

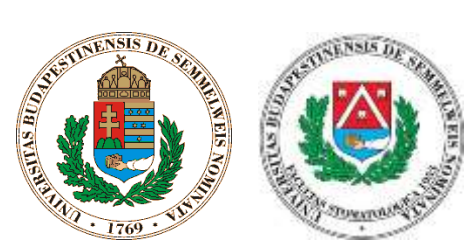


Complex treatment of cleft lip palate patients

Dr. Bálint Nemes

Semmelweis Egyetem

Gyermekekfogászati és Fogszabályozási
Klinika



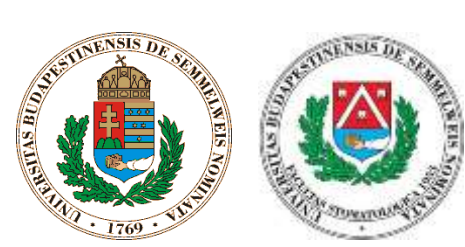
What we want to avoid





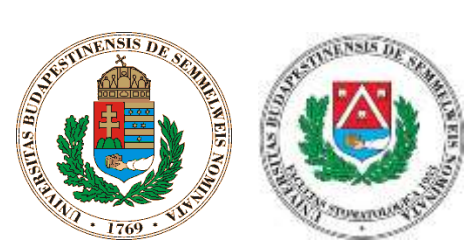
ARCHASADÉK-SEBÉSZETI ELLÁTÁS A SEMMELWEIS EGYETEM I.SZ. GYERMEKGYÓGYÁSZATI KLINIKÁJÁN



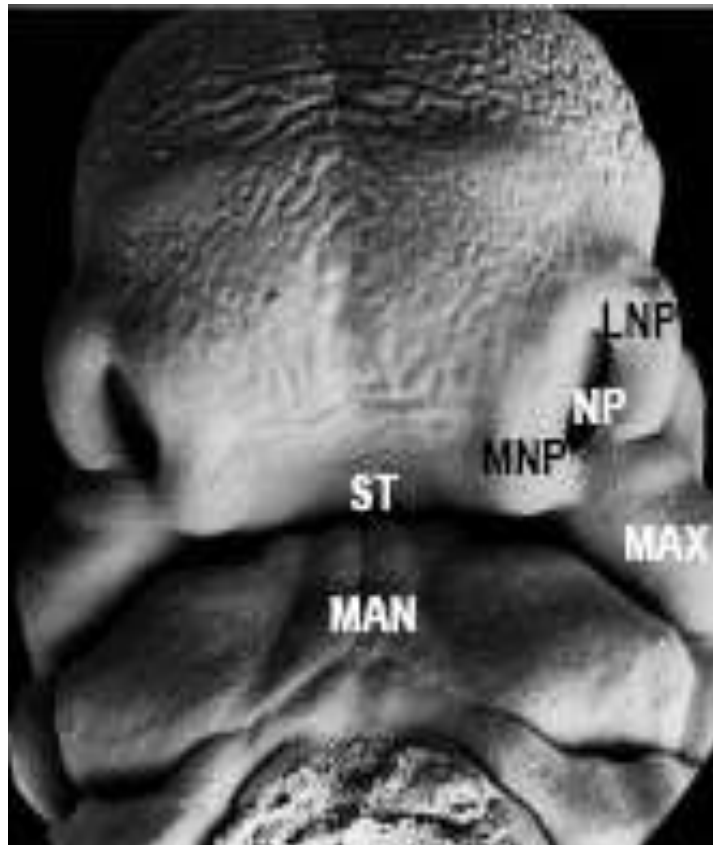


The Cleft-Team

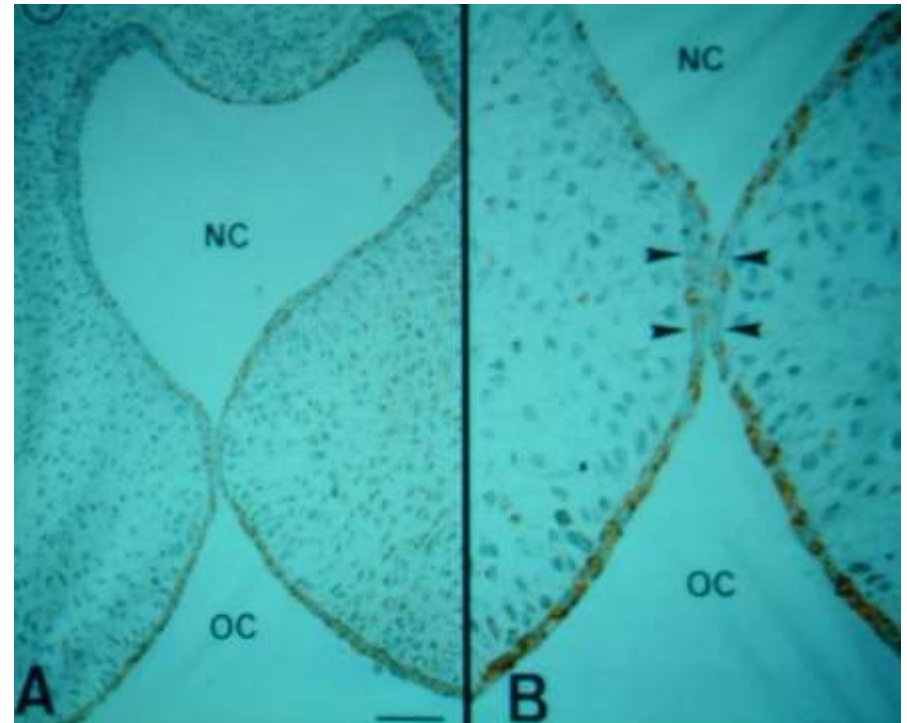
- Cleft surgeon
- ENT specialist
- Speech therapist
- Orthodontist
- Genetic consultation
- Psychologist



