A Newsletter of the Division of Pediatric Plastic Surgery at Children's Hospital of Pittsburgh

Plastic Surgery Update

Children's Hospital of Pittsburgh

Winter 2006

Letter from the Division

This edition of *Pediatric Plastic Surgery Update* focuses on congenital ear anomalies.

Congenital ear anomalies can range from small irregularities of the external ear to complete microtia (absent ear) with associated hearing loss. These anomalies are a source of considerable distress for the parents of newborns. If they are allowed to persist into later childhood, they often are sources of subjective distress for patients themselves, who frequently suffer from peer ridicule.

Dr. Joseph E. Losee

Those of us in the Division of Pediatric Plastic Surgery at Children's Hospital of Pittsburgh are dedicated to caring for the range of congenital ear anomalies. Many of these troublesome anomalies can be treated nonsurgically in the neonatal period while circulating maternal hormones keep the infant's cartilage moldable. Ear molding is an exciting option for many patients born with congenital ear anomalies. For many other deformities, surgery is the recommended course of correction, and timing is important to the total care of the patient.

Dr. Lisa Vecchione

We encourage early consultation with Dr. Vecchione, our craniofacial orthodontist, who sees all newborns with ear anomalies and oversees our center's ear molding program. For many patients, an early protocol of ear molding may correct the deformity and forestall surgery later in life.

Please do not hesitate to contact us with any questions regarding congenital ear anomalies or any other concern.

Joseph E. Losee, MD, FACS, FAAP

Lisa Vecchione, DMD, MDS

News from the Cleft-Craniofacial Center

The Cleft-Craniofacial Center at Children's Hospital of Pittsburgh recently welcomed a number of new faces. Shao Jiang, MD, has joined the Division of Pediatric Plastic Surgery and will see new patients in the Cleft Clinic. He comes with specialty training including a craniofacial fellowship with our director, Joseph Losee, MD, as well as additional training in jaw surgery at Childrens Hospital Los Angeles. We also welcome Dawn Nicotra, MS, a genetic counselor from Children's Division of Medical Genetics, as well as Shannon Plowey, MA, CCC-SLP, and Sheryl Rosen, MA, CCC-SLP, speech pathologists from the Department of Audiology and Communication Disorders. Patricia K. Hoolahan, RN, joined our division in December 2005. She has more than 30 years' experience as a pediatric nurse. For the past 16 years, she has been instructing parents in the care of their high-risk infants. These skilled specialists will help us enhance our comprehensive clinical care for habilitation of children with cleft and craniofacial conditions.

About the Division of Pediatric Plastic Surgery

Clinical Staff

Joseph E. Losee, MD, FACS, FAAP
Frederic White-Brown Deleyiannis, MD
Shao Jiang, MD
W.P. Andrew Lee, MD, FACS
Kodi K. Azari, MD
Lisa Vecchione, DMD, MDS
Mary Ann Haralam, MSN, CNRP
Matthew D. Ford, MS, CCC-SLP
Patricia Hoolahan, RN
Jan Daniels, LPN

Availability

Dr. Losee sees patients in Oakland.

Dr. Jiang sees patients in Oakland and at Children's South (Bethel Park).

Dr. Deleyiannis sees patients in Oakland and at Children's North (Wexford).

Drs. Lee and Azari see patients in Oakland.

Surgery is scheduled in Oakland, at Children's North and at Children's South.

To reach the Division of Pediatric Plastic Surgery, call 412-692-8650.

Staff

Maureen McKay
Holly Schaupp
Robin Rice
Shawntell Tomcheck
Jeanne Mehalik
Jennifer Gross
Levirda Weeden
Kimberly Smith
John Gilmore

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Clinical Update

Ear Molding: The Nonsurgical Correction of Auricular Deformities in Newborns

Congenital deformation of one or both auricles in the newborn is a relatively frequent phenomenon that can have a negative impact on psychological and social development. The incidence of auricular deformities has been reported to be 11.5 per 10,000 live births. Although some deformities may resolve spontaneously, it is impossible to predict with any degree of certainty which ones will resolve. Surgical correction of these deformities after the ears have lost their plasticity may be expensive, uncomfortable, and yield unsatisfactory results. Nonsurgical correction of auricular deformities by splinting (ear molding) may be attempted in the neonatal period with excellent results, no discomfort and minimal expense. This conservative approach in the neonatal period has the potential to eliminate the need for future reconstructive surgery.

