FLORIDA CRANIOFACIAL INSTITUTE

Case Study

Patient History

Craniosynostosis was suspected prenatally. Patient was born at 37 ½ weeks and was first seen by Dr. Ricalde at 2 weeks of age. Dr. Ricalde examined the patient and made the diagnoses of metopic craniosynostosis and moderate tongue-tie. Usually the diagnosis is made clinically, but occasionally a CT scan is performed.

The head shape was trigonocephalic - or triangular, characterized by a prominent ridge along the forehead. The lateral orbits were recessed, and there was mild hypotelorism. He also had global developmental delays, and an umbilical hernia.

Patient was referred to St. Joseph's Craniofacial Center, and scheduled for anterior cranial vault reconstructive surgery at 9 months of age.

Treatment

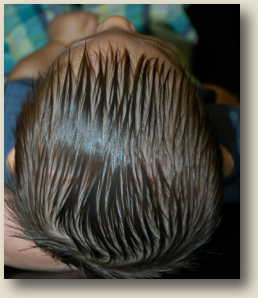
Cranial vault reconstructive surgery was performed when the infant reached 9 months of age. The frontal bone, supraorbital rims, lateral orbital rims, and bitemporal regions were reconstructed to allow more room for the brain, and to improve the abnormal morphology.

The surgery took less than 3 hours, and under the same anesthetic the umbilical hernia was repaired by the pediatric surgeon. Patient stayed in the hospital for 3 days, and was discharged home with Tylenol.

birds eye view of trigonocephaly

Outcome

The surgery and post-operative course were uneventful. All sutures were removed by post op week 2. All cranial defects were closed by post op month 3. The plates and screws that were used during surgery were resorbable, and were no longer palpable by post op month 6.



6 months after forehead reconstruction

Dr. Pat Ricalde is from Ann Arbor, Michigan. She completed her undergraduate training at Eastern Michigan University, then attended both dental and medical school at the University of Maryland in Baltimore.

She graduated magna cum laude and received numerous performance awards including the Academy of Dentistry for Persons with Disabilities Award, the American Association of Oral and Maxillofacial Surgeons Award and the Nathan David Gold Memorial Award. She was also inducted into the Gorgas Odontological Honor Society as well as the OKU Honorary Dental Society.

Dr. Ricalde continued her education in Oral and Maxillofacial Surgery at the prestigious University of Maryland and the UMD Shock Trauma Center, one of the best residency programs in the country. Her advanced training includes dentoalveolar surgery, dental implants, bone grafting, orthognathic surgery, head/neck pathology, craniofacial trauma, and reconstructive surgery.

She then completed a fellowship with Dr. Jeffrey C. Posnick, who is internationally renowned for the treatment of patients with cranial abnormalities. In addition to Board Certification, she is also the only Fellowship Certified Craniofacial Surgeon in the Tampa Bay area.

Dr. Ricalde is the author of numerous publications, and lectures both nationally and internationally on the subject of pediatric craniofacial anomalies. She is the lead investigator in research projects to improve surgical care for patients, and maintains academic affiliations with the Universities of South Florida and Maryland to educate future maxillofacial and craniofacial surgeons.

Dr. Ricalde has volunteered with many international non-profit organizations dedicated to providing surgical assistance to less fortunate patients with cleft lip/ palate anomalies. She is also the Founder and Director of the Cleft and Craniofacial Team at St. Joseph's Children's Hospital, and holds privileges at most area hospitals.

Visit www.floridacranio.com to learn more about Dr. Ricalde.

