

Beginning of orthodontic treatment and the length of treatment time

mixed dentition
permanenet dentition
adulthood

Development of the denture

- Primary dentition 0-6 év
- Mixed dentition 6-12 év
- Permanent dentition 12 év felett

Dens (con)natalis

Dens connatalis

Dens neonatalis = appears in the first month of extrauterine life



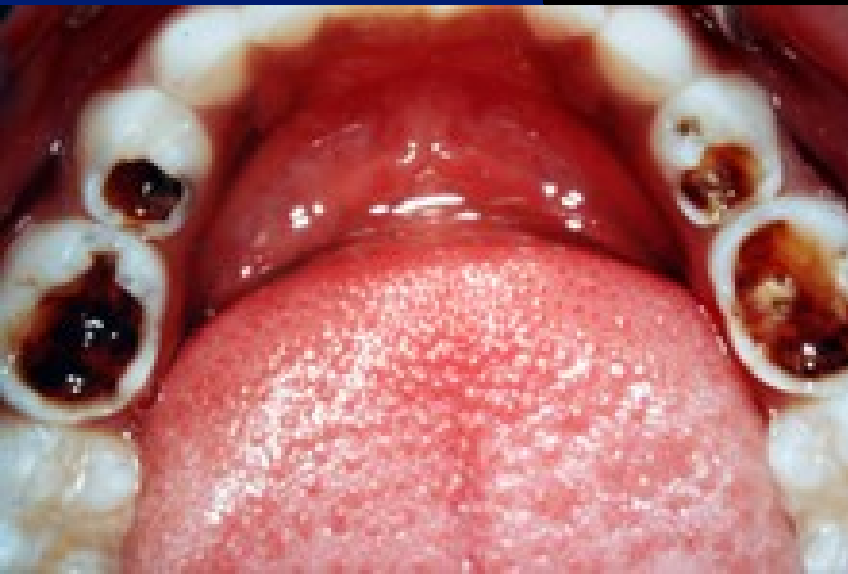
„Normal” caries of primary teeth

Difficult to treat the young children

Difficult to keep dry the cavity

Huge pulp chamber, thin hard tissues

Deep or medium caries - pulpitis, after the filling !!



Orthodontic treatment in primary dentition

1. Progenia

appliance: chin cap

2. Bad habits: thumb sucking,

appl.: oral screen

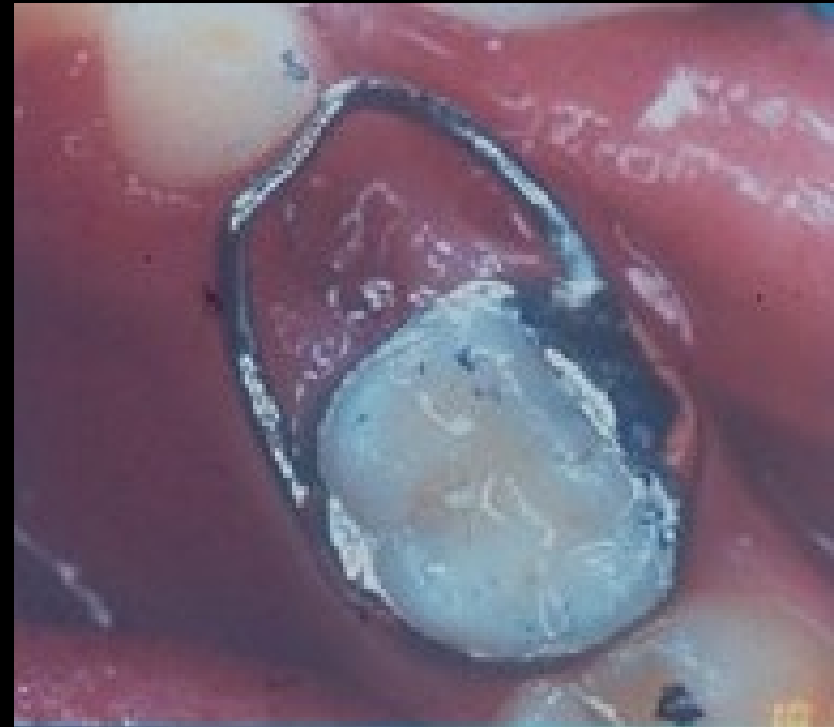
3. Cleft lip and cleft palate

4. Loss of primary teeth

appl.: space maintainer

5. Crossbite

appl.: inclined plane

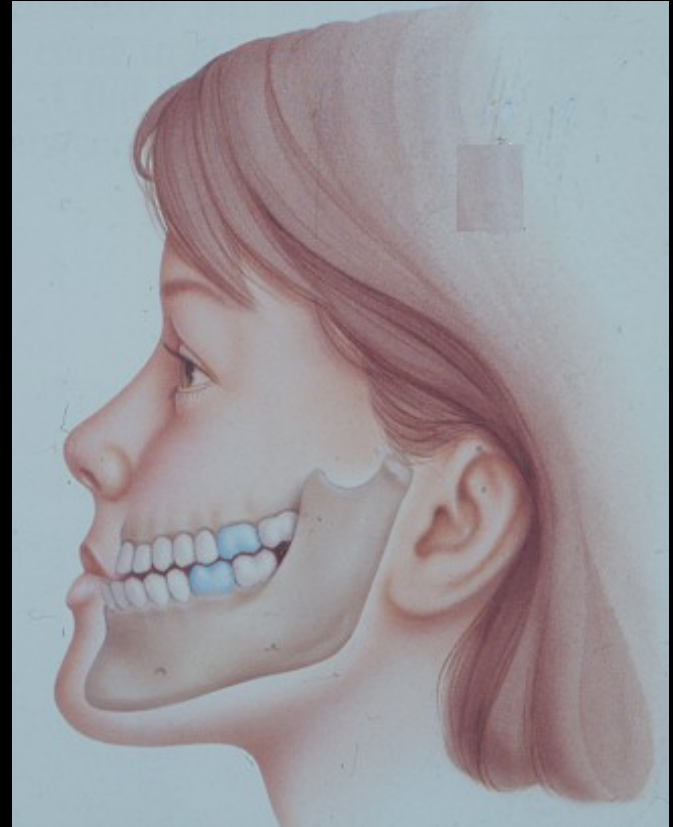


Space maintainers



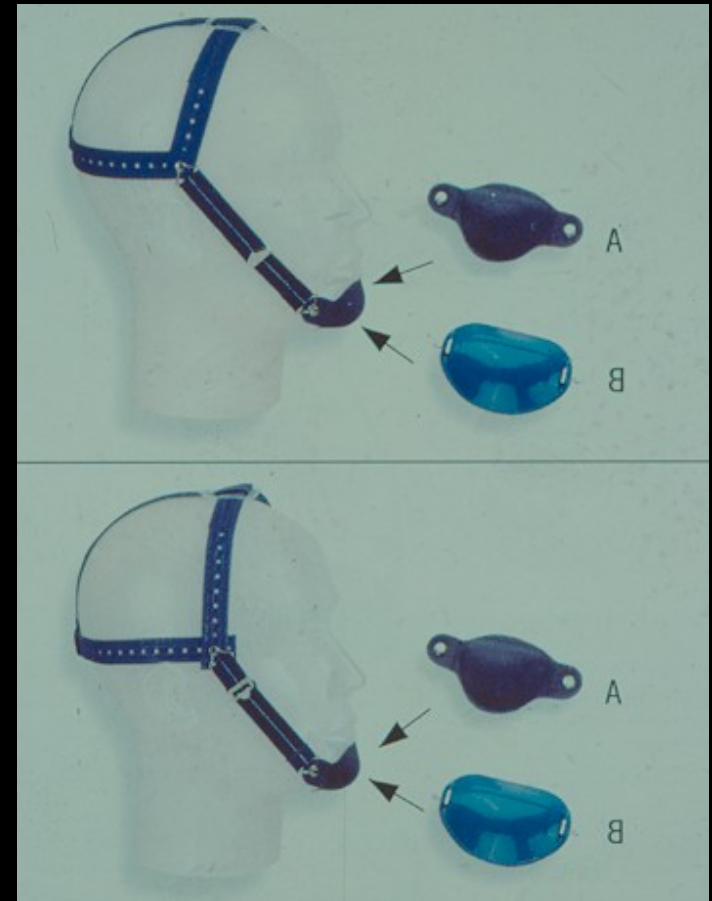
Orthodontic treatment in primary dentition

- **1.Progenia**
- **appliance: chin cap**
- **2.Bad habits: thumb sucking,**
- **appl.: oral screen**
- **3.Cleft lip and cleft palate**
- **4.Loss of primary teeth**
- **appl.: space maintainer**
- **5.Crossbite**
- **appl.: inclined plane**



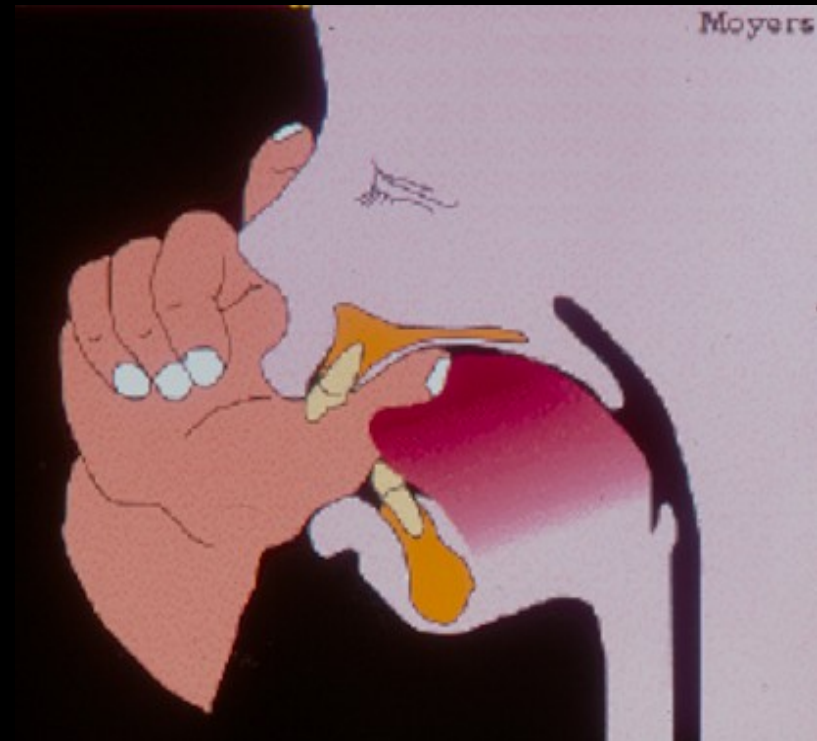
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- **1.Progenia**
- **appliance: chin cap**
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- **appl.: oral screen**
- **3.Cleft lip and cleft palate**
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- **appl.: space maintainer**
- **5.Crossbite**
- **appl.: inclined plane**



Orthodontic treatment in primary dentition

- **1.Progenia**
- appliance: chin cap
- **2.Bad habits: thumb sucking, tongue thrust swallow**
- appl.: oral screen
- **3.Cleft lip and cleft palate**
- **4.Loss of primary teeth**
- appl.: space maintainer
- **5.Crossbite**
- appl.: inclined plane



Ujjszopás

- nyitott harapás
- felső metszőfogak protrusioja
- alsó metszőfogak retrusioja
- (néha distalharapás)



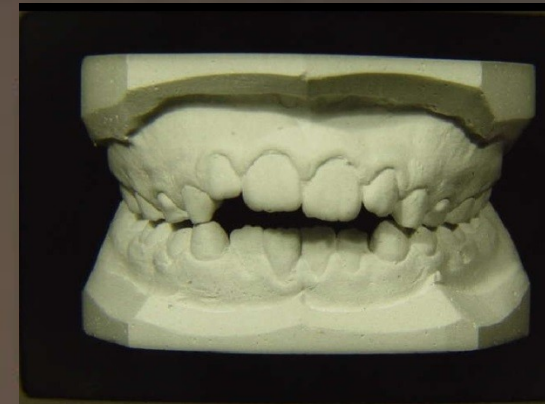
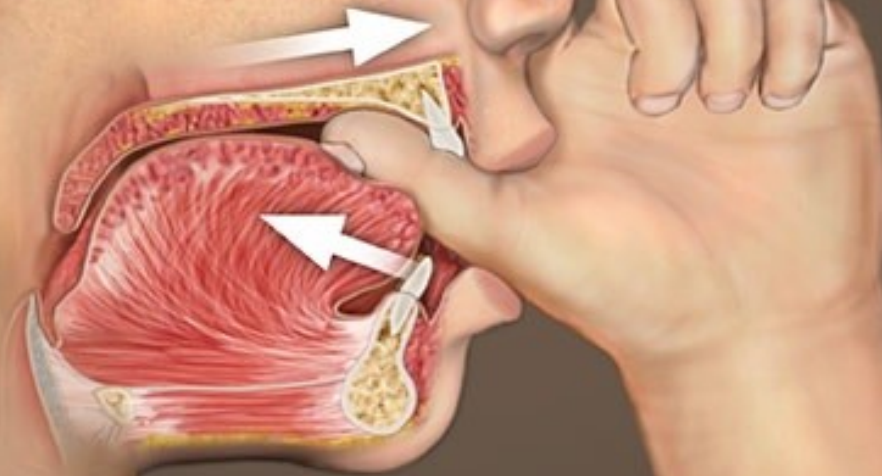
-Consequences of thumb sucking

- Open bite**
- Protrusion of upper incisors**
- Retrusion of lower incisors**
- Distalocclusion**



Dangers of Thumb Sucking

If thumb sucking persists after the primary teeth have erupted, it can change the growth patterns of the jaw, and cause significant misalignment of the teeth.