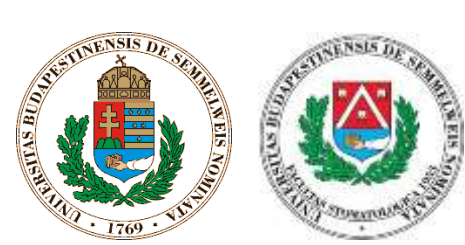
The lip closure in utero



37. Day



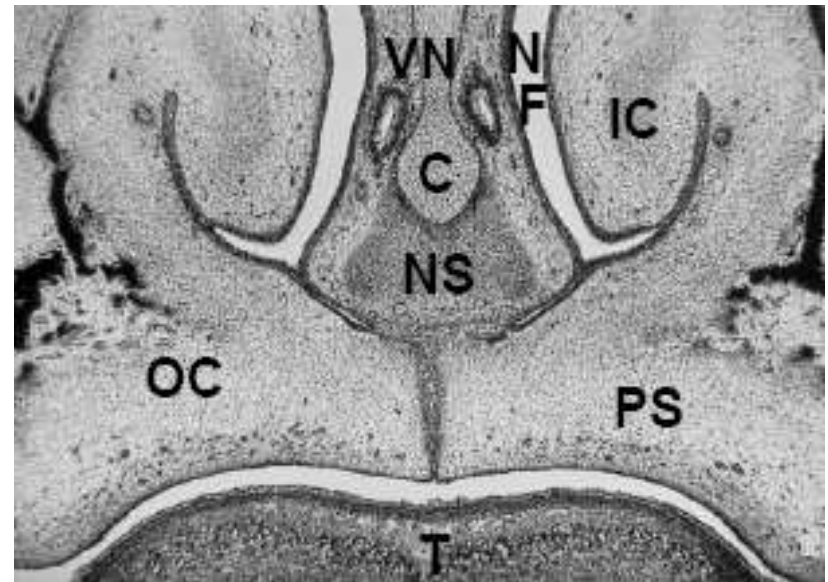
APOPTOSIS



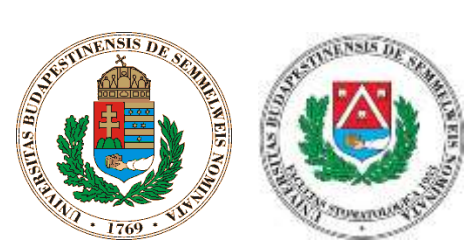
The palate closure in Utero



52. Day

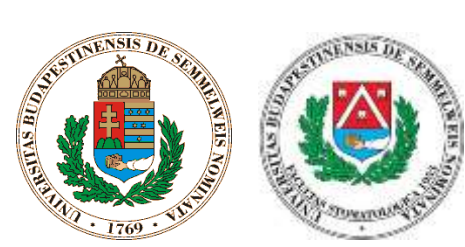


57. Day



Isolated cleft palate

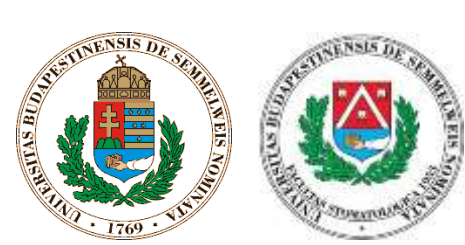




Development of the face

3. Month



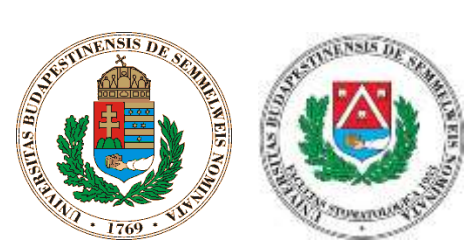


Types of cleft lip palates

Partial cleft lip



Complete cleft lip palate



Frequency:

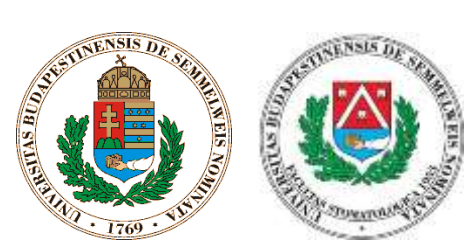
CL/P - 1/800-1000 Birth (2.1-0.4/1000)



Left unilateral > Right unilateral > Bilateral

CP - 0.5/1000



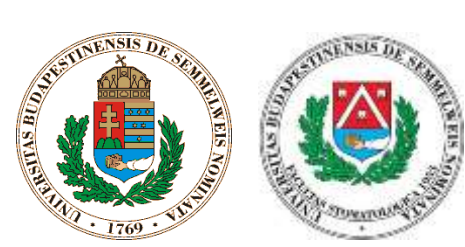


Bilateral clefts

Partial cleft lip

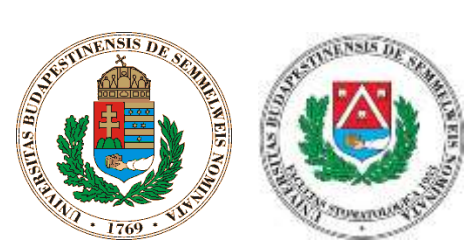


Complete cleft lip palate



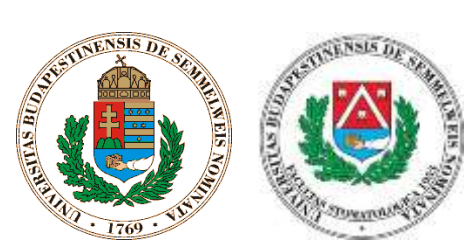
Surgery

- 3-4 Months:** Definitive lip closure of Millard (unilat) or Mulliken (bilat)
- 1 Year:** Soft palate clusere of Furlow
- 4. Years:** Hard palate closure
(hinge-door flaps)
- 8-10 Years:** Alveolar bone graft
4-flap technic (Nordin-Åbyholm)



Ralph Millard Jr



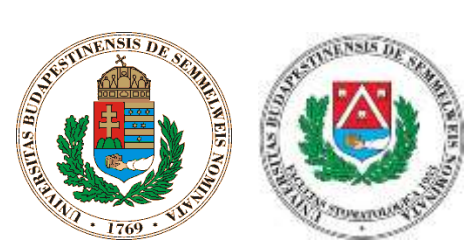


Surgical techniques in Europe: Eurocleft study

The Eurocleft project 1996-2000: overview.

Shaw WC, Semb G, Nelson P, Brattström V, Mølsted K, Prahl-Andersen B, Gundlach KK.

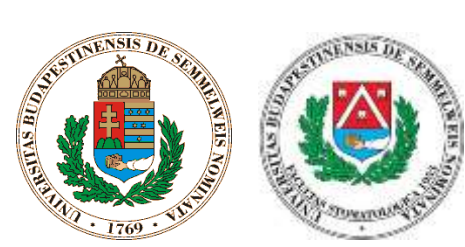
Of the **201 centres** that registered with the network, the survey showed **194 different protocols** being followed for only unilateral clefts.



Orthodontic and orthopedic treatment of CLP patients

1. Early treatment of newborn babies with Preoperative Nasoalveolar Molding
2. 7-10 Years: Upper jaw expansion and sagittal traction
3. Ab 11-12 Years: Orthodontics (tooth movement)
4. From 18 Years: Jaw surgery (if needed)

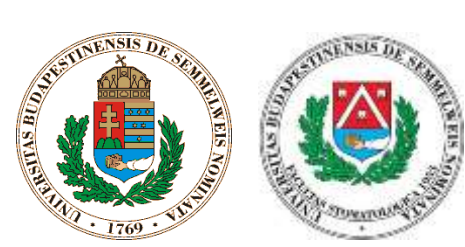




Preoperative Nasoalveolar Molding

Preoperative Nasoalveolar Molding is a orthopedic treatment before definitive lip closure:

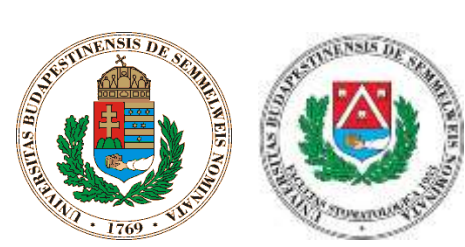
1. Passive molding of the alveolar segments with help of palatal guidance plate made of acrylic
2. Narrowing the lip segments
3. Forming of the nasal cartilages



Goals of Preoperativ Nasoalveolar Molding

1. Passive molding of the alveolar segments with help of palatal guidance plate made of acrylic.
2. Narrowing the lip segments with Lip-Taping
3. Forming the nasal cartilages with the nasal component, and lenghtening the columella

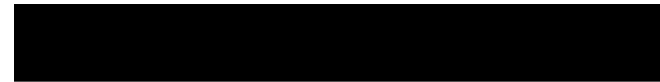


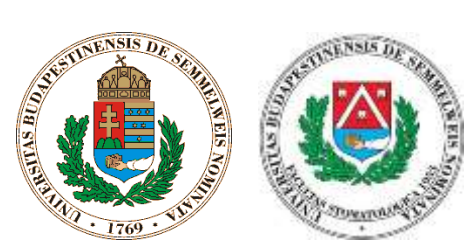


Unilateral cleft lip palate

PNAM starts in the first days of life.