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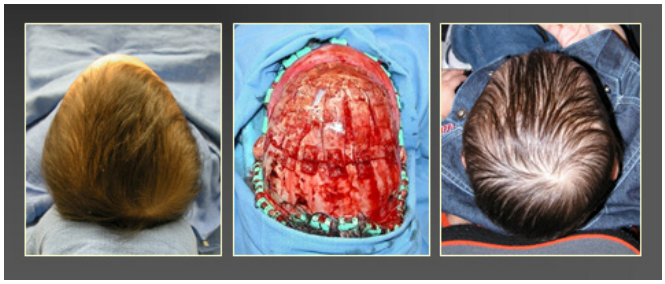
Case Study

Craniosynostosis

Craniosynostosis is a skull malformation where one or more bone plates have fused prematurely. It is easily confused with plagiocephaly due to deformational molding, which can occur when a baby sleeps in the same position repeatedly or due to torticollis. It is important to distinguish the diagnosis because optimal treatment occurs before the age of one. Patients with craniosynostosis (CSS) managed at FCI are carefully screened using clinical exams and anthropometric measurements, under a comprehensive team approach. Rarely, skull x-rays or a CT scan is required. We believe in the "image gently" campaign and strive to minimize radiation to our patients.[1] Current literature suggests that CT scans are not always necessary in the management of craniosynostosis.[2]

Dr. Ricalde begins by discussing all of the child's options with the parents or guardians to help them make an informed decision about treatment. The location and number of involved sutures, severity of the dysmorphology and other associated malformations are all taken into consideration when finalizing a treatment plan. Some patients may be candidates for minimally invasive surgery, and some may also be eligible for entrance into one of several ongoing clinical research trials. Typically, the treatment is coordinated with a pediatric neurosurgeon, to maximize the benefits, and minimize the risks associated with surgery. Throughout the process, the referring physician is kept informed on the child's progress.



Before, intraoperative, and after Cranial Vault Reconstruction

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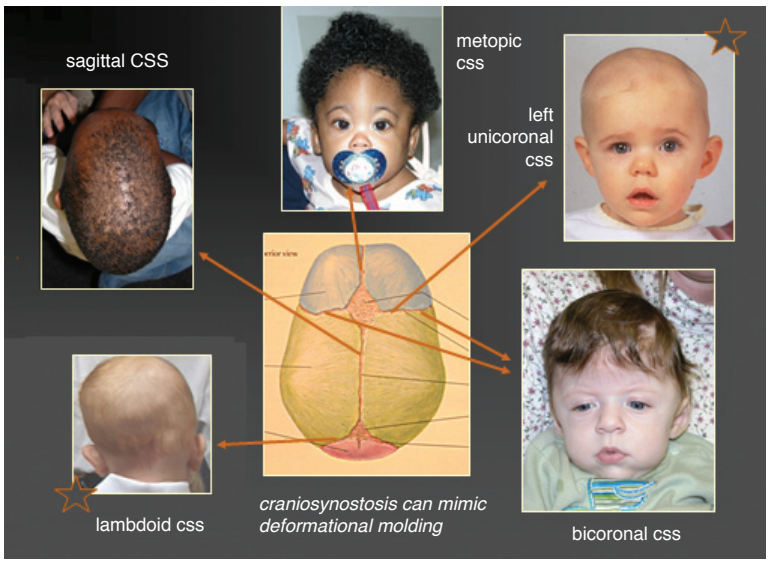
"Red Flags"

If you see this, it may be craniosynostosis:

- No "soft spot" (fontanelle) on the newborn's skull
- A raised hard ridge along a suture line
- Slow or no increase in the head size over time as the baby grows
- Displaced fontanelle off of midline
- Asymmetric orbits or forehead
- Vertical ear displacement
- Head shape does not improve as expected over first 4 months



Causes

Although most often kids with CSS are otherwise healthy and have no family history, genes may play a role. There are blood tests that can be performed to see if there is a mutation of EFNB1, FGFR1, FGFR2, FGFR3, TWIST, which are commonly involved in craniofacial syndromes like Apert, Crouzon, Carpenter, Pfeiffer and Chotzen Syndromes. Patients with CSS can have orbital problems, sleep apnea, and jaw growth problems, and are best managed in a team environment. That is why FCI has partnered with St. Joseph's Craniofacial Center to better serve our patients.

References

[1] Miglioretti, DL et al. The use of computed tomography in pediatrics and the associated radiation exposure and estimated cancer risk. JAMA Pediatr. 2013 Aug 1;167(8):700-7.

[2] Schweitzer, T et al. Avoiding CT scans in children with single-suture craniosynostosis. Childs Nerv Syst 2012 Jul; 28(7) 1077-82.