Open bite caused by thumb sucking



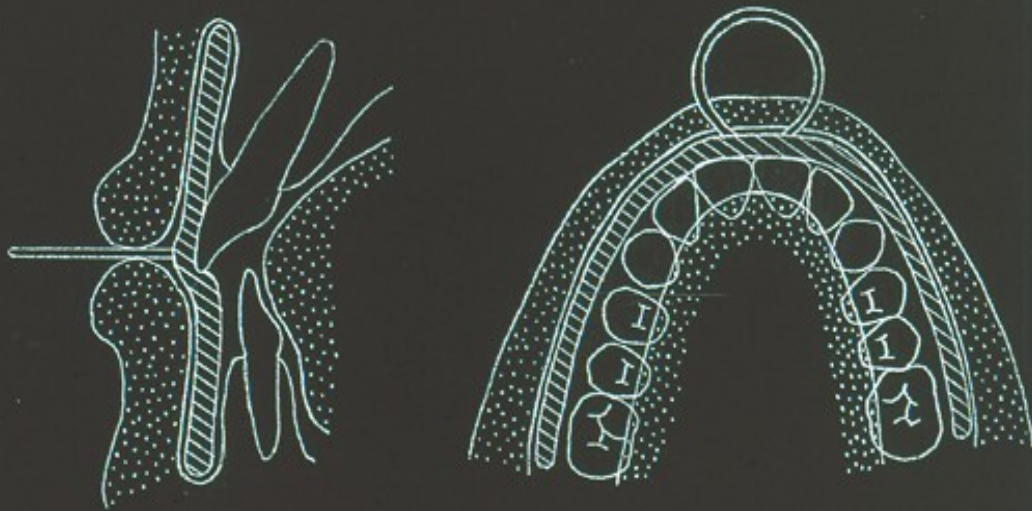
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Oral screen



Oral screen

PITVARLEMEZ



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Habit breakers



Bitter materials against finger suckings

MAVALA

SWITZERLAND
USA



Habit breakers



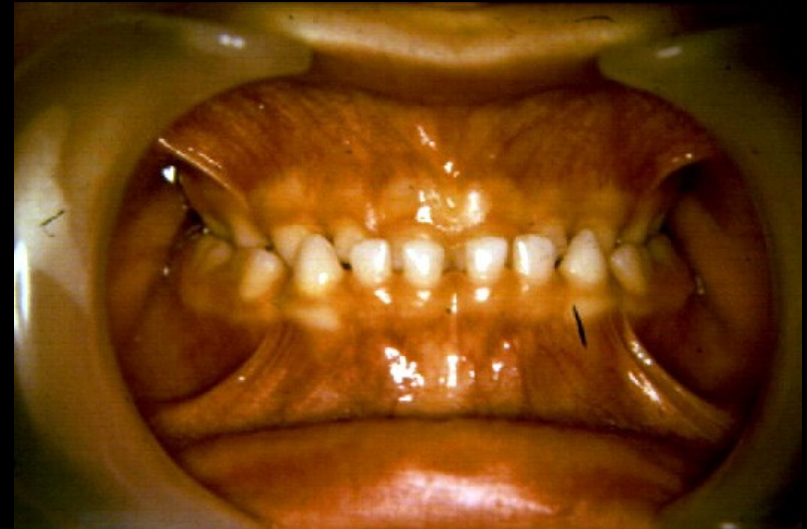
Tongue guard



Spikes against tongue trusting

Orthodontic treatment in primary dentition

- **1.Progenia**
- appliance: chin cap
- **2.Bad habits: thumb sucking,**
- appl.: oral screen
- **3.Cleft lip and cleft palate**
- **4.Loss of primary teeth**
- appl.: space maintainer
- **5.Crossbite**
- appl.: inclined plane
- (treatment: im mixed dentition)



ERUPTION - TIMETABLE

PERMANENT T.	Hidasi	Fehér
1. Molars	6	6-7
1. incisos	8	6-8
Lateral incisor	8	7-9
Canine	11	9-12
1. and 2. Praemolars	9-10	10-12
2. Molar	12	11-13
3. Molar	-	17-21

Upper	Eruption sequences
♂	4→5→3
♀	3→4→5 vagy 4→3→5
Lower	Eruption sequences
♂, ♀	3→4→5

The eruption of the lower central incisors, 5-6(-7) years of age

- The lower central incisors often erupt lingually , but
- The tongue pushes them to the normal position



The eruption of the lower central incisors, 5-6 years of age

- The lower central incisors often erupt lingually , but
- The tongue pushes them to the normal position



Orthodontic treatment in mixed dentition

- 1. Crossbite
- appl.: inclined plane
- 2. Early loss of primary teeth
- appl.: space maintainer
- 3. Functional jaw orthopedic (skeletal anomalies)
- Sagittal anomalies: Angle II. – distalocclusion
- Angle III. – mesialocclusion
- Vertical anomalies: open bite
- deep bite
- appl.: bimaxillary functional appliances activator, bionator, Frankel-appl., Hansa-appl. etc.
- 4. Diasthema medianum
- appl.: removable appliance with springs
- brackets
- 5. Crowding with or without lateral crossbite
- appl.: expansion of the dental arch with active removable plates or quad-helix
- 6. Timing of first molar's extraction
- (reason: gangrena, periostitis, periodontitis etc.)
- 7. Hotz serial extraction
 - primary canines
 - primary first molars
 - permanent first premolars

1. Crossbite (local anomaly)

appl.: inclined plane

2. Early loss of primary teeth appl.: space maintainer

3. Functional jaw orthopedic

Sagittal anomalies: Angle II. – distalocclusion

Angle III. – mesialocclusion

Vertical anomalies: open bite

deep bite

appl.: bimaxillary functional appliances activator,

bionator, Frankel-appl., Hansa-appl. etc.

4. Diasthema medianum

appl.: removable appliance with springs

brackets

5. Crowding with or without lateral crossbite

appl.: expansion of the dental arch with active removable plates or quad-helix

6. Timing of first molar's extraction

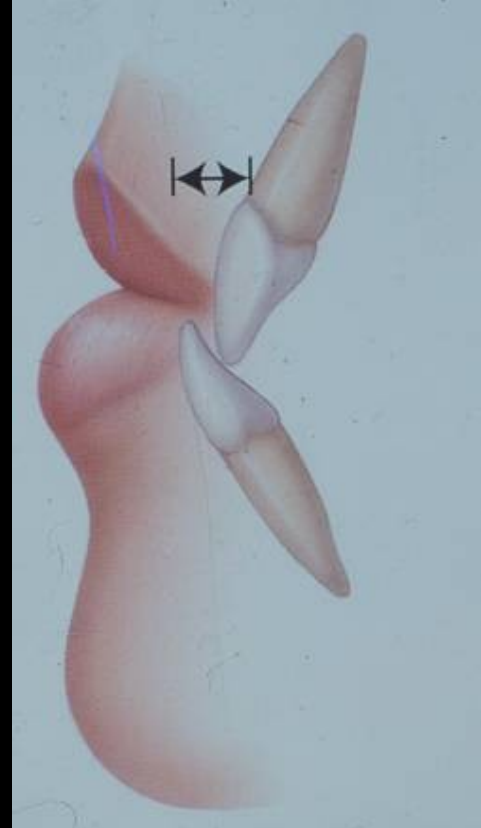
(reason: gangrena, periostitis, periodontitis etc.)

7. Hotz serial extraction

◆ primary canines

◆ primary first molars

◆ permanent first premolars



1. Crossbite

appl.: inclined plane

2. Early loss of primary teeth appl.: space maintainer

3. Functional jaw orthopedic

Sagittal anomalies: Angle II. – distalocclusion

Angle III. – mesialocclusion

Vertical anomalies: open bite

deep bite

appl.: bimaxillary functional appliances activator,

bionator, Frankel-appl., Hansa-appl. etc.

4. Diasthema medianum

appl.: removable appliance with springs

brackets

5. Crowding with or without lateral crossbite

appl.: expansion of the dental arch with active removable plates or quad-helix

6. Timing of first molar's extraction (10-12 years)

(reason: gangrena, periostitis, periodontitis etc.)

7. Hotz serial extraction

◆ primary canines

◆ primary first molars

◆ permanent first premolars



Keresztharapás



1. Crossbite

appl.: inclined plane

2. Loss of primary teeth

appl.: space maintainer

3. Functional jaw orthopedic

Sagittal anomalies: Angle II. – distalocclusion

Angle III. – mesialocclusion

Vertical anomalies: open bite

deep bite

appl.: bimaxillary functional appliances activator,
bionator, Frankel-appl., Hansa-appl. etc.

4. Diasthema medianum

appl.: removable appliance with springs
brackets

5. Crowding with or without lateral crossbite

appl.: expansion of the dental arch with activ removable plates or quad-helix

6. Timing of first molar's extraction

reason: gangrena, periostitis, periodontitis etc.)

7. Hotz serial extractio

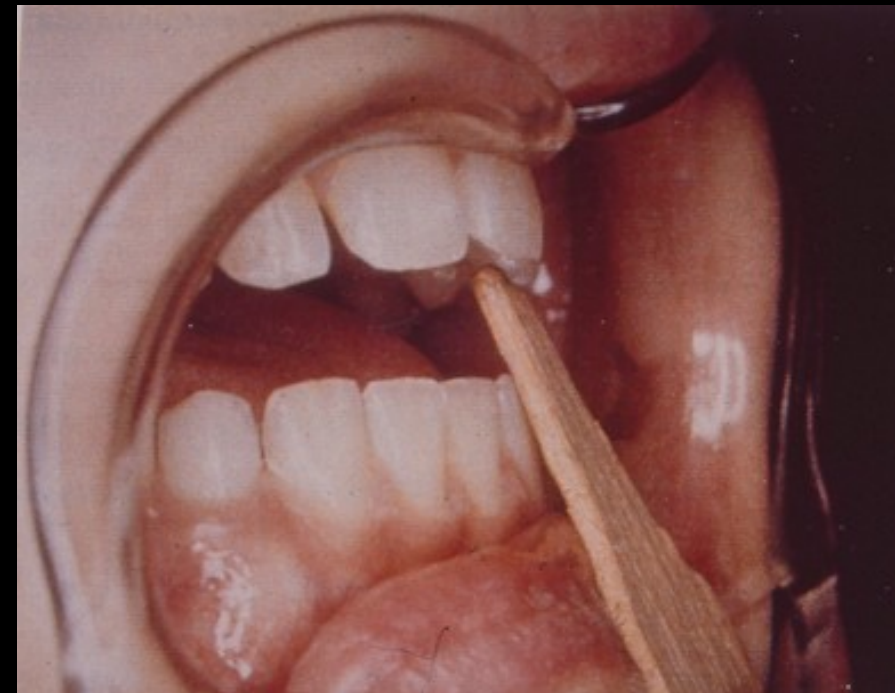
♦ primary canines

♦ primary first molars

♦ permanent first premolars



53. Ábra: Rögzített ferdesík



1. Crossbite

appl.: inclined plane

2. Early loss of primary teeth

appl.: fixed or removable space maintener

3. Functional jaw orthopedic

Sagittal anomalies: Angle II. – distalocclusion

Angle III. – mesialocclusion

Vertical anomalies: open bite

deep bite

appl.: bimaxillary functional appliances activator,

bionator, Frankel-appl., Hansa-appl. etc.

