

The genesis of a new form of pediatric plastic and reconstructive surgery is toppling one myth after another. Among them is the notion that “plastic” or “cosmetic” surgery is unnecessary.





In ancient India, newborn children were publicly examined for deformities. The unfortunate ones were abandoned or destroyed. In a multitude of ancient cultures, during an age when infanticide prevailed, examples such as this were quite common. Today, a much more practical approach is taken to treat children with congenital deformities. But such horror stories explain why the study of pediatric plastic and reconstructive surgery trailed behind other medical specialties.

Although the concept of applying this type of surgery to infants and children is a modern one, the wide variety of cosmetic and physiologic ailments that can be remedied by plastic and reconstructive surgery is astounding. Aside from numerous congenital deformities, children who suffer traumatic incidents, such as fire, abuse and automobile accidents, can benefit tremendously from plastic and reconstructive surgery. Correction of these ailments—both congenital and acquired—has advanced immensely over the past decade. Thanks to these advances, plastic and reconstructive surgery can now work wonders for deformed children. It goes beyond restoring functional capabilities and correcting an assortment of cosmetic deformities. It can nourish a child's self image.

The idea of rebuilding parts of a patient's body using his own skin, bones and tissue is impressive enough. Coupled with the fact that these reconstructions can actually grow and age with the patient, it becomes mind-boggling.

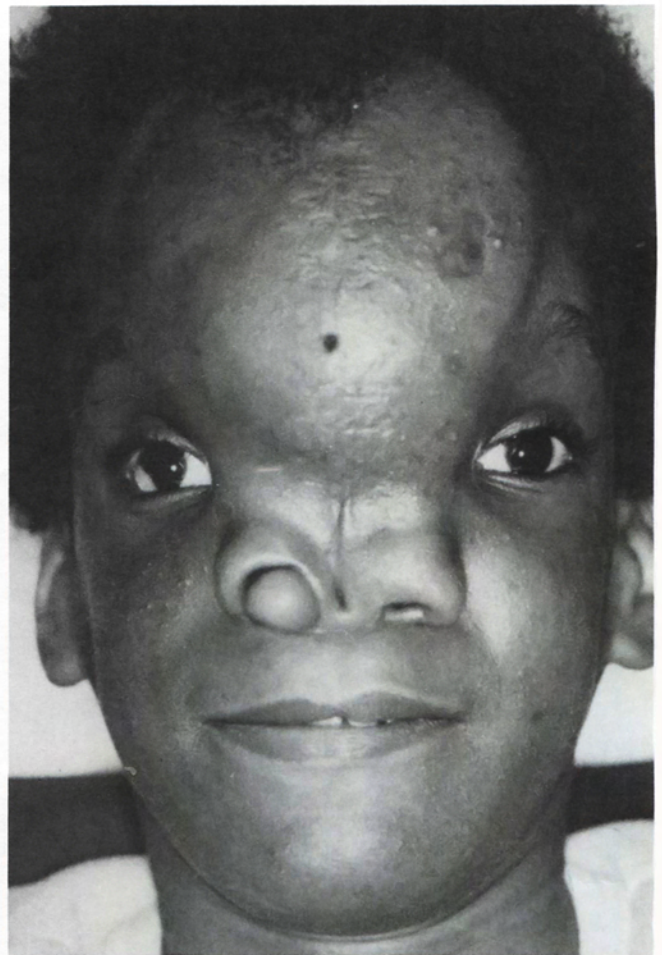
Despite increased interest in the topic of plastic and reconstructive surgery, misconceptions prevail. Some adults believe that actual plastic is somehow used. Others presume that a patient must be full grown to undergo this type of surgery. Another popular misconception is that basic medical insurance policies view pediatric plastic and reconstructive surgery as "elective" or "cosmetic" surgery and will not cover the necessary care. Finally, many otherwise well informed parents view plastic and reconstructive surgery as unnecessary, unless it alleviates or prevents an existing functional or medical malady. This is probably the saddest misconception of all.