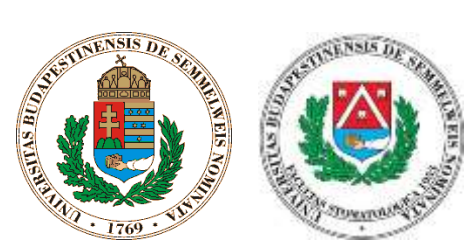
1. Impression with Alginate
2. Fabrication of the plate
3. Adding the nasal component and lip taping



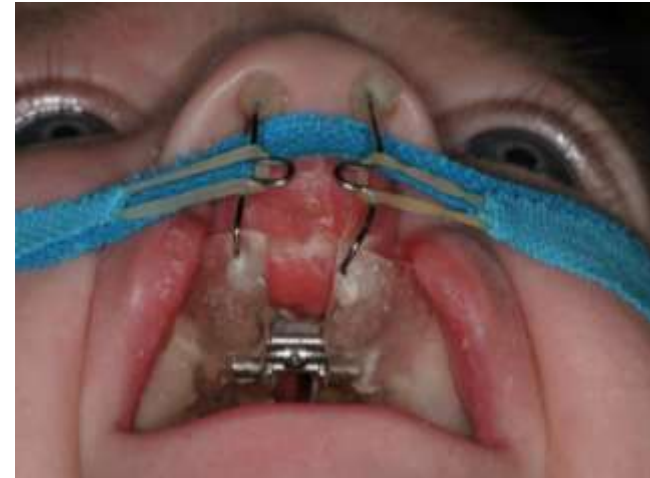


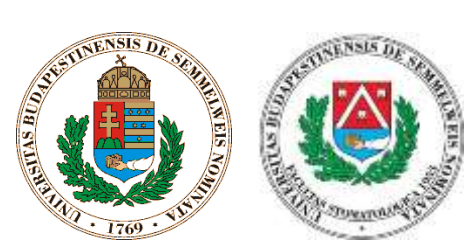
1. Alveolar molding





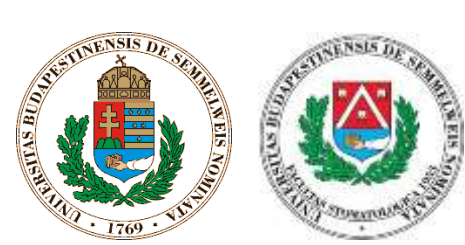
1. Alveolar molding



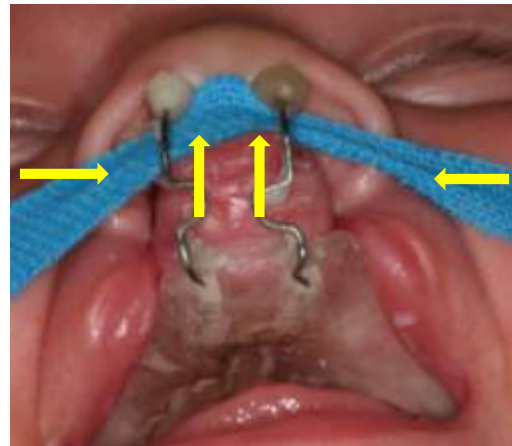
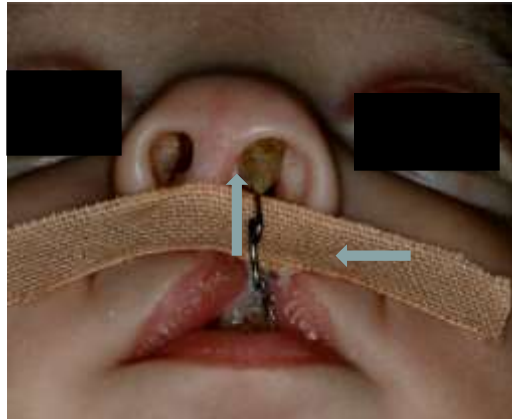


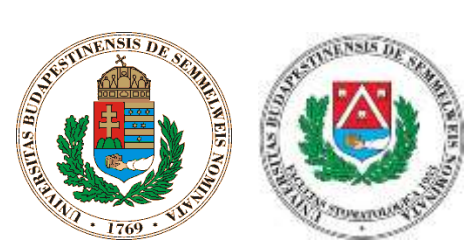
2. Approximation of lip segments



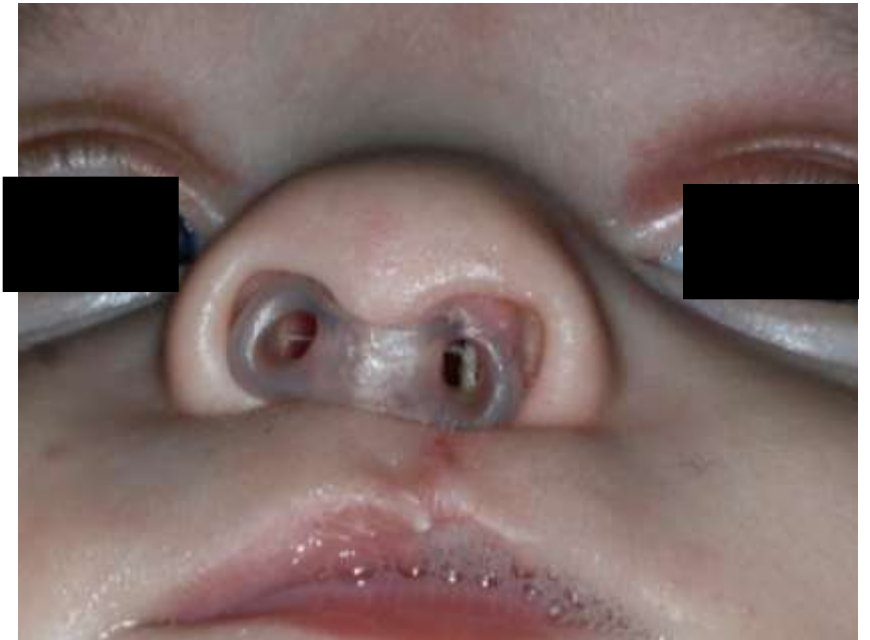
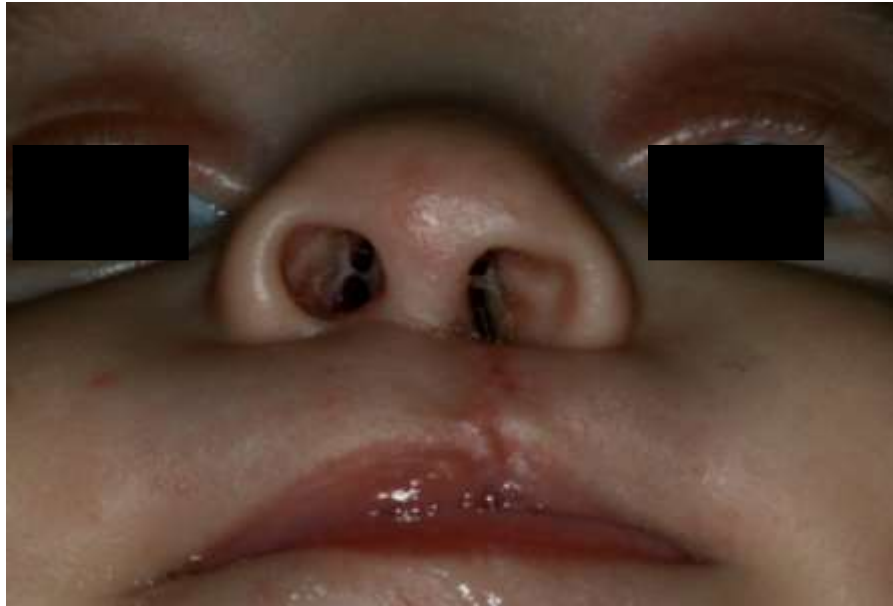