4. Diasthema medianum

appl.: removable appliance with springs

brackets

5. Crowding with or without lateral crossbite

appl.: expansion of the dental arch with activ removable plates or quad-helix

6. Timing of first molar's extraction

(reason: gangrena, periostitis, periodontitis etc.)

7. Hotz serial extractio

◆ primary canines

◆ primary first molars

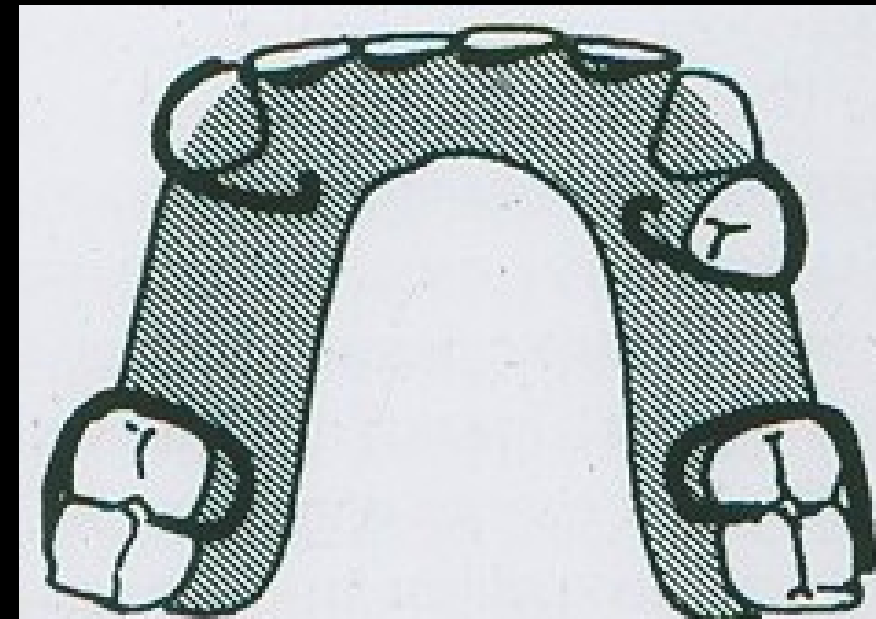
◆ permanent first premolars



HELYFENNTARTÓ (RÖGZÍTETT)



Passive space maintainers



- 1. Crossbite
- appl.: inclined plane
- 2. Loss of primary teeth
- appl.: fixed or removable space maintener
- 3. Functional jaw orthopedic
- Sagittal anomalies: Angle II. – distalocclusion
- Angle III. – mesialocclusion
- Vertical anomalies: open bite
- deep bite
- appl.: bimaxillary functional appliances activator, bionator, Frankel-appl., Hansa-appl. etc.
- 4. Diasthema medianum
- appl.: removable appliance with springs
- brackets
- 5. Crowding with or without lateral crossbite
- appl.: expansion of the dental arch with activ removable plates or quad-helix
- 6. Timing of first molar's extraction
- (reason: gangrena, periostitis, periodontitis etc.)
- 7. Hotz serial extractio
 - ◆ primary canines
 - ◆ primary first molars
 - ◆ permanent first premolars

1. Crossbite

appl.: inclined plane

2. Loss of primary teeth

appl.: fixed or removable space maintainer, active or passive space maintainers

3. Functional jaw orthopedic

Sagittal anomalies: Angle II. – distalocclusion

Angle III. – mesialocclusion

Vertical anomalies: open bite

deep bite

appl.: bimaxillary functional appliances activator, bionator, Frankel-appl., Hansa-appl. etc.

4. Diasthema medianum

appl.: removable appliance with springs
brackets

5. Crowding with or without lateral crossbite

appl.: expansion of the dental arch with active removable helix

6. Timing of first molar's extraction

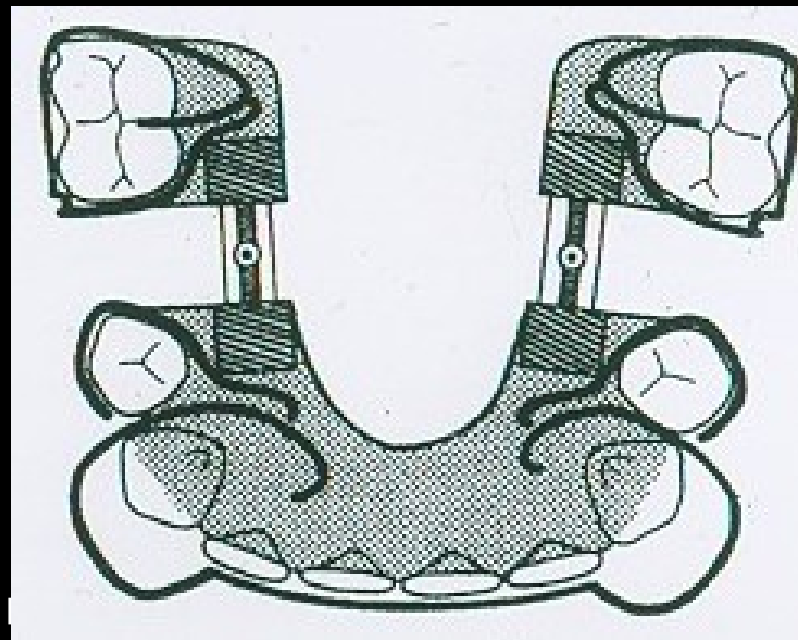
(reason: gangrena, periostitis, periodontitis etc.)

7. Hotz serial extractio

◆ primary canines

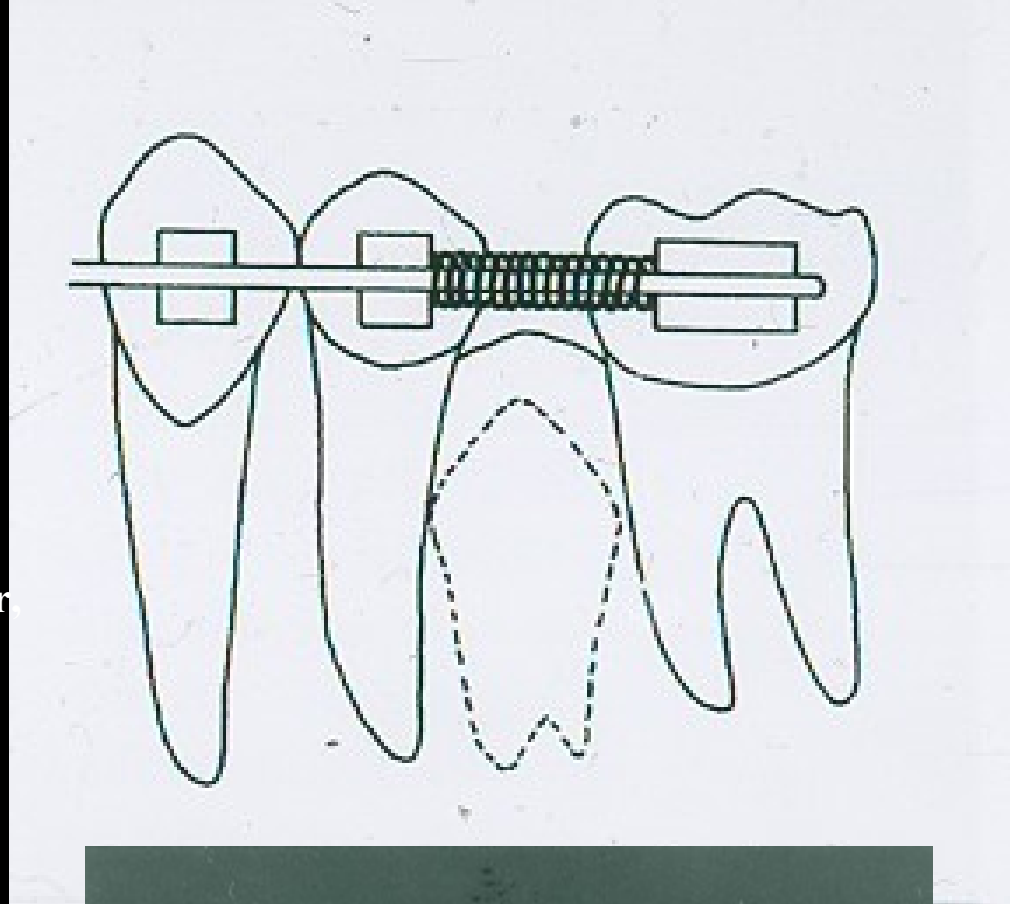
◆ primary first molars

◆ permanent first premolars



Active space maintainer

1. Crossbite
appl.: inclined plane
2. Loss of primary teeth
appl.: fixed or removable space maintainer
3. Functional jaw orthopedic
Sagittal anomalies: Angle II. – distalocclusion
 Angle III. – mesialocclusion
Vertical anomalies: open bite
 deep bite
appl.: bimaxillary functional appliances activator
 bionator, Frankel-appl., Hansa-appl. etc.
4. Diasthema medianum
appl.: removable appliance with springs
 brackets
5. Crowding with or without lateral crossbite
appl.: expansion of the dental arch with activ
removable plates or quad-helix
6. Timing of first molar's extraction
(reason: gangrena, periostitis, periodontitis etc.)
7. Hotz serial extractio
primary canines
primary first molars
permanent first premolars



Angle II./1.

- distalharapás
- overjet
- felső frontfogak protrusioja
- overbite (?)



1. Crossbite

appl.: inclined plane

2. Loss of primary teeth

appl.: fixed or removable space maintener

3. Functional jaw orthopedic

Sagittal anomalies: Angle II. – distalocclusion

Angle III. – mesialocclusion

Vertical anomalies: open bite

deep bite

appl.: bimaxillary functional appliances activator, bionator, Frankel-appl., Hansa-appl. etc.

4. Diasthema medianum

appl.: removable appliance with springs brackets

5. Crowding with or without lateral crossbite

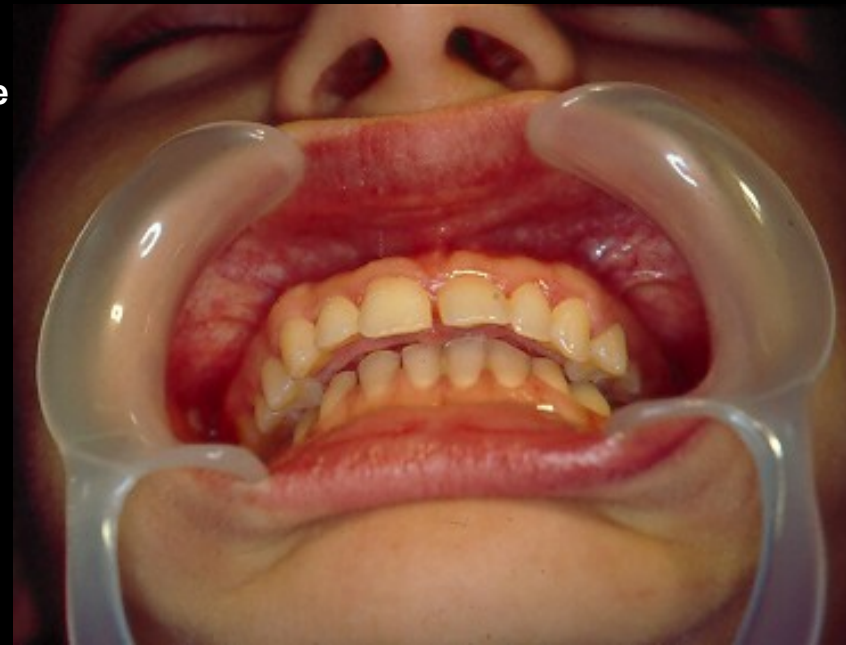
appl.: expansion of the dental arch with activ removable plates or quad-helix

6. Timing of first molar's extraction

(reason: gangrena, periostitis, periodontitis etc.)

