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RECONSTRUCTION IN THE SEVERE SECONDARY CLEFT DEFORMITY AND OTHER CONGENITAL ANOMALIES

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Operated clefts occasionally will develop severe functional and esthetic deformities. The methods to correct these severe secondary cleft deformities will be presented, including: 1) soft tissue flap designs to simultaneously close oronasal fistulas, bone graft alveolar clefts, and perform osteotomies, 2) osteotomy design using rigid fixation and porous block hydroxyapatite grafting, and 3) method to lengthen pre-existing pharyngeal flaps. The secondary stage of reconstruction usually involves lip-nose revisions and rhinoplasty, as well as secondary pharyngeal flap procedures and other esthetic procedures.

Correction of other severe deformities such as Treacher-Collins and hemifacial microsomia will be presented, with counter-clockwise rotations of the maxillomandibular complex and reconstruction with sternoclavicular grafts.

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RECONSTRUCTIVE MATERIALS FOR CRANIO-FACIAL SURGERY.

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The reconstructive part of every cranio-facial intervention is usually more time consuming that the osteotomies. this is caused by the desired positioning of the mobilized cranio-facial unit, its fixation and retention and the bridging of the created defects.

The following fixation means are available:

* Suture materials (resorbable and non resorbable).
* Wire (steel and titanium).
* Miniplates, microplates, screws (made from titanium/vitallium).
* Intersceletal suspension.
* Fixateur extern (cranio-frame).

For reconstruction the following materials are available:

* Autologous bone
  - a) From cranio-maxillofacial area: calvarium, chin bone, mandibular bone
  - b) From distant areas: ribs, iliac bone, fibula, etc.
* Homologous tissues from tissue banks
  - a) Lyophilized bone from different sources
  - b) Lyophilized cartilage
  - c) Others
* Alloplastic materials (hydroxy apatite, glass ionomere, acrylic).
* Bone morphogenic proteins (BPM) in combination with special carrier systems.

Modern craniofacial surgery avoids the use of autologous tissues.

* It is time consuming to take autologous tissues.
* Very large amounts of autologous material are not always available.
* A 2nd or 3rd operation site can cause pain and complications.
* Autologous materials resorb and transform faster than homologous ones.

At the Department of Cranio-Maxillofacial Surgery in Zurich cranio-facial reconstruction is performed exclusively by the use of homologous, lyophilized, sterilized bones and cartilage combination with bone morphogenetic proteins.

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CRANIAL BASE SURGERY IN CHILDREN AND YOUNG ADULTS

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Pediatric cranial base surgery has evolved gradually. A coordinated interdisciplinary approach to the management of pediatric congenital, traumatic and neoplastic cranial base problems is essential. After thorough evaluation, the pediatric neurosurgeon, craniofacial/plastic surgeon, pediatric anesthesiologist and skilled nursing staff work together to complete effective urgent and elective craniofacial-cranial base procedures.

A perspective of historical landmarks, current treatment approaches and what we have yet to accomplish will be reviewed. Ongoing innovations into the prevention of disease, ideal staging and more effective operations through accurate diagnosis and technical advances should be expected.

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TREACHER COLLINS SYNDROME

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This autosomal dominant syndrome with varial expression bilaterally and affects the face. T clefting defects of the orbits, infraorbitally, later and through the zygomatic arches are accompan by severe malar hypoplasia, ear deformity a deafness, gross hypoplasia of the mandible w retrogenia, beaking of the nose and abnormalities the skin of the face and eyelids. In a third of cas it is accompanied by a cleft palate. Other anoma frequently occur.

Staged reconstruction is essential with initial airv management, treatment of the conductive hear loss followed by orbitozygomatic reconstructio the 5-8 year age period. This is followed by conv tional presurgical orthodontic treatment a orthognathic surgery between 14-15 years and fin by rhinoplasty from 16-19 years of age. Cranial b graft is ideal and planned reconstruction using cor CT scans is helpful. Soft tissue changes around orbits are difficult to correct. Lateral canthal rep tioning should be carried out when the orbit is. reconstruction with an osseo-integrated imp supported prosthesis and bone anchored hearing produces the best aesthetic and functional result