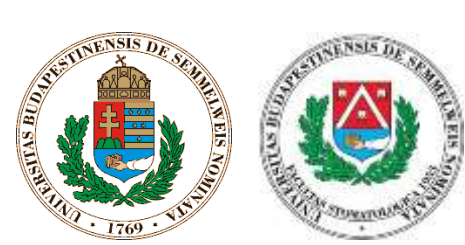
3. Preoperative nasal molding

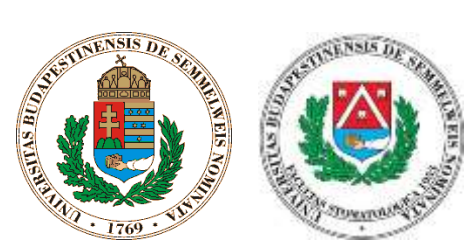




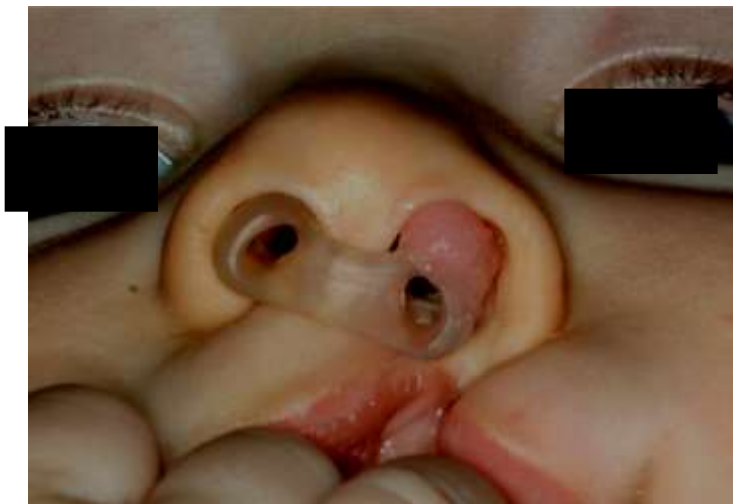
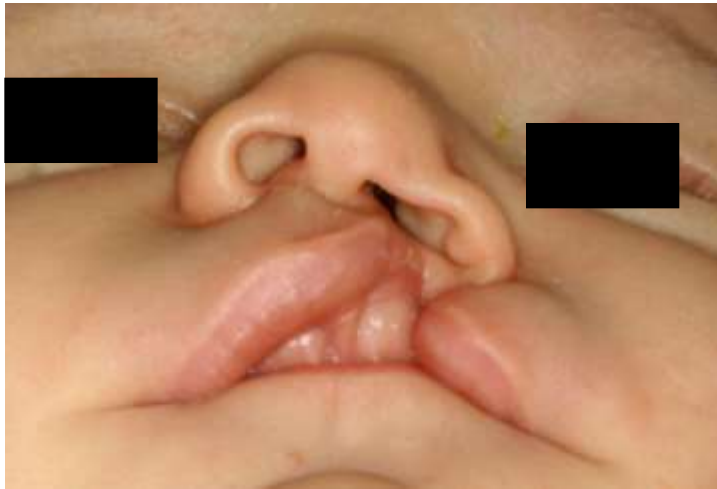
3. Postoperative nasal molding

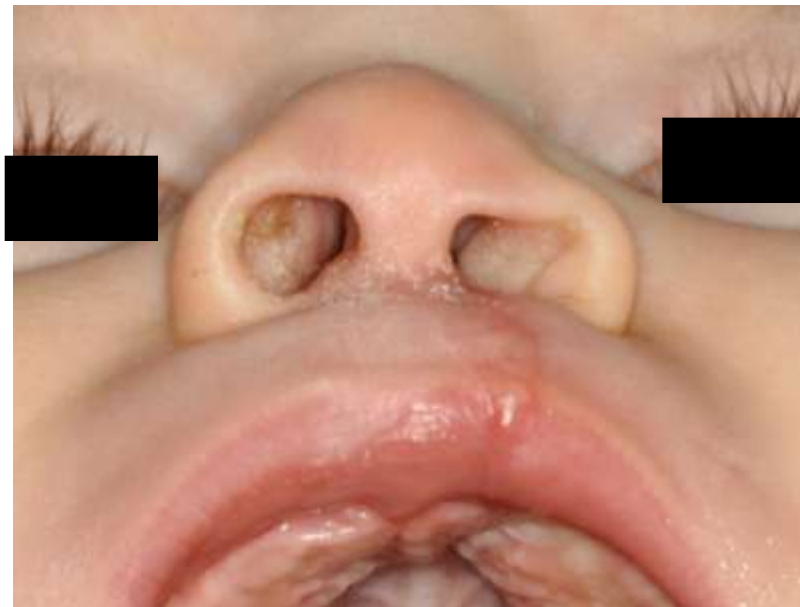
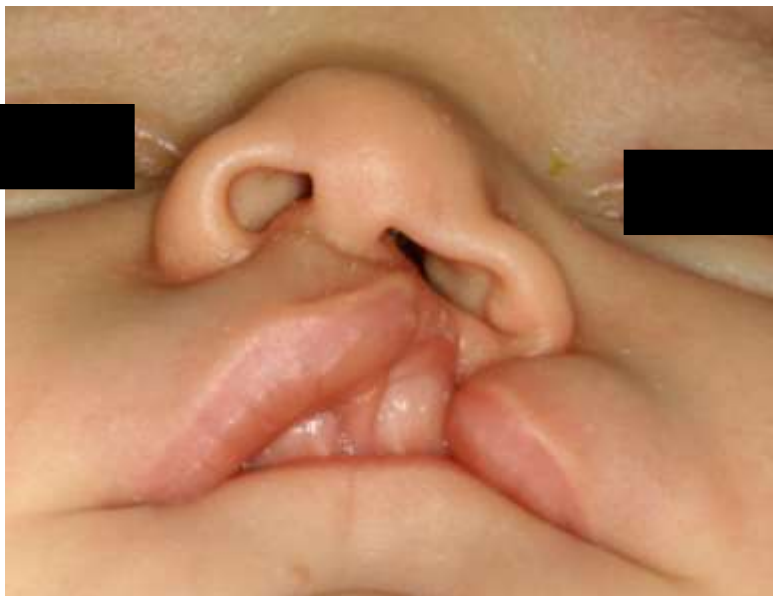
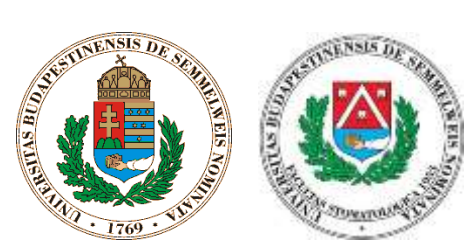