7. Hotz serial extractio

- ◆ primary canines
- ◆ primary first molars
- ◆ permanent first premolars



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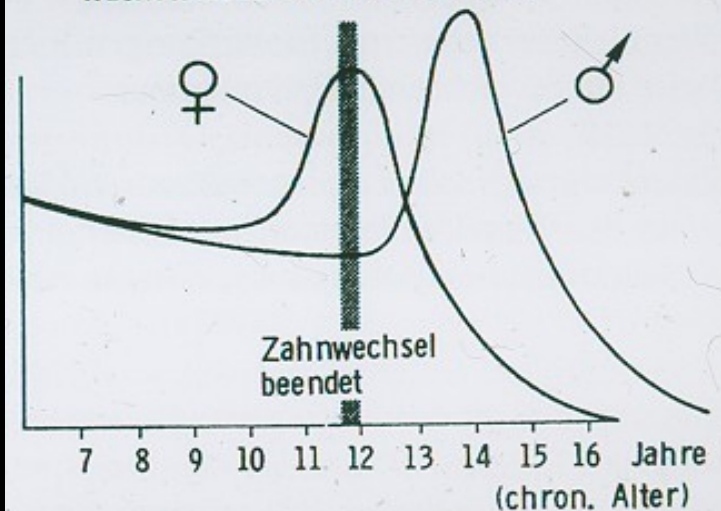
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7. Hotz serial extractio

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Wachstumskurven nach TANNER



FRÄNKEL KÉSZÜLÉK

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appl.: inclined plane

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Sagittal anomalies: Angle II. – distalocclusion

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Vertical anomalies: open bite

deep bite

appl.: bimaxillary functional appliances activator, bionator, Frankel-appl., Hansa-appl. etc.

4. Diasthema medianum

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brackets

5. Crowding with or without lateral crossbite

appl.: expansion of the dental arch with activ removal plates or quad-helix

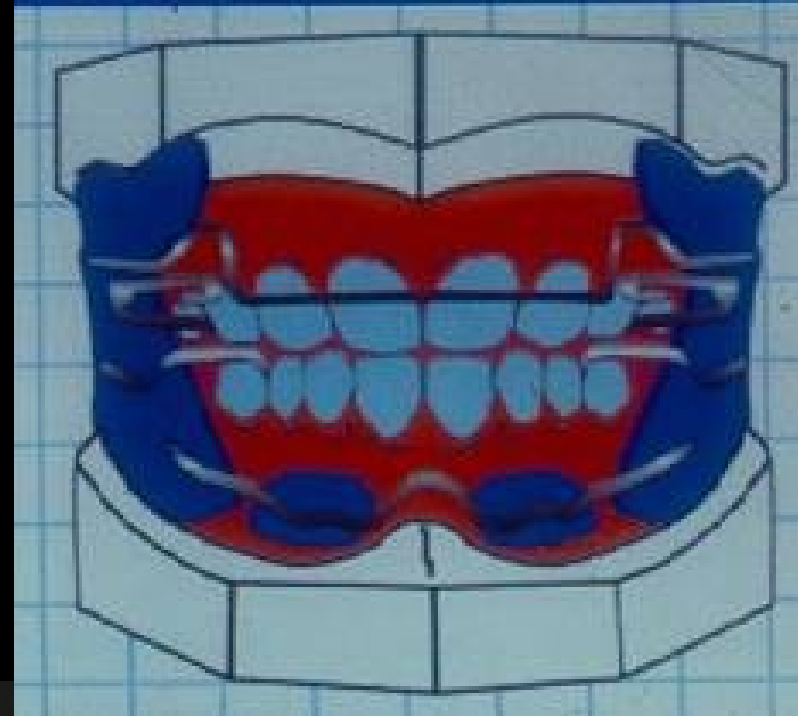
6. Timing of first molar's extraction

(reason: gangrena, periostitis, periodontitis etc.)

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- ◆ primary first molars
- ◆ permanent first premolars

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Fixed bimaxillary appliances

- Herbst-appliance
- Forsus spring stb.



At the age of 11-12

Length of the treatment: 9-16 months



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- Vertical anomalies: open bite
- deep bite
- appl.: bimaxillary functional appliances
- activator,
- bionator, Frankel-appl., Hansa-appl. etc.
- 4. Diasthema medianum (local anomaly)
- appl.: removable appliance with springs
- brackets
- 5. Crowding with or without lateral crossbite
- appl.: expansion of the dental arch with active
- removable plates or quad-helix
- 6. Timing of first molar's extraction
- (reason: gangrena, periostitis, periodontitis etc.
-)
- 7. Hotz serial extractio
- ♦ primary canines
- ♦ primary first molars
- ♦ permanent first premolars



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5. Crowding with or without lateral crossbite

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6. Timing of first molar's extraction

(reason: gangrena, periostitis, periodontitis etc.
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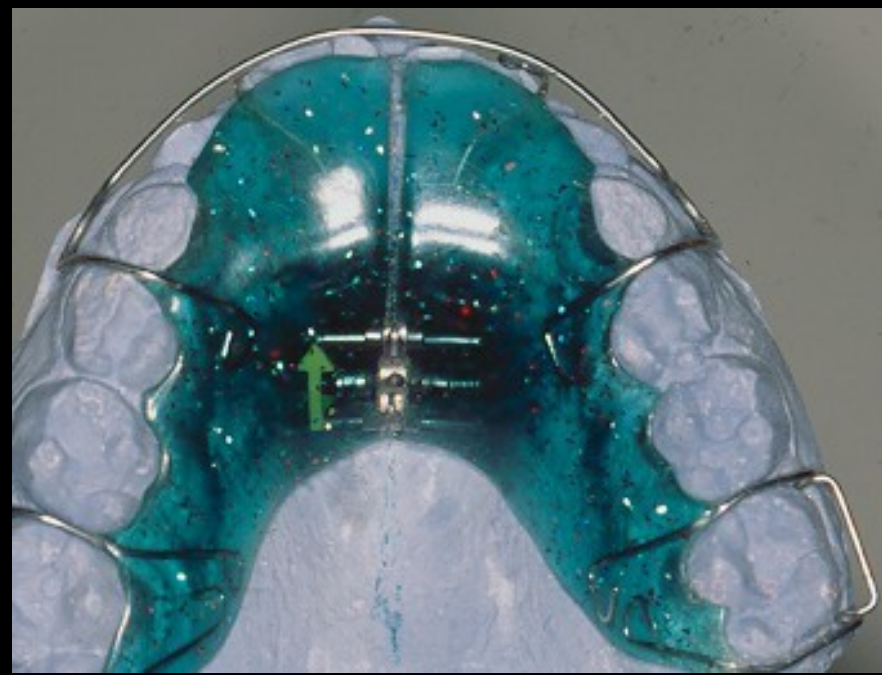
7. Hotz serial extraction

◆ primary canines

◆ primary first molars

◆ permanent first premolars

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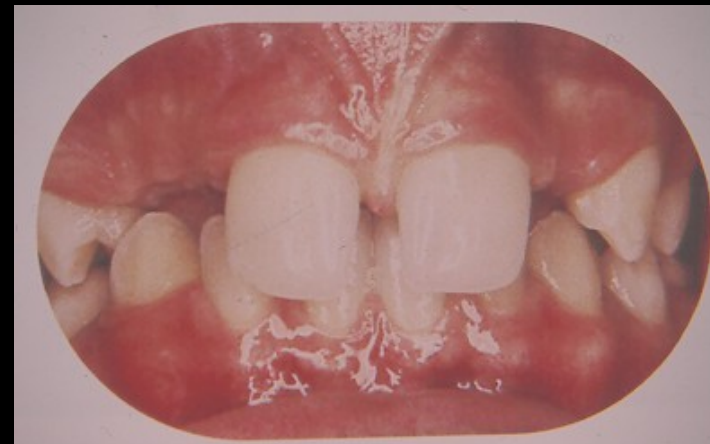
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3. Functional jaw orthopedic

Sagittal anomalies: Angle II. – distalocclusion

Angle III. – mesialocclusion

Vertical anomalies: open bite

deep bite

appl.: bimaxillary functional appliances

activator,

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4. Diasthema medianum

appl.: removable appliance with springs

brackets

5. Crowding with or without lateral crossbite

appl.: expansion of the dental arch with active removable plates or quad-helix or hyrax

6. Timing of first molar's extraction

(reason: gangrena, periostitis, periodontitis etc.)

7. Hotz serial extraction

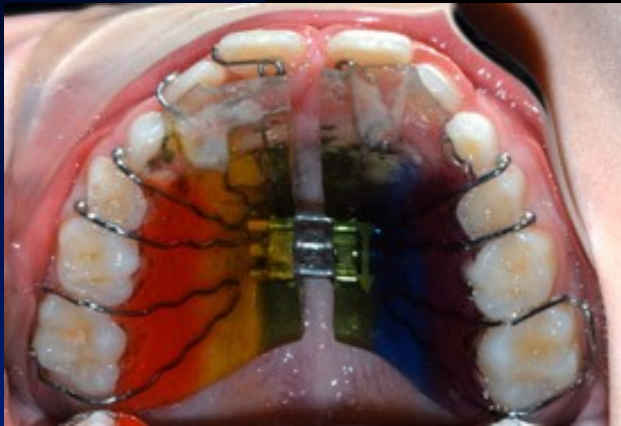
◆ primary canines

◆ primary first molars

◆ permanent first premolars



■ Crowding with or without lateral crossbite



INTERCEPTIVE ORTHODONTICS

Crowding: **with or without lateral crossbite**

• Treatment:

1-Space management. Expansion, Leeway-space etc.

2-Molar distalisation.

3-Serial extraction.

4-Premolar extraction.

5-First molar extraction. If the molars are raunchy (caries etc.)

6-lower incisor extraction. Lower crowding

7-Second molar extraction. + molar distalisation

1. Crossbite

appl.: inclined plane

2. Loss of primary teeth

appl.: fixed or removable space maintainer

3. Functional jaw orthopedic

Sagittal anomalies: Angle II. –
distalocclusion

Angle III. –
mesialocclusion

Vertical anomalies: open bite
deep bite

appl.: bimaxillary functional appliances
activator,
bionator, Frankel-appl., Hansa-appl.
etc.

4. Diasthema medianum

appl.: removable appliance with springs
brackets

5. Crowding with or without lateral crossbite

appl.: expansion of the dental arch with
activ removable plates or quad-helix, or
hyrax (skeletal expansion)

6. Timing of first molar's extraction

(reason: gangrena, periostitis,
periodontitis etc.)

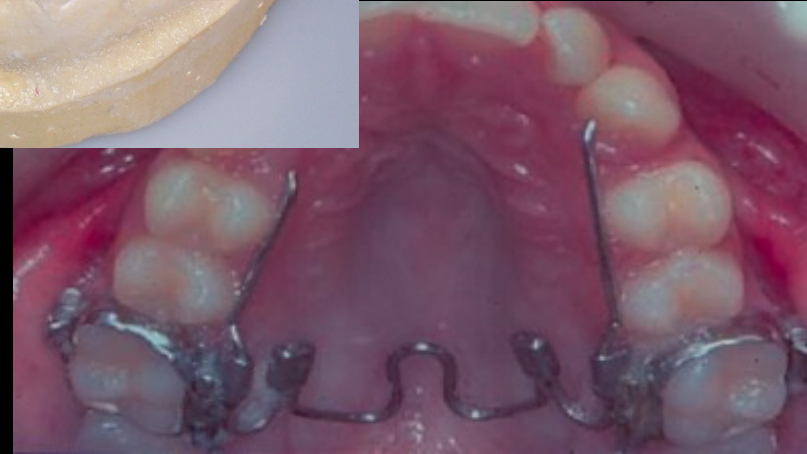
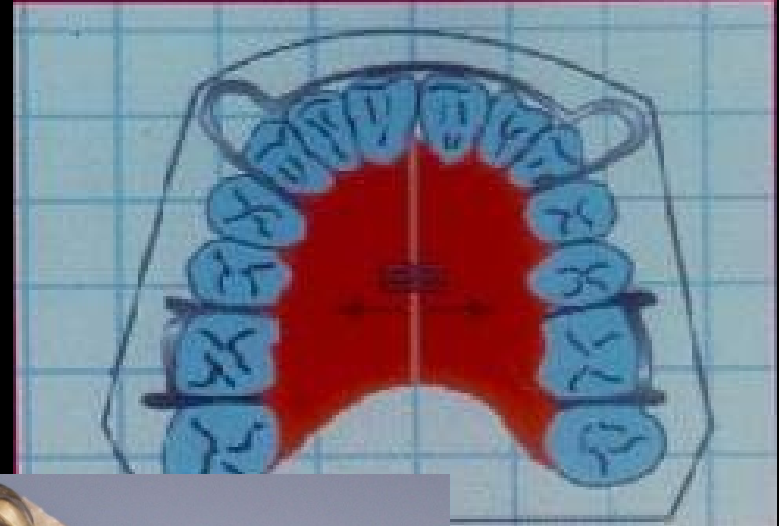
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◆ primary first molars

