Preventive Orthodontics

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Treatment of malrelationship of orofacial structures, involve:

• Diagnosis
• Prevention
• Interception
• Guidance
• Correction

of malocclusion
Malocclusion

• Discrepancy in size and/or position of different parts of orofacial system
• Teeth
• Groups of teeth / front, side/
• Dental arches
• Jaws-bones / maxilla, mandible, cranium/

skeletal / dental anomaly
EPIDEMIOLOGY OF MALOCCLUSION

75% Occlusal Disharmony
25% Near-ideal Occlusion
## ANGLE CLASSIFICATION

(Molar/Interarch sagittal Relationship)

<table>
<thead>
<tr>
<th>Class</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>NORMAL</td>
<td>25%</td>
</tr>
<tr>
<td>CL-I</td>
<td>50-55%</td>
</tr>
<tr>
<td>CL-II</td>
<td>15-20%</td>
</tr>
<tr>
<td>CL-III</td>
<td>1%</td>
</tr>
</tbody>
</table>

- **Angle class I**
- **Angle class I Frontal crossbite**
- **Angle class II openbite**
- **Angle class III**
## INCIDENCE OF PROBLEMS

<table>
<thead>
<tr>
<th>Problem</th>
<th>Incidence</th>
<th>Age Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>Crowding</td>
<td>40% (6-11)</td>
<td></td>
</tr>
<tr>
<td>Overjet (&gt;6mm)</td>
<td>16% (CL-II &amp; skeletal)</td>
<td></td>
</tr>
<tr>
<td>CL-III Molars</td>
<td>1%</td>
<td></td>
</tr>
<tr>
<td>Anterior openbite (&gt;2mm)</td>
<td>1%</td>
<td></td>
</tr>
<tr>
<td>Deepbite</td>
<td>10%</td>
<td></td>
</tr>
<tr>
<td>Posterior crossbite (&gt;2 teeth)</td>
<td>6%</td>
<td></td>
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</tbody>
</table>

USPHS 1960's / age 6-17
ETIOLOGIC FACTORS
Classification

(Mc Coy 1956)

Heredity
Developmental defects of unknown origin
Trauma (pre & post-natal)
Physical agents (pre & post-natal)
Habits (thumb, fingers, tongue, etc...)
Diseases (systemic, endocrine)
Malnutrition

(Moyers, 1958)
Heredity

Congenital bilateral alveolar cleft

Progenie
Developmental defects of unknown origin
Traumatic lost of an incisor
Bad habits

Habits or dysfunction

- Thumb sucking
- Biting nails, pencil etc.

Within act of swallowing

- Tongue trusting
- Lip sucking

Treatment

- Education
- Orthodontic appliance
- Logopedic treatment

Myofunctional trainer
Why early orthodontic screening?
At age of early mixed dentition

6’s erupted = Post. Occl. established

Detection of:
Function, habits, crowding, deep/open bites
Anteroposterior & transverse discrepancies

Benefits: possibility to
- controlling jaw growth, harmonize size and position of arches
- improve eruption patterns,
- lower risk of trauma to protruding upper incisors
- correct harmful oral habits
- improve esthetics & self-esteem
- simplify / shorten treatment time for later corrective phase
- reduce likelyhood of impactions
- improve some speech problems
- preserve / gain space for erupting perm. teeth
Crowding in both arches, sagittal and transversal discrepancy between arches.
Crowding in both arches, sagittal and transversal discrepancy between arches, frontal deep bite, big overjet
Interceptive treatment /elastic opened activator/

Effects:

Expansion
Facilitate growing of mandible
Sagittal positioning of arches
Align frontal teeth
Opening the bite
After treatment
After treatment
Space maintainer

In case of early lost of deciduous teeth maintain the space until erupting permanent analogs.
Possibilities for modify growing direction

Average growing
Horizontal growing
Vertikal growing

With orthopedic appliance we can change the direction of growing
improve esthetics & self-esteem

Before and after treated the crowding and crossbite tooth 12
Treating impacted tooth as prevention of follicular cyst, root resorption, prothetic
Sometimes we can not gain the space for all teeth

If we must do, do so early as we can

- SERIAL EXTRACTIONS  (Kjellgren, 1929)
- GUIDANCE OF ERUPTION  (Hotz, 1970)
- GUIDANCE OF OCCLUSION

...influence tooth eruption into a favorable occlusion...
SERIAL EXTR. - CASE SELECTION
(ideal conditions)

- NO SKELETAL DISHARMONY
  (Good facial balance / harmony)
- CL-I MOLAR RELATIONSHIP
- MINIMAL OVERBITE & OVERJET

SEVERE SPACE DEFICIENCY
(> 10mm / ARCH)
Sequence of serial extr.

1- PRIM. CUSPIDS
   -relieves inc. crowding

2- PRIM. 1st MOLARS
   -accelerates 4’s eruption

3- 1st PREMOLARS
   -provides room for 3’s eruption

4- Orthodontic appliance if necessary
SERIAL EXTRACTIONS

CONCLUSIONS

• No cookbook approaches...
• Not a licence for no supervision
• Take panoramic x-ray, to evaluate space
• Have a treatment plan
  – Explain them to parents & patient
    (Phase-II & mechanotherapy usually indicated)
  – Short & Long term goals
  – Esp. when extracting permanent teeth

• When in doubt, DON'T take them out...
Thank You for your attention!