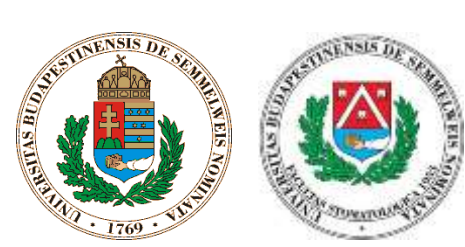




Nasal molding of incomplete cleft lip patient

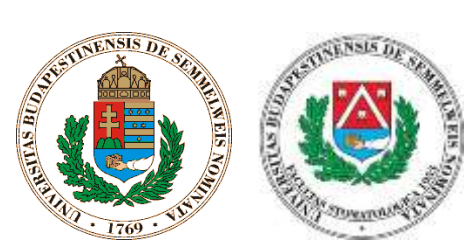






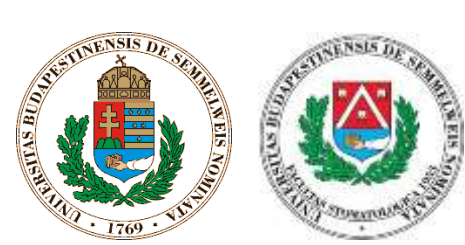
Bilateral cleft lip palate with prominent premaxilla





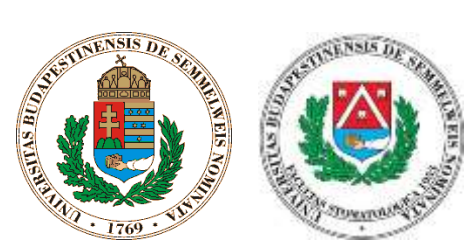
Non surgical lip adhesion and adaptation of the palatal plate





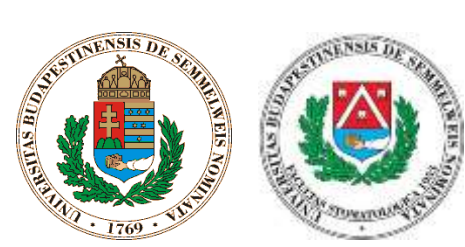
Adding the nasal component





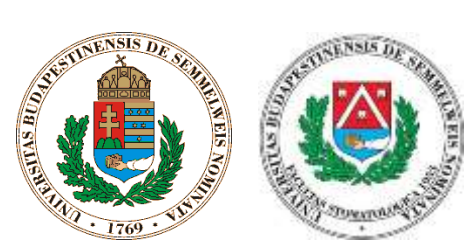
Preoperatív Nasoalveolar Molding – Pretx-Posttx-Postop

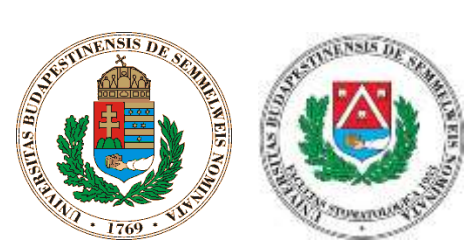


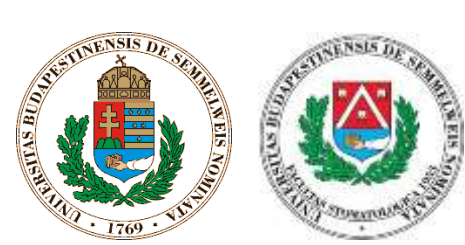


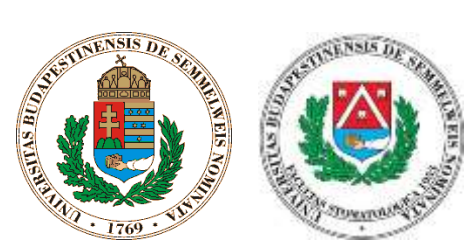
BCLP with extremely hypoplastic premaxilla



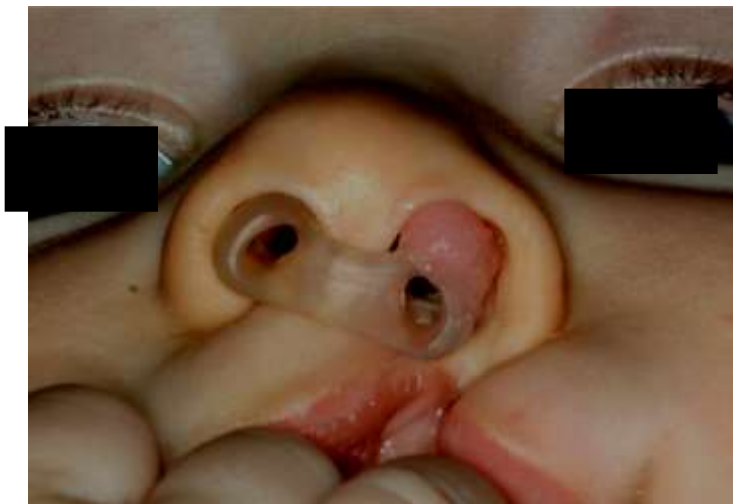
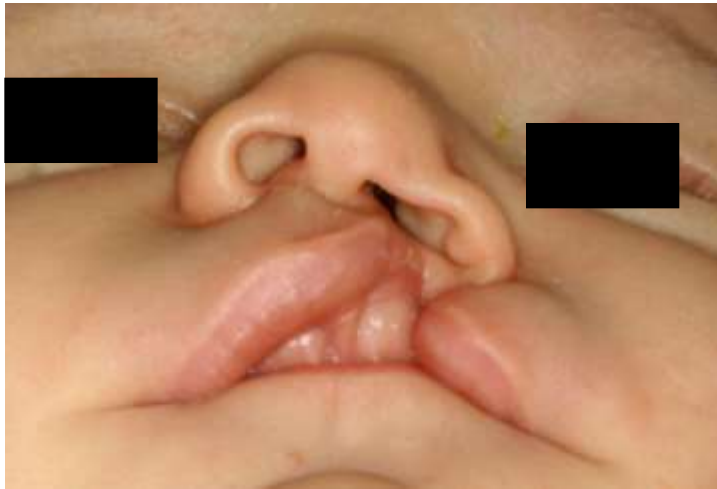