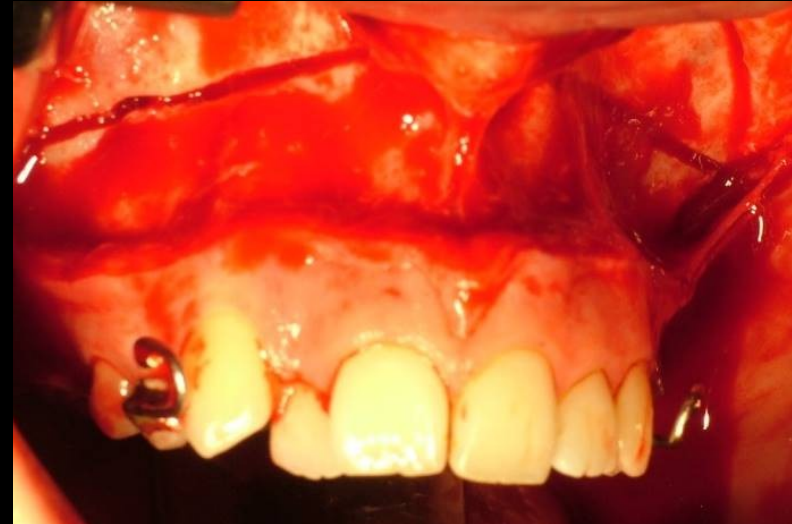
◆ permanent first premolars

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SARME (when growing has already finished)

- Surgically Assisted Rapid Maxillary Expansion (SARME)
- After the closure of the sutura palatina mediana



Maxillary Space Regaining



Headger (molar distalisation)

Distalisation of the upper molars

- Distal Jet



- Pendulum



- Beneplate



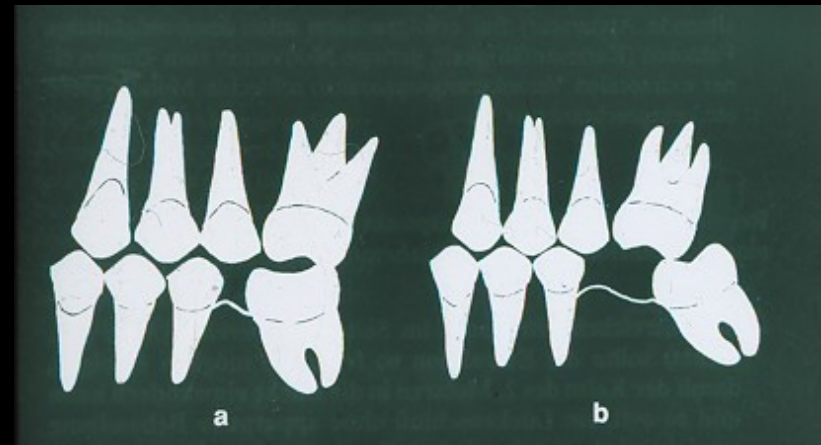
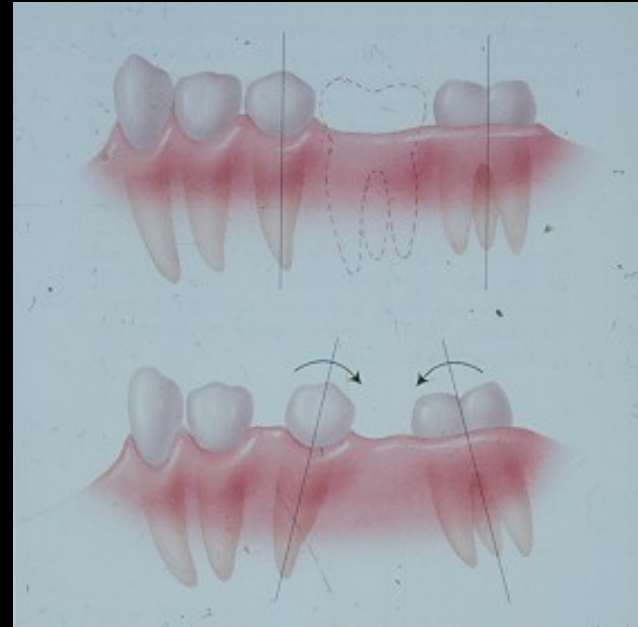
Scelatal anchorage ?!

Hyrax appliance (skeletal expansion)

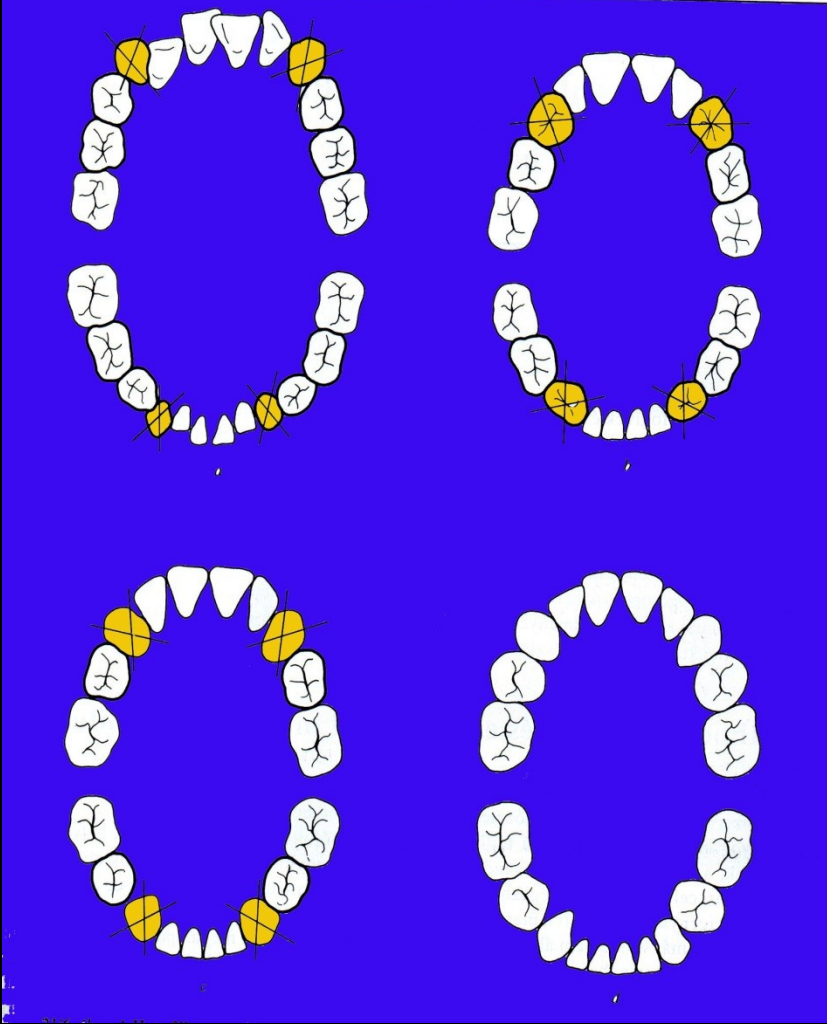
TPD



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- Vertical anomalies: open bite
- deep bite
- appl.: bimaxillary functional appliances activator, bionator, Frankel-appl., Hansa-appl. etc.
- 4. Diasthema medianum
- appl.: removable appliance with springs
- brackets
- 5. Crowding with or without lateral crossbite
- appl.: expansion of the dental arch with active removable plates or quad-helix or hyrax
- 6. Timing of first molar's extraction (10 – 12 years)
- (reason: gangrena, periostitis, periodontitis etc.)
- 7. Hotz serial extractio
 - ◆ primary canines
 - ◆ primary first molars
 - ◆ permanent first premolars



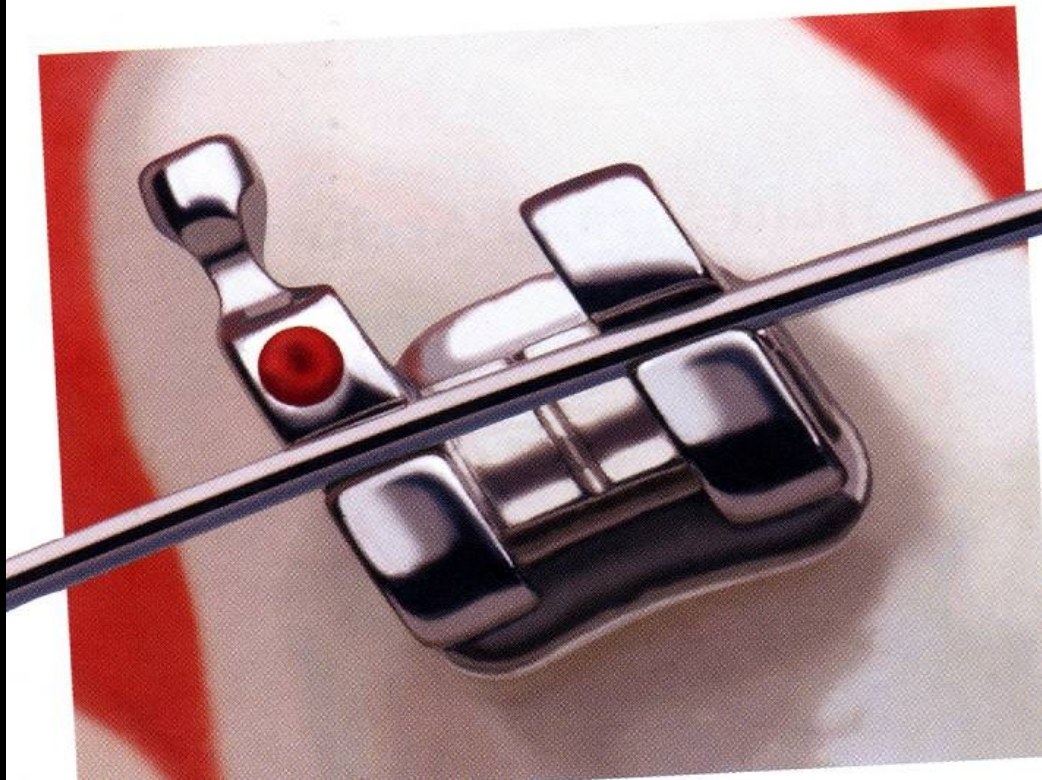
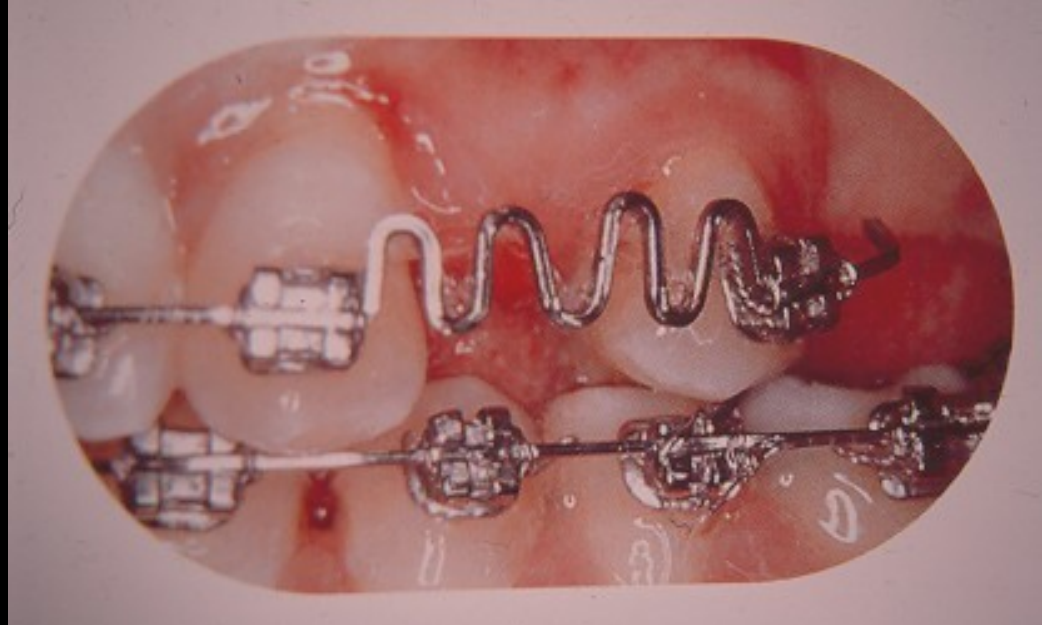
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Orthodontic treatment in permanent dentition

- 1. Treatment with fixed appliances
 - - multiband, multibond
 - - lingual and palatinal arches
 - - Hyrax
- 2. Orthodontic treatment with extraction (most frequently: first premolars)
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1. Elsősorban rögzített készülékkel végzett kezelések