Far too often, parents underestimate the importance of a child's positive self image. Fortunately, this myth is slowly being erased. "I think parents as a whole are becoming better attuned to the fact that cosmetic repairs are very essential to a child's self image and that they should be done very early in a child's life," explains Stephen Osofsky, M.D., Medical Director at Children's Hospital.

In our beauty-oriented society, a facial deformity can be a severe handicap, especially when coupled with developmental disabilities. A popular philosophy among plastic and reconstructive surgeons claims that a negative self image alone can be a child's downfall, causing a child to fall short of his or her total intellectual and social potential. These cosmetic considerations should not be placed second to medical or functional problems. However, some parents still lack the understanding and sensitivity to fully realize the consequence of a poor self image on social functioning.

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"That cosmetic surgery is not necessary is the greatest misunderstanding. Looks are so important," explains Michael Moses, M.D., a pediatric plastic surgeon at Children's Hospital. "Someone with a deformity starts off with a major handicap. What about a 16-year-old girl with a huge nose? She's very self conscious, but otherwise she's fine. She won't go out on dates because she thinks she's ugly. She's a tomboy who still wears loose T-shirts, gym shorts and tennis shoes. She won't wear makeup and won't get her hair done. Is that *just* an appearance problem? No, it's a functional problem. It is ruining her life."



The victim of a cleft forehead, Chantell Shannon spent the first eleven years of her life with a correctable deformity—and an avoidable learning disability. Read her story on page 8.

This controversy is best demonstrated when applied to the subspecialty of craniofacial surgery. Only about 12 years old in the United States, craniofacial surgery is a branch of plastic and reconstructive surgery that combines the techniques of reconstruction used by plastic surgeons with the surgical procedures used by neurosurgeons to correct congenital deformities of the face and skull.

In the 1970's, the father of craniofacial surgery, Paul Tessier, M.D., shocked the medical world when rumors spread about a French surgeon performing experimental surgery on congenital craniofacial deformities. Almost overnight, a new form of surgery was born. For the first time in the history of mankind, children with distorted faces and skulls were no longer doomed to a lifetime of deformity.

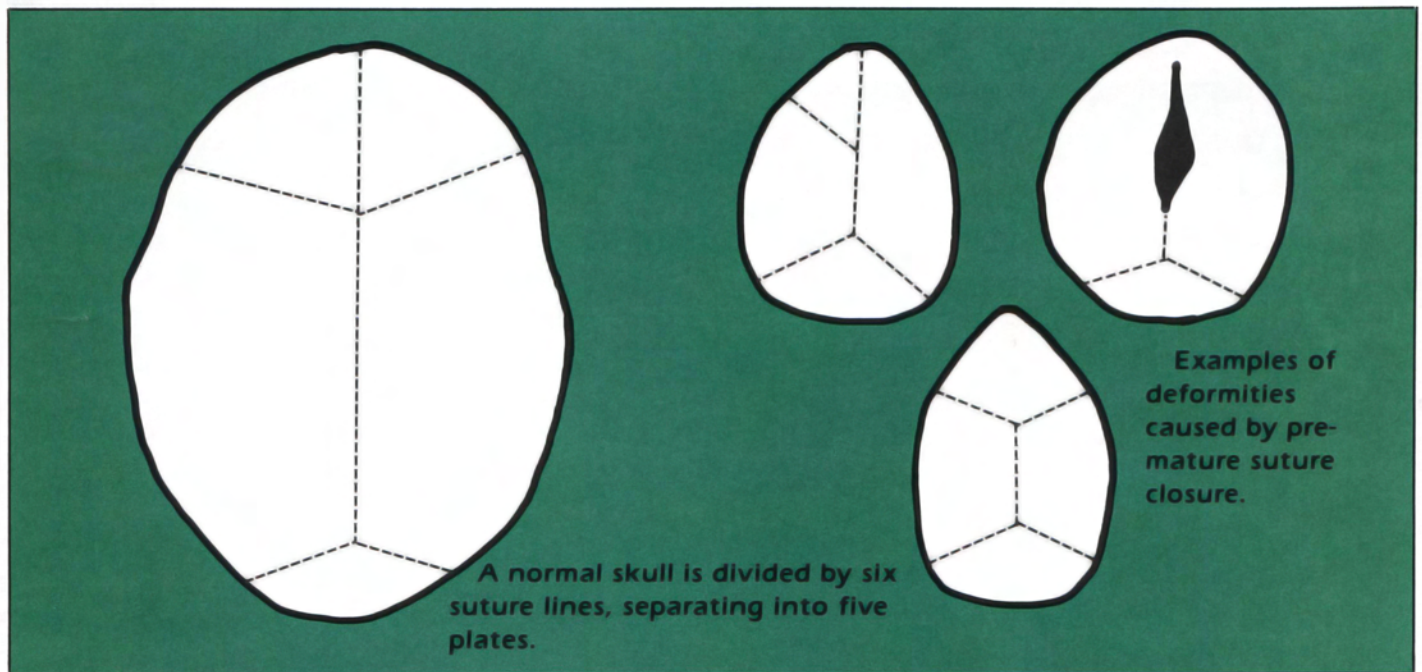
Craniofacial surgery is based on the premise that a patient's appearance and psychological well-being are as important as his or her ability to function. This new outlook eventually shattered at least one myth that surrounded facial deformities.