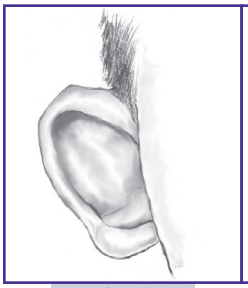

Fig. 1

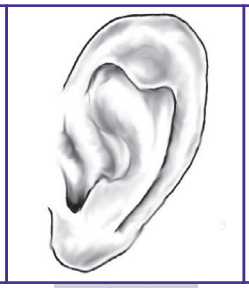

Fig. 2

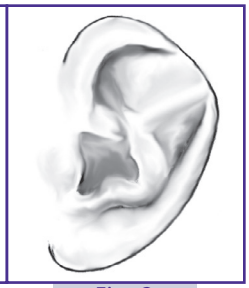

Fig. 3

The most common types of auricular deformities are microtia, lop ear, cryptotia, Stahl's ear and prominent ears. They may have a deformed helix, excess conchal cartilage, or lack an antihelix. Prominent ears (Fig. 1) may have an absent antihelical fold, obtuse scaphoconchal angle, increased distance from helical rim to scalp and deep conchal bowl. The clinical features of lop ear (Fig. 2) may include flattening of the antihelix, widening of concha and overhang of helix. Stahl's ear (Fig. 3) is characterized by the presence of a third crus, flat anthelix and malformed scaphoid fossa. Cryptotia is described as absence of the retroauricular sulcus, a sharply curved antihelical crus and no foreshortening of the auricle.

Neonatal auricular cartilage lacks elasticity. The moldability of auricular cartilage during the prenatal and neonatal periods is believed to be associated with the increased concentration of maternal estrogen. Estrogen increases the level of hyaluronic acid, which disrupts the intercellular material in cartilage. Estrogen relaxes the cartilage, ligaments and connective tissue of the fetus to pass through the birth canal. Ear molding takes advantage of this transient increase in estrogen. Researchers agree that, ideally, correction should be initiated within the first week of life. Early referral to a pediatric plastic surgeon and/or craniofacial orthodontist is critical. Maternal estrogen decreases within the first six weeks.

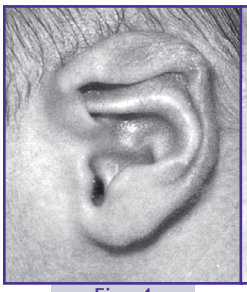

Fig. 4

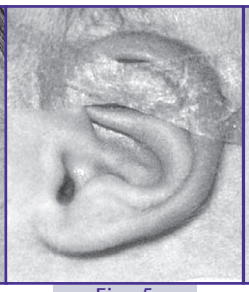

Fig. 5

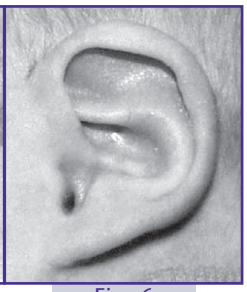

Fig. 6

Ear molding relies on early splinting for correction of congenital auricular deformities (Fig. 4). Over the past 25 years, splints or ear molds have been fabricated from dental impression materials including vinyl polysiloxane, gutta-percha, triad, or thermoplastic material. Surgical tape has been used to secure the splint, obtain the correct helical and antihelical shape, and to position the auricle closer to the scalp. The splint is worn 24 hours a day, with removal and cleaning during bath time (Fig. 5). The parents' compliance with taping instructions is vital to the success of the technique. The duration of splinting ranges from six to 12 weeks. Treatment is completed when the splint can be removed for several days without relapse (Fig. 6). Possible complications include skin irritation and ulceration.

"When we realized our child had a problem with his ears, we contacted Drs. Losee, Vecchione and Jiang in the Pediatric Plastic Surgery Clinic at Children's. They immediately made a diagnosis and came up with a conservative treatment plan involving early molding of our son's ears. We could not be happier with the outcome. By getting involved early, we saved Jacob a potential future operation. Our kid looks great! We hope other parents realize there is an option early on to fix those funny-looking ears — one that may not require surgery."

— Justin Sacks, MD, father of Jacob Sacks

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