- 2. Orthodontic treatment with extraction (most frequently: first premolars)

reason: crowding or overjet

3. Kombinált sebészi - orthodontiai kezelések

például: retineált fogak sorbaállítása

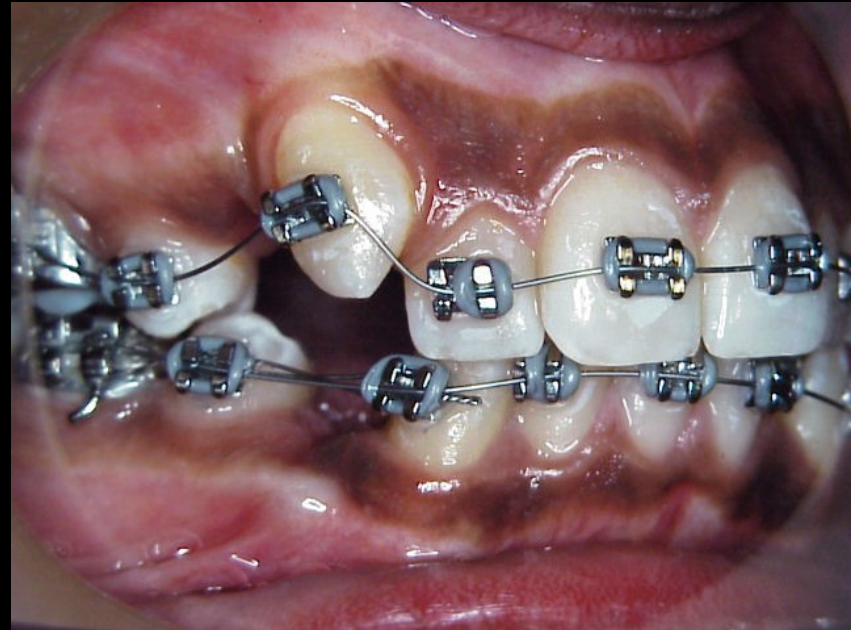
4. Fogak számbeli rendellenességeinek és a foghiánnyal kombinált anomáliák ellátása

hiány zárása orthodontiai úton
preprotetikai orthodontiai kezelések

5. Orthognath műtétek

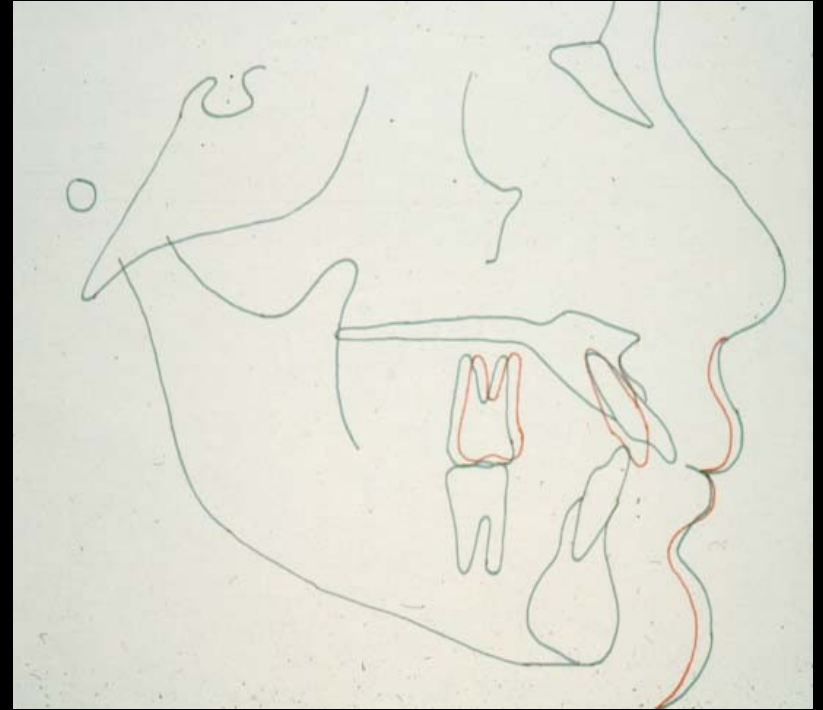
általában tizennyolc éves kor körül

6. Bölcsességfogakkal kapcsolatos problémák

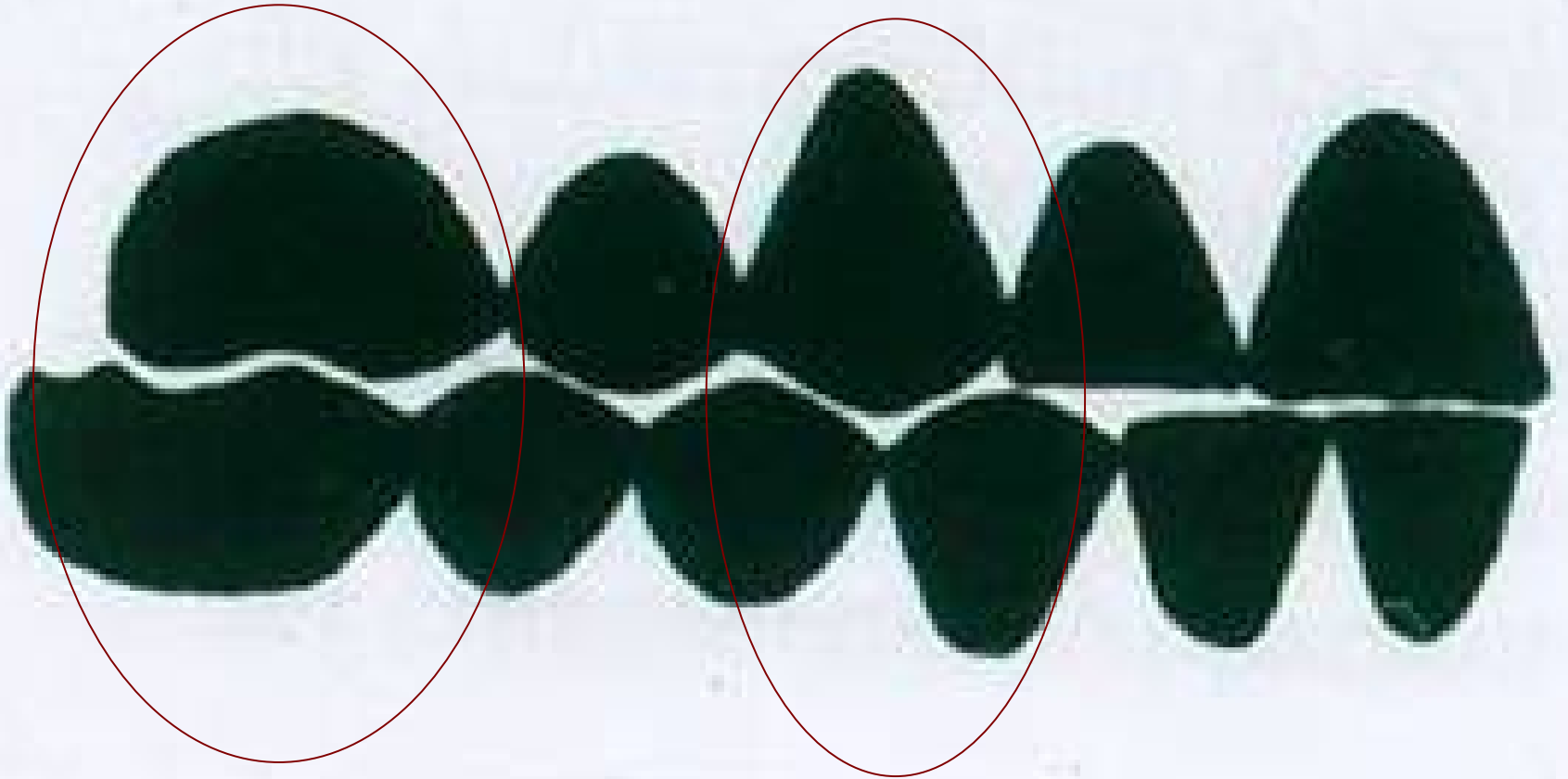


CLASS II

Extraction of upper premolars



The growing has already finished
OVERJET
PROGNATHISM
Functional open bite



Four premolar extraction



Crowding, prognathism, lack of place

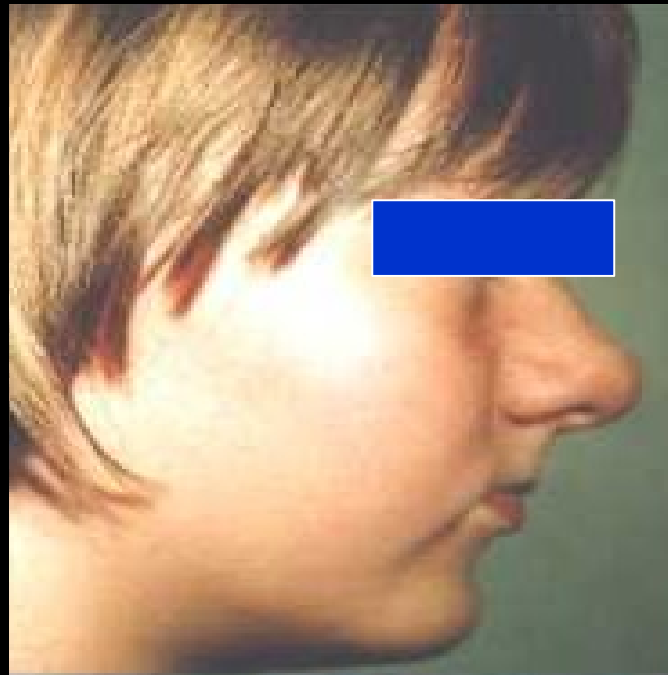


4,4



5,5

Profile !!!



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f.e.: impacted teeth

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space closure or preprosthetic orthodontic treatment

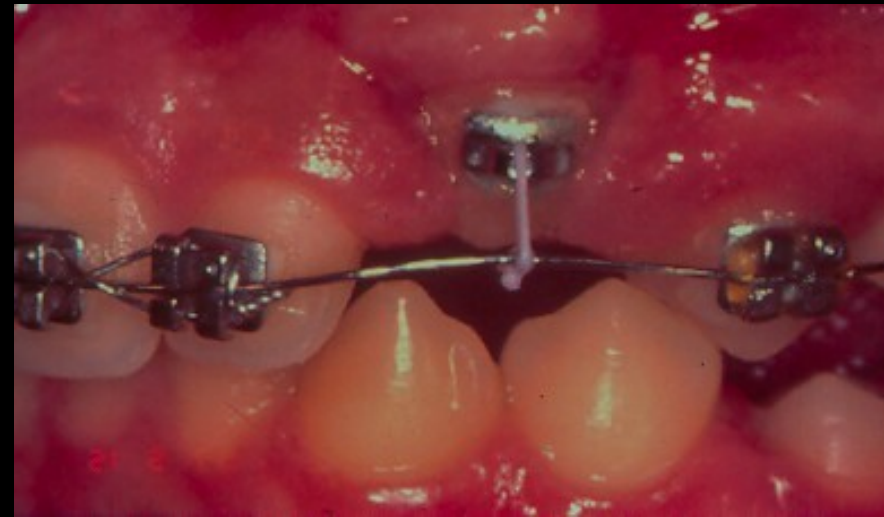
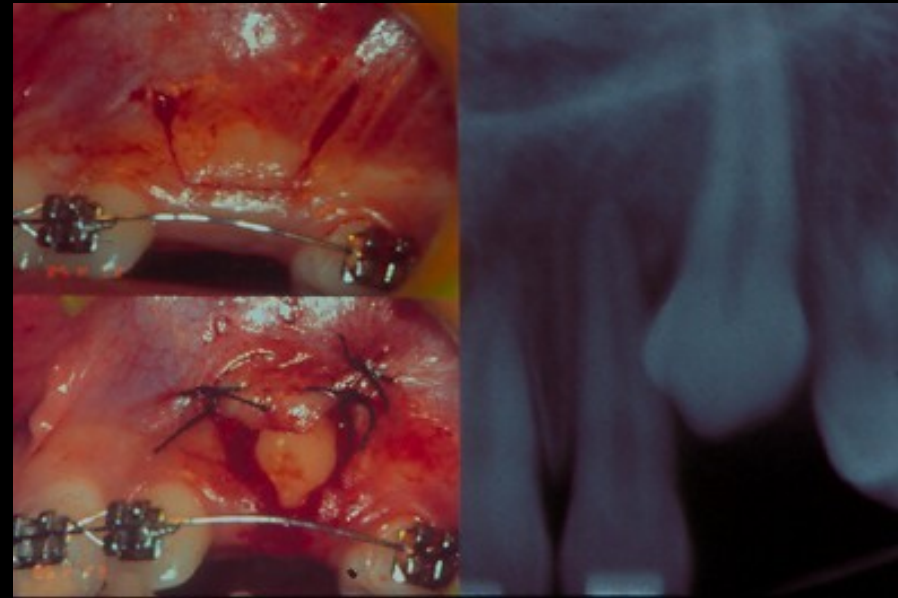
-reason: aplasia, accidents, caries