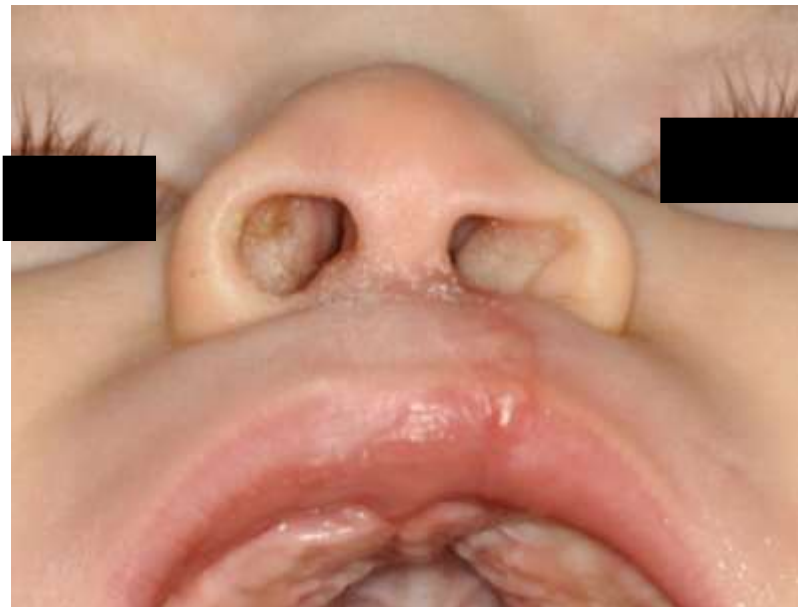
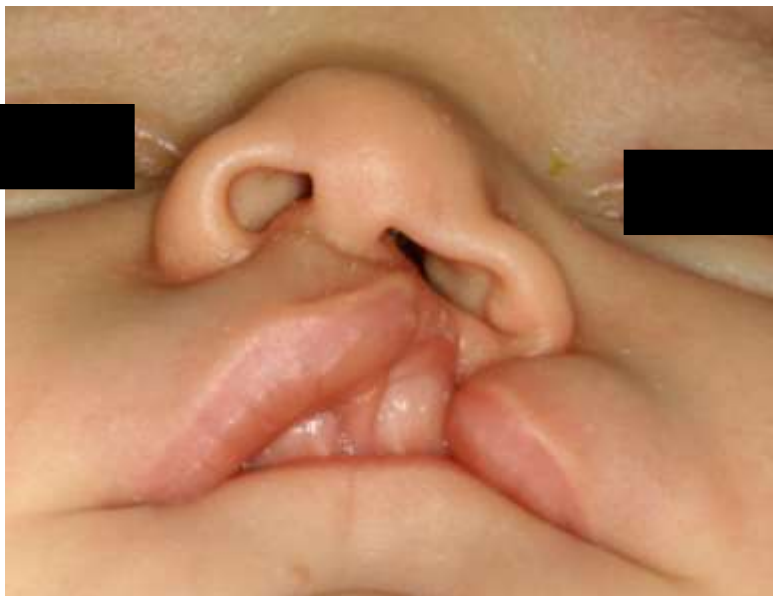
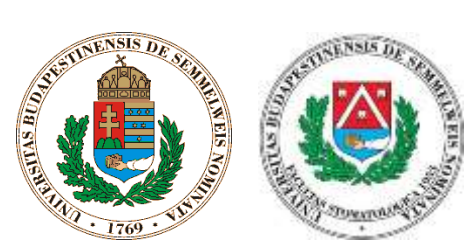


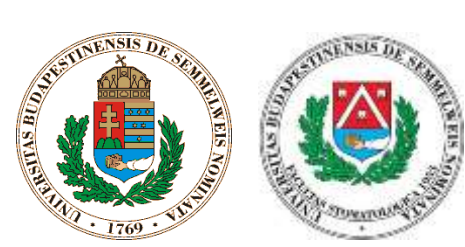




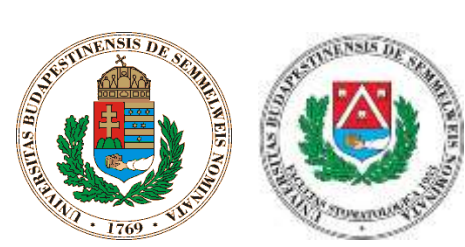
Nasal molding of incomplete cleft lip patient





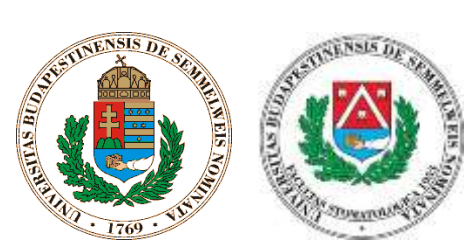


PNAM gives the opportunity to form the bony bases and the nasal cartilages



Early mixed dentition jaw orthopedics



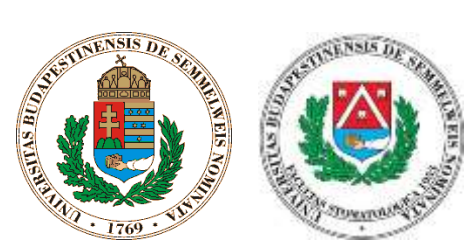


Early mixed dentition jaw orthopedics



Maxillary
expansion
Alt-RAMEC
protokoll



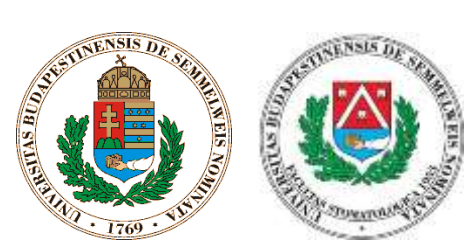


Early mixed dentition jaw orthopedics

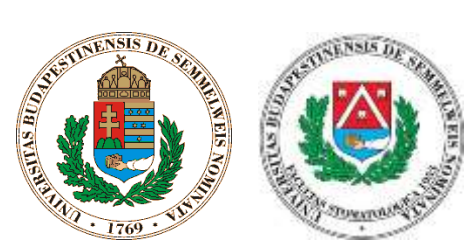


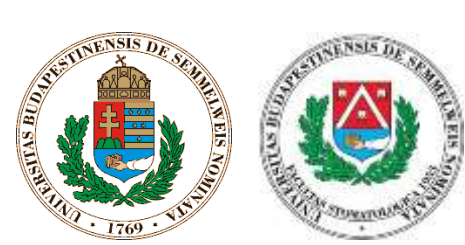
Saggital
traction of
the upper
jaw







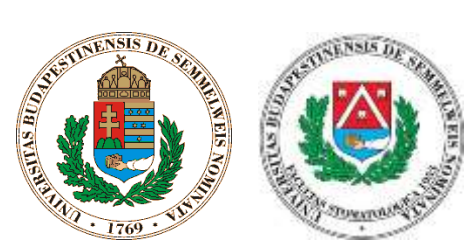




Alt-RAMEC + Liou spring

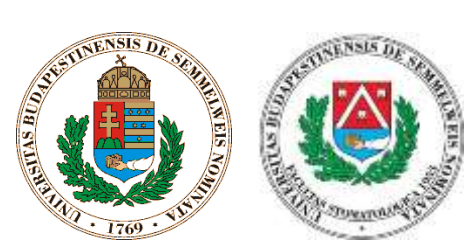


Liou and Tsai, 2005. CPCJ

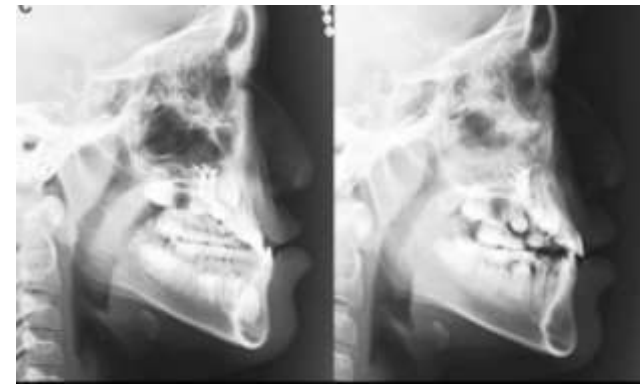
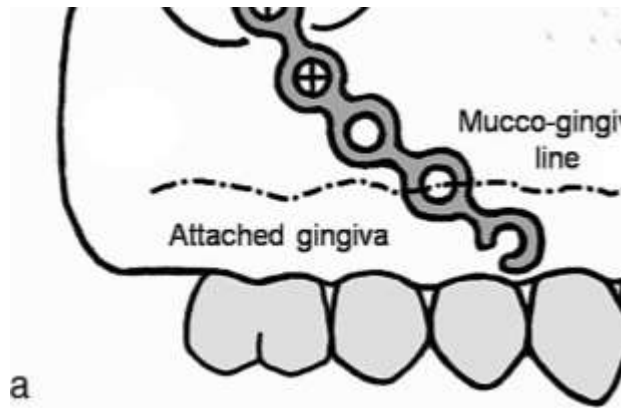


