate
- Labial bow
- Clasps
- Active elements-springs

Free-ended or finger springs

closing

opening
The elements of the plates

- Acryl basic plate
- Labial bow
- Clasps
- Active elements

• console-like springs
Active plates
The screws
Activ plates

• Upper typical (symmetrical) activ plate

Lower typical (symmetrical) activ plate
Activ plates

Upper atypical active plate

Lower atypical active plate with
Active plates
Y-plate

Upper Y-plate

Lower Y-plate
Bertoni screw
(instead of Y-plate)
Activ plates

Upper frontally expanding active plate with a screw and occlusal biteraiser plane
Active plates

Upper atypical active plate with a screw and occlusal biteraiser
(lateral crossbite)
The elements of the plates
Bite raising plane

thick acrylate behind the upper incisors →
intrusion of lower incisors
The elements of the plates - reversed incline plane
(II. class cases - to force the lower jaw forward)
The grouping of the plates

- Upper passive plate
- Upper typical active plate with a screw and inclined plane
- Upper atypical active plate with a screw and occlusal biteraiser
- Lower typical active plate with a screw
- Lower Y-plate
- Lower atypical active plate with a screw
Oral screen
Inclined plane
Elements of fixed appliances
Direkt bonding system
(multibond, multibracket appliance)
Components of the Multiband Appliance

- Rigid connectors, called molar tubes and brackets
- Archwires, and other elastic sources of force
- Auxiliaries (Everything else needed to get the job done.)

Dot is always on the distogingival wing of the bracket.
METAL BRACKETS
Metalbrackets

- Stainless steel brackets
- Titanbrackets
- Gold brackets
Ceramic brackets
Ceramic brackets

- Disadvantages:
  - expensive
  - fragile
  - difficult to remove the brackets
  - more difficult to apply ligatures

- Advantages:
  - esthetic
Ligatures

Elastic ligatures (rubbers)  Metal ligatures
Thank you for your attention!