5. Dysgnathia operations (age: 18)

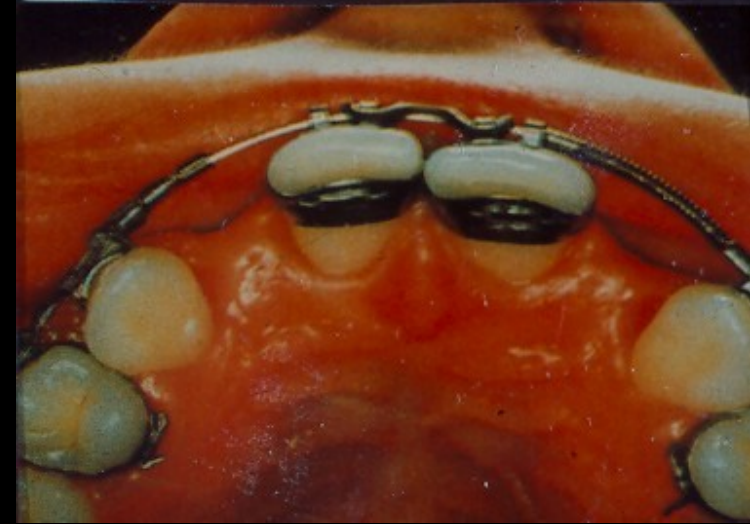
progenia, prognathia, open bite

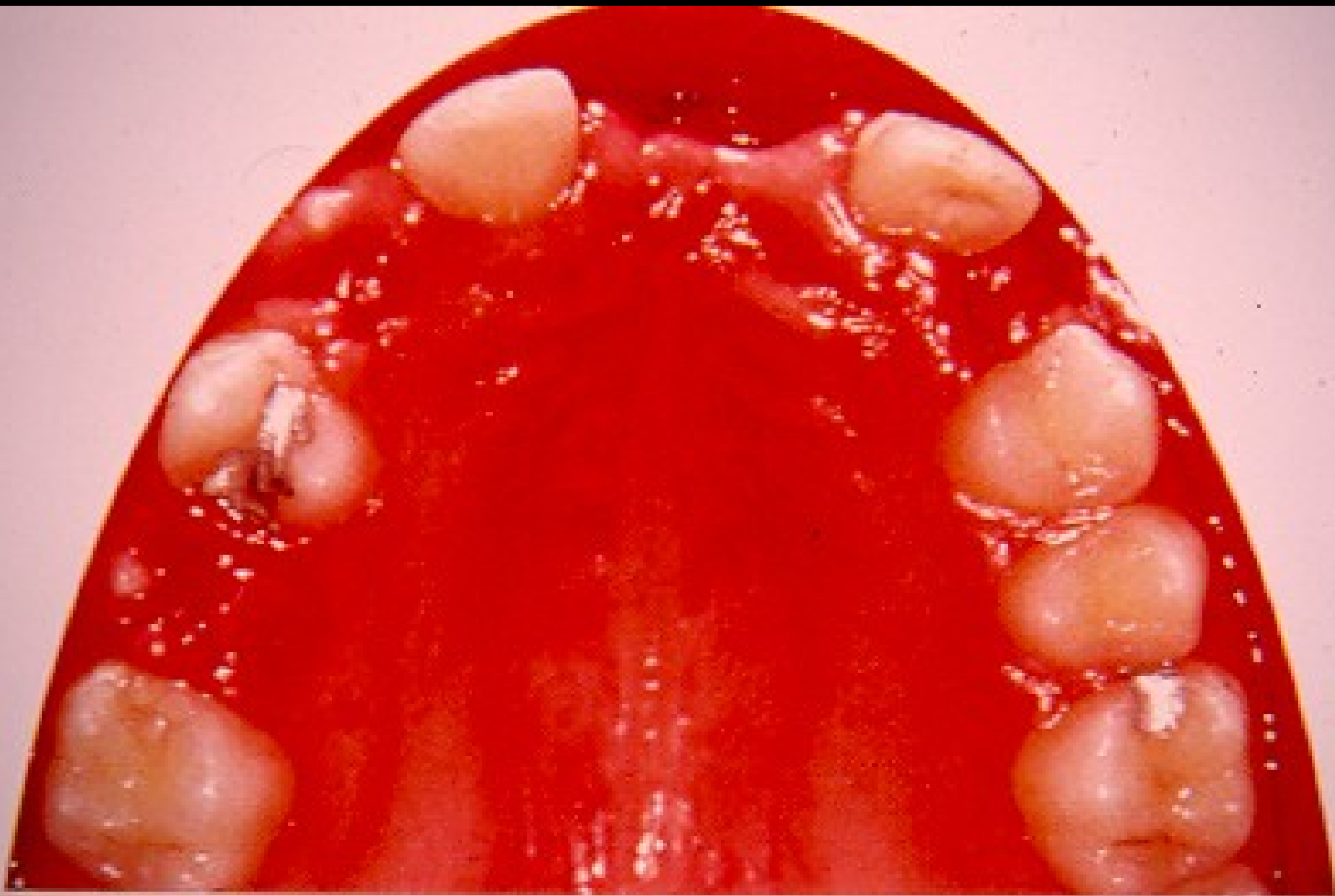
6. Orthodontic treatment in periodontal deseases