Bone Anchored Maxillary Protraction (BAMP)





Mini-Platte + Delaire Maske

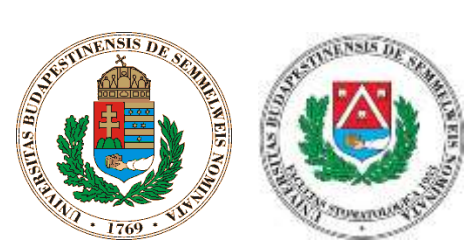


Baek et al., 2010. Angle Orthodontist

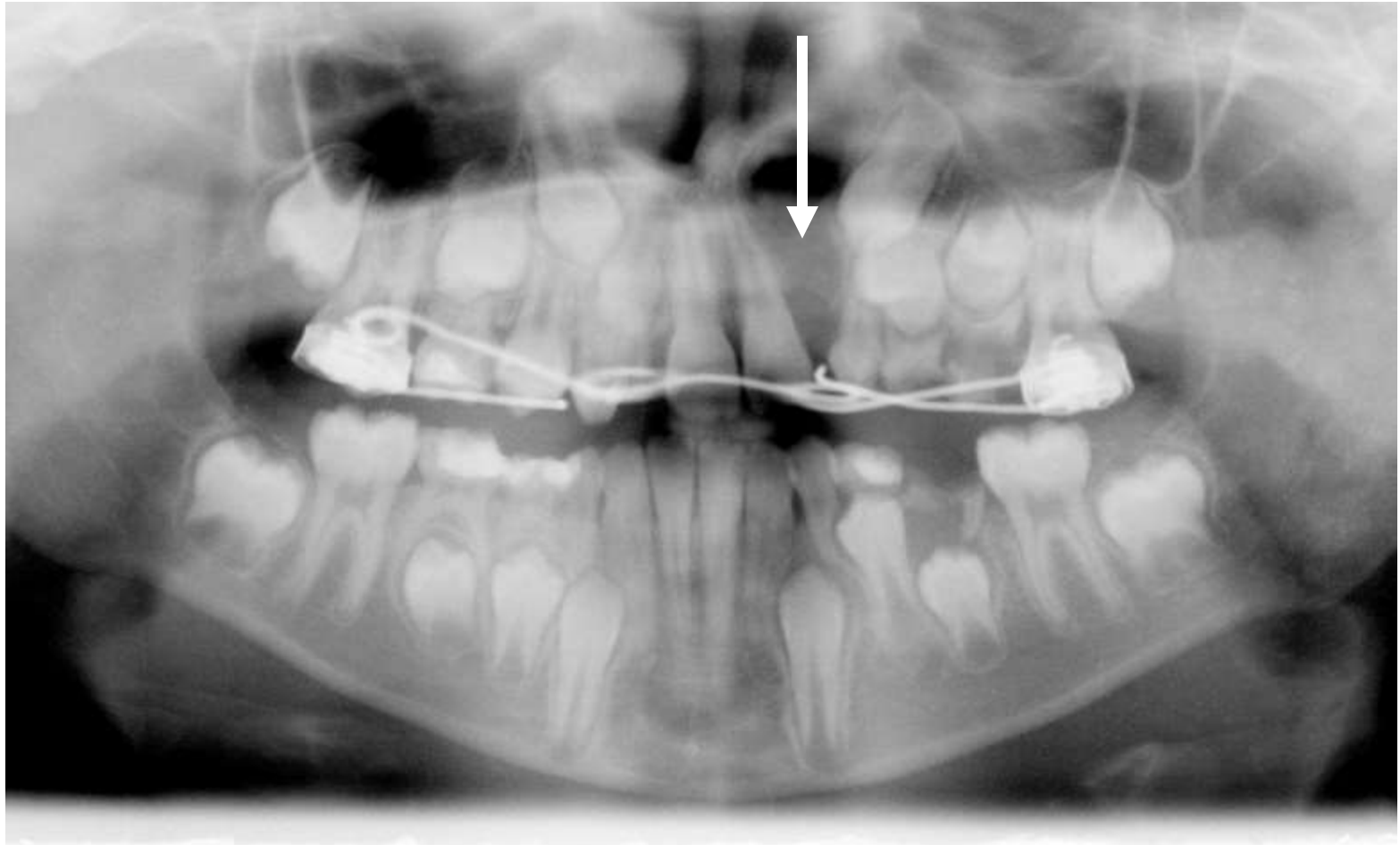


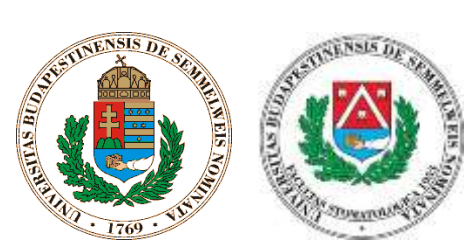
Orthodontic treatment (tooth movement)





Bone augmentation

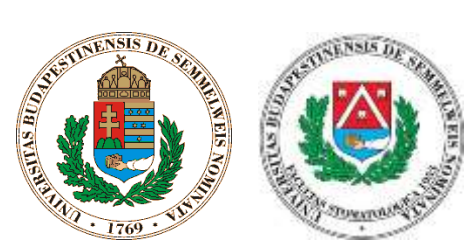


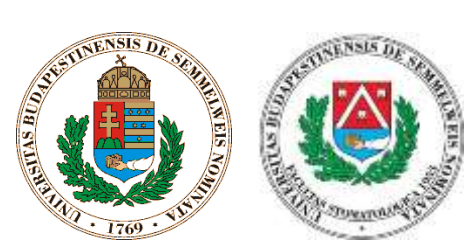


Tooth movement



After bony augmentation of the cleft alveolus





Le-Fort I advancement and BSSO setback Osteotomy



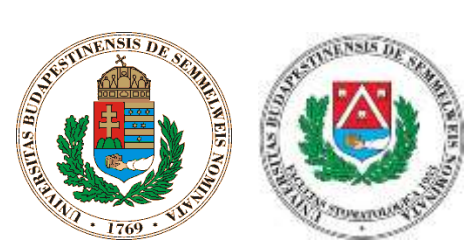


Thank you for your kind attention!

