Gebitsontwikkeling en kaakgroei bij de schisispatiënt en orthodontische implicaties

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• Infant orthopedics
• Orthopedics at the age of 6-7
• Bone graft: expansion upper arch
• Orthodontic treatment
  Surgery- Orthodontic treatment
Infant orthopedics
- Presurgical treatment
- Early orthopedic treatment
- Presurgical orthopedics
- Neonatal orthopedics
- Early maxillary orthopedics

What’s in a name?
• Maxillary appliance at a very young age

• Mc Neil

• Treatment modality to narrow the clefts in infants with UCLP
  • Facilitate surgery
  • Prevent undesirable effects of lipclosure
  • Favour speech development
• Optimal time? Period of greatest acceleration of growth of maxilla

• Birth to 7 months of age

• Clinical experience, never evaluated scientifically

• Adopted in many centers
- Semi-active plates
- Active plates
- In combination with extra-oral stripping, bone grafting

Results: impaired growth of the maxilla
Criticism: Berkowitz, 2006
• Passive plates (intrinsic growth)
• Naso-alveolar molding (NAM) 1993
• In combination with extra-oral stripping
• PROPONENTS

• Narrow the cleft
• Less feeding problems
• Keeping tongue out of cleft
• Restoring the symmetry of the maxilla
• Facilitation of lip surgery
• Better speech development
• Psychological support for parents
• Psychological advantages for the child
• ....
Are there long-term benefits to presurgical infant orthopedics in cleft children?

Long-term effects of presurgical infant orthopedics in patients with cleft lip and palate: a systematic review
Uzel A, Alparsian N
Cleft Palate Craniofac J 2011; 48: 587-595
• Results:

• Passive PSIO appliances showed no + effects
  o Motherhood satisfaction
  o Feeding
  o Speech
  o Facial growth
  o Maxillary arch dimension
  o Occlusion
  o Nasiolabial appearance

Uzel A, Alparsian N
Cleft Palate Craniofac J 2011; 48: 587-595
Conclusion

PSIO showed no long-term benefits in 7 of the 8 assessed treatment outcomes

Some long-term improvement in nasal symmetry may be found with nasoalveolar molding
- Nijmegen, Amsterdam, Rotterdam
- UCLP
- 4 main subjects:
  - general aspects,
  - surgical and orthodontic aspects
  - speech and language development
  - cost effectiveness
- Randomly IO+  IO-
- Total of 54 patients  (27 in each group)

Dutchcleft study
• **General aspects**
  IO has **no** effect on satisfaction of the motherhood

• **Surgical and orthodontic variables**
  IO has **no** effect on surgical and orthodontic variables up to the age 1 ½

• **Speech and language development**
  IO has **no** effect on speech and language development at the age 6 year

• **Cost- effectiveness**
  IO is a **very expensive** treatment in relation to the effects obtained
• NO INFANT ORTHOPEDICS IN UCLP
• IN BCLP, INFANT ORTHOPEDICS ARE STILL USED
Orthopedics at the age of 6-7
Many of the orthodontic problems of children with cleft palate, result not only from cleft itself but also from the effects of surgical repair.

Although early surgical intervention of the cleft palate improves the patient’s quality of life, it also tends to constrict the maxilla.

They contribute to anterior and posterior crossbite to a varying degree. (Tindlund et al., 1993)
Developmental problems

- Transverse Deficiency
- Antero-Posterior Deficiency
Sagittale beïnvloeding met behulp van mask van Delaire
Orthopedics at the age of 6 - 7?
Orthopedics at the age of 6 - 7?
Bone graft: expansion upper arch
At the age of 8

- Alveolar bone grafting
- Orthodontic pretreatment (expansion)
- Autologous bone grafts (iliac crest, rib, chin, cranium)

- Closure of remaining oronasal cleft
- Stabilisation of the maxillary segments
- Support for the nostrils
- Eruption of permanent canine

- Osteotomy of the premaxilla – Bilateral Clefts
Several orthodontic devices have been developed for maxillary expansion

- Rapid Maxillary Expansion (RME)
- Quad helix, removable plate
- Transpalatal distractor
Orthodontic treatment
Surgery- Orthodontic treatment
• Cleft lip and palate patients are going through an extensive treatment with orthodontic and surgical correction of the position of teeth and hard/soft tissues.

• Orthodontic treatment plays an important part in the overall rehabilitation of the child with cleft palate.
Unilateral cleft lip and palate complete at the right side

8 years
Agenesis

1.2
2.2
2.5
- Eruption of both canines
- 10 years

After the bone graft
After the orthodontic treatment
After the orthodontic treatment
Transplantation of third molar
I thank you for your kind attention