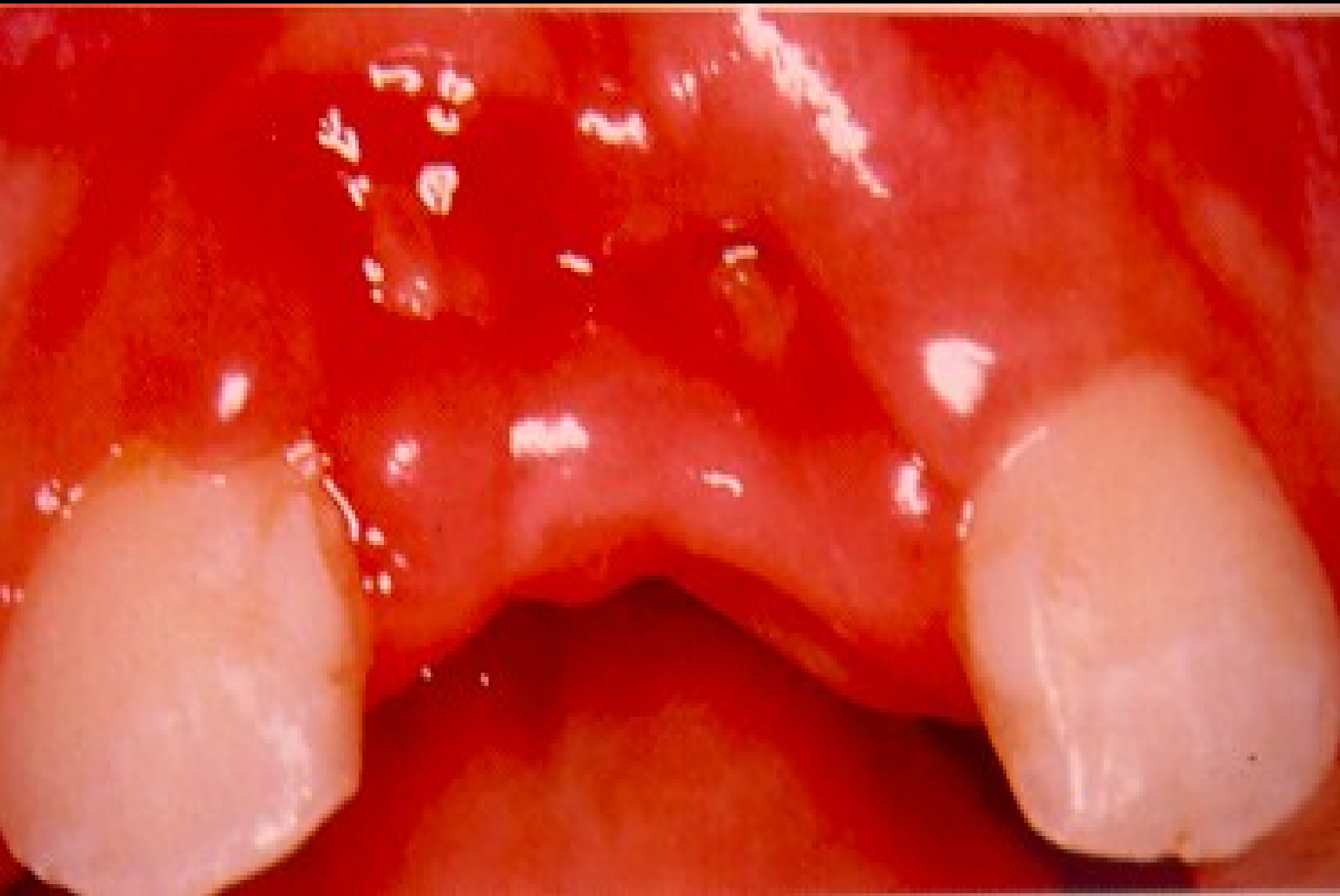
7. Problems with wisdom teeth

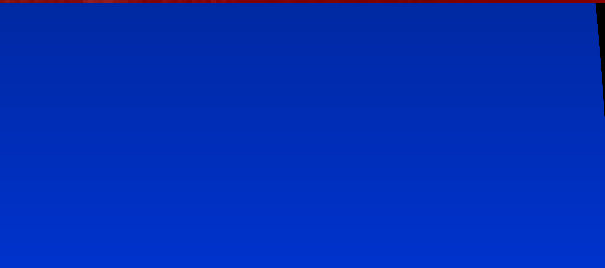


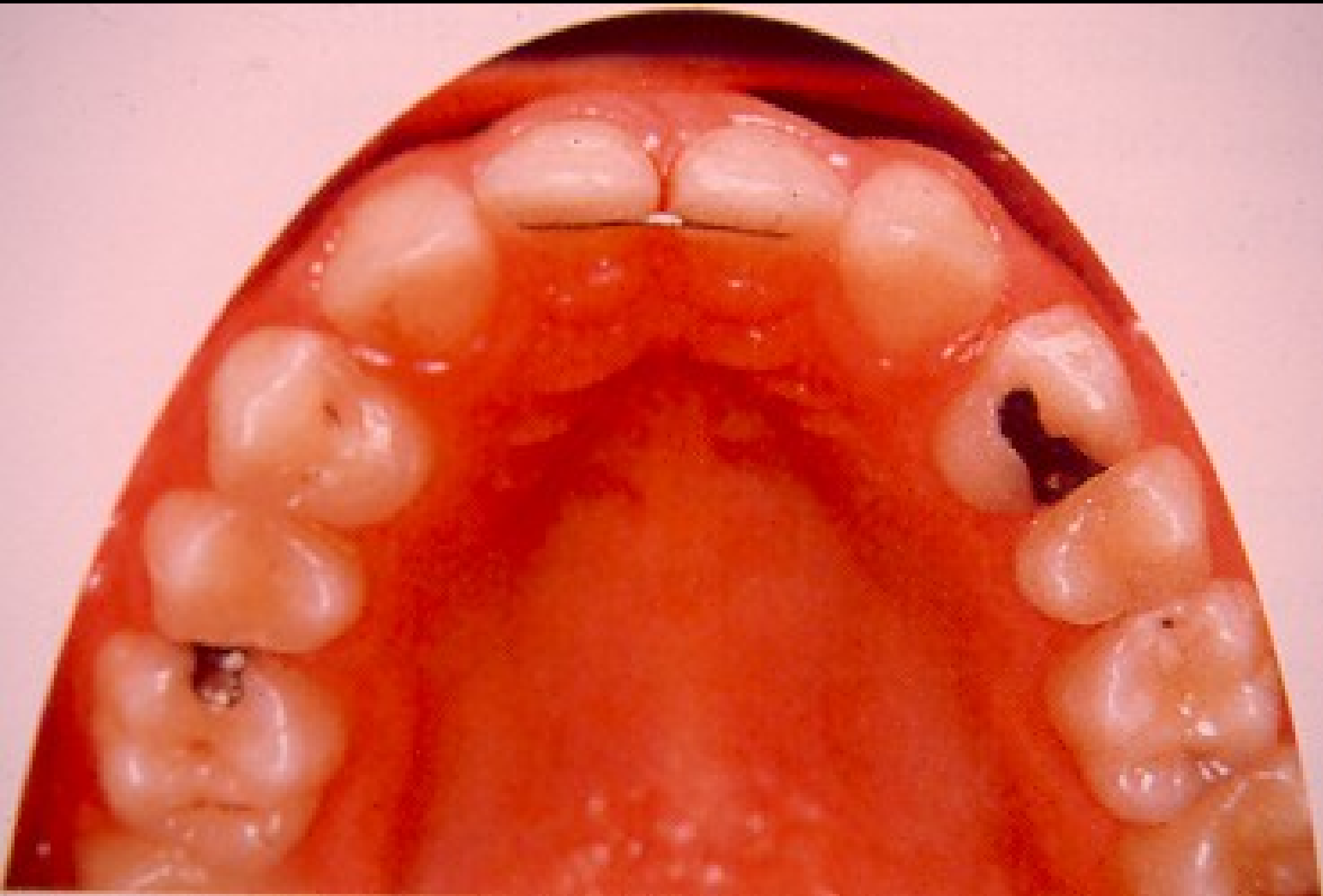
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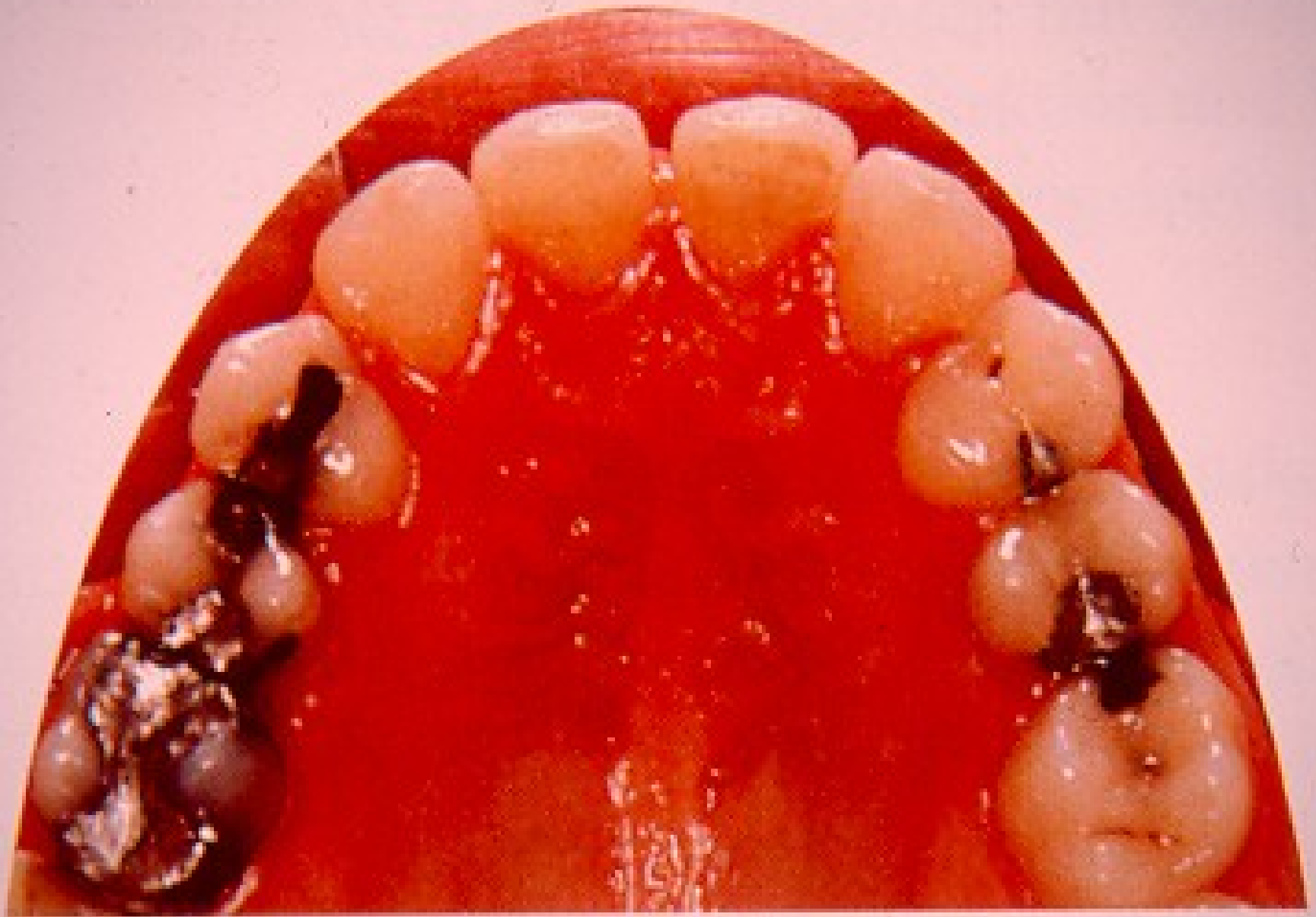












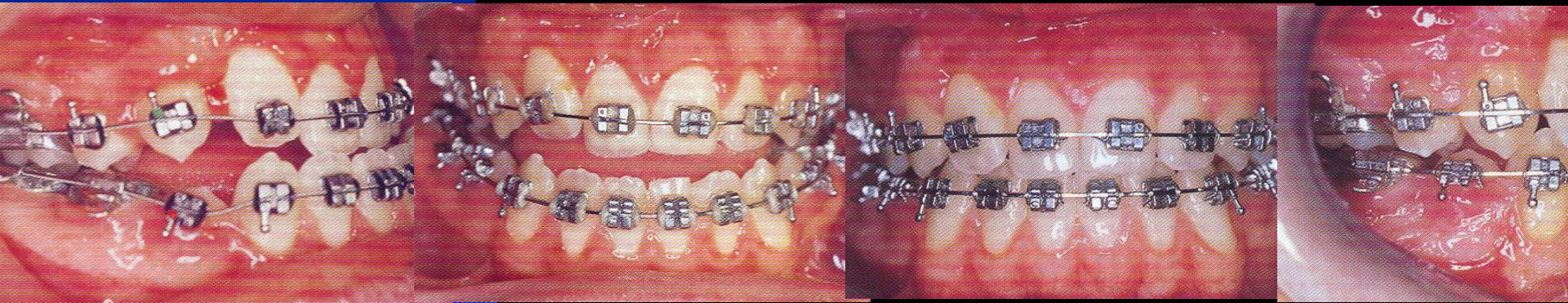
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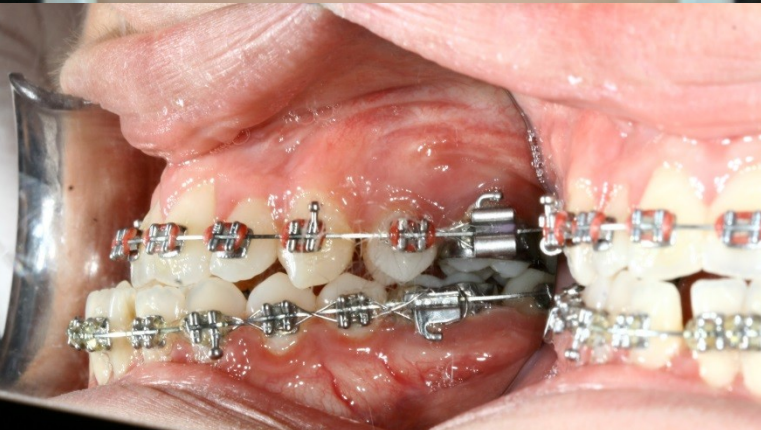


Orthognath surgery

- After the age of 18

Orthodontic treatment before the surgical intervention



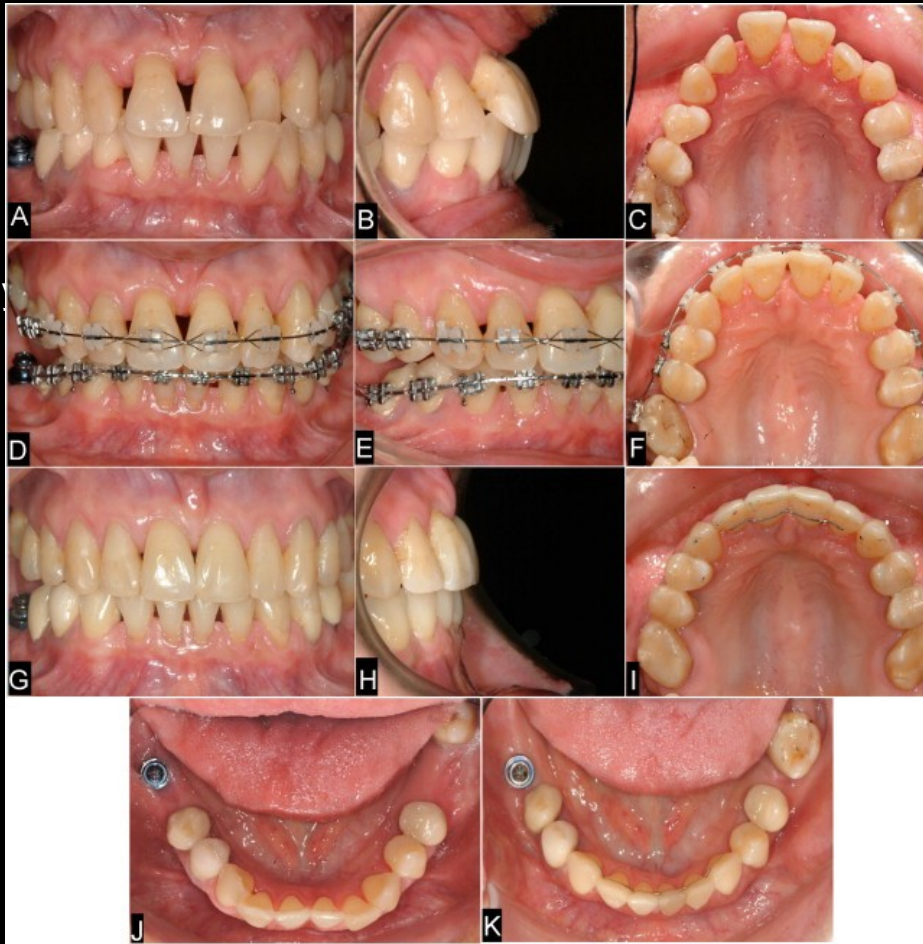


Prognathism of the mandible



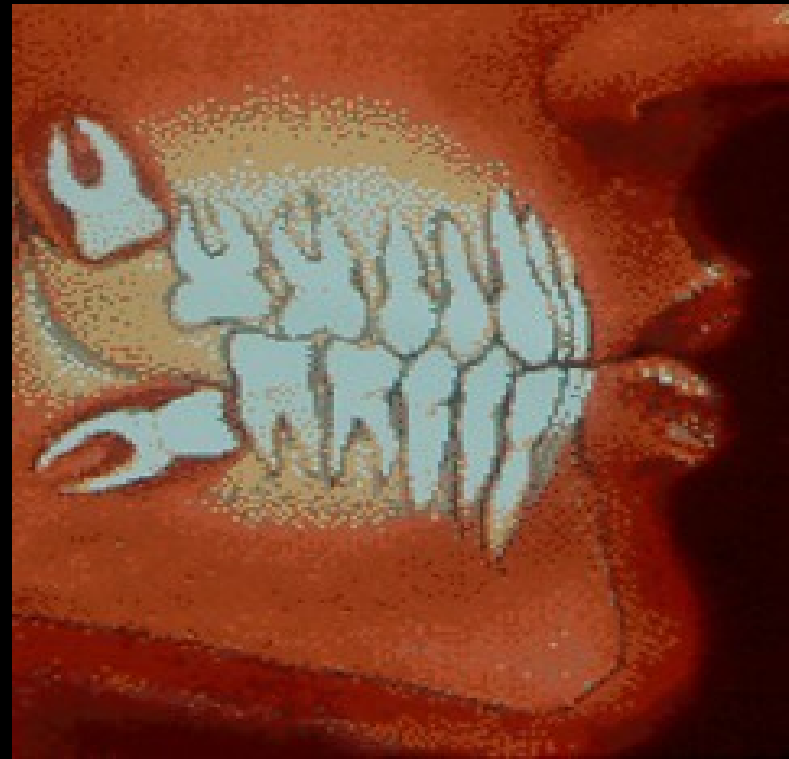
Dr Nemes Bálint esete

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- Treatment with fixed appliance: 1-3 (4-5) years
- The length of retention is twice longer than the active treatment

1 év > 2 év

- The treatment with removable appliance takes several years
- The retention time is shorter (half year)