ARCHASADÉK-SEBÉSZETI ELLÁTÁS
A SEMMELWEIS EGYETEM I.SZ. GYERMEKGYÓGYÁSZATI KLINIKÁJÁN

nemesbalintdr@gmail.com





Preoperatív Nasoalveolar Molding hosszútávú hatásai

- **Longitudinal Study of Effect of Hotz's Plate and Lip Adhesion on Maxillary Growth in Bilateral Cleft Lip and Palate Patients.**

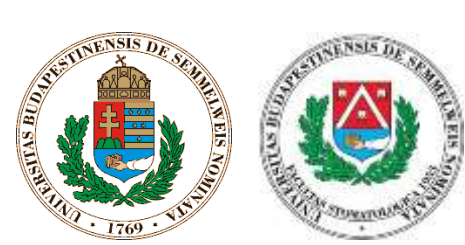
Muhammad Syafrudin Hak, DDS¹, Masaaki Sasaguri, DDS², Farida Kamil Sulaiman, DDS³, Enny Tyasandarwati Hardono, DDS⁴, Akira SUZUKI, DDS, PhD⁵, Seiji Nakamura, DDS, PhD⁶, and Masamichi Ohishi, DDS, MD, PhD^{7,*}

1. **LA had temporary negative effects on the growth of dental arch dimensions, probably synergistically with labioplasty. Its effect became negligible after palatoplasty.**
2. The negative effect of labioplasty and palatoplasty on the growth of anterior arch width lasted until the age of 5 years.
3. Collapse of the premaxilla following labioplasty was not prevented and it affected the growth of dental arch length until the age of 5 years.
4. **Treatment with Hotz's plate until about 18 months of age prevented collapse of the premaxilla and supported the growth of dental arch length** until the age of 5 years.

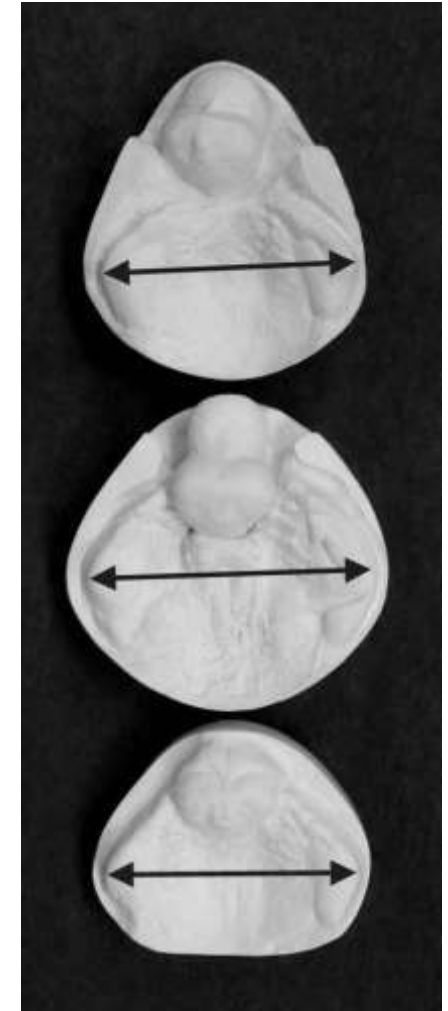
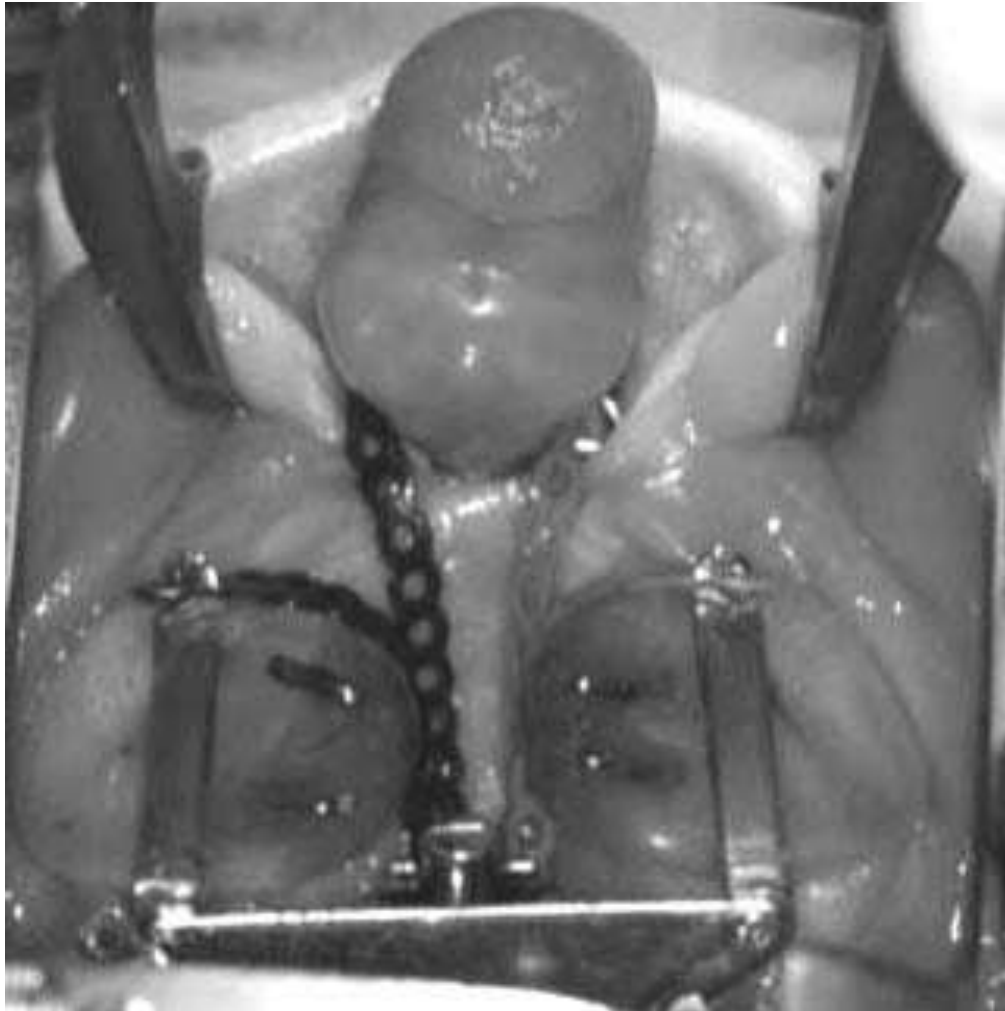
Long-term effects of presurgical infant orthopedics in patients with cleft lip and palate: a systematic review.

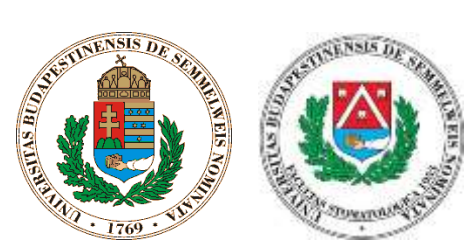
[Uzel A, Alparslan ZN.](#)

No randomized controlled trials were found on active presurgical infant orthopedic appliances and on nasoalveolar molding appliances



Latham készülék mint alternatíva





Nasoalveolar Molding USA-ban és Canadában

Current surgical practices in cleft care: unilateral cleft lip repair.

Sitzman TJ, Giroto JA, Marcus JR.

Plast Reconstr Surg. 2008 May;121(5):261e-270e.

**American Cleft Palate-Craniofacial Association
Canadian Society of Plastic Surgeons** (n = 1138) were mailed a survey inquiring about their management of unilateral cleft lip.

Responses from 622 surgeons (55 percent response rate), of whom 269 currently perform cleft surgery. The results arise from this group of 269 active cleft surgeons.

Lip adhesion, presurgical orthopedics, nasoalveolar molding, and postoperative nasal stenting are performed by limited numbers of respondents