As recently as a few years ago, the theory that mental retardation automatically accompanies craniofacial deformities was widely accepted. Even today, some textbooks for medical students uphold this myth. It has since been confirmed that mental retardation is a symptom of craniofacial deformity. This occurs when the brain distorts the shape of the skull as it grows in the direction of the least resistance.

“The prime stimulus for the skull’s growth is the rapidly expanding brain. The bones that make up an infant’s skull are not tightly joined, making the skull especially

arrange the skull to accommodate its growth, thus preventing normal suture (closure) of the skull. In more acute and rare instances the pressure is severe enough to break the skull. It is this stress on the brain—and not the skull’s abnormal shape—that will cause retardation.

It is now believed that early craniofacial surgery, by releasing the brain to allow for normal growth, can prevent mental retardation. A child born 20 years ago with a craniofacial deformity was immediately diagnosed as mentally retarded and was institutionalized or hidden away from society. Many of these children had the po-



prepared for brain growth. Occasionally, bones of the skull will prematurely close, forcing the brain to grow in the direction where the bones have remained open,” explains Dr. Osofsky.

Usually, this condition will not influence a child’s intellect or personality. However, in serious cases, the pressure of the growing brain can be severe enough to cause imprints on the inside of the skull and can actually re-

tential for normal intelligence, but without the necessary surgery, retardation was inevitable.

Even when the growing brain *was* able to adjust to its physical limitations, despite a deformed skull, institutionalized children of normal intelligence also suffered from retardation—in this case caused solely by their lack of social stimulation. Thanks to modern craniofacial surgery, many children are no longer destined to retardation.

Although craniofacial surgery is becoming widely recognized as a specialty of its own, the craniofacial surgeon works in concert with many other specialists.

All craniofacial deformities are complex enough to demand a team of specialists, referred to as a craniofacial team. Facial clefts offer a fine example of this team approach in action here at Children's Hospital.

Facial clefts include not only the common cleft lip and palate, but can cover the entire face, sometimes causing the eyes, ears and brain to deviate from their normal positions. An unusual combination of secondary deformities is frequently coupled with this condition. A crooked nose, an improperly aligned jaw, crooked teeth, underdeveloped cheek bones, and middle ear problems are all possibilities, depending upon the location and severity of the cleft. Each of these can require one or a series of surgical procedures. But the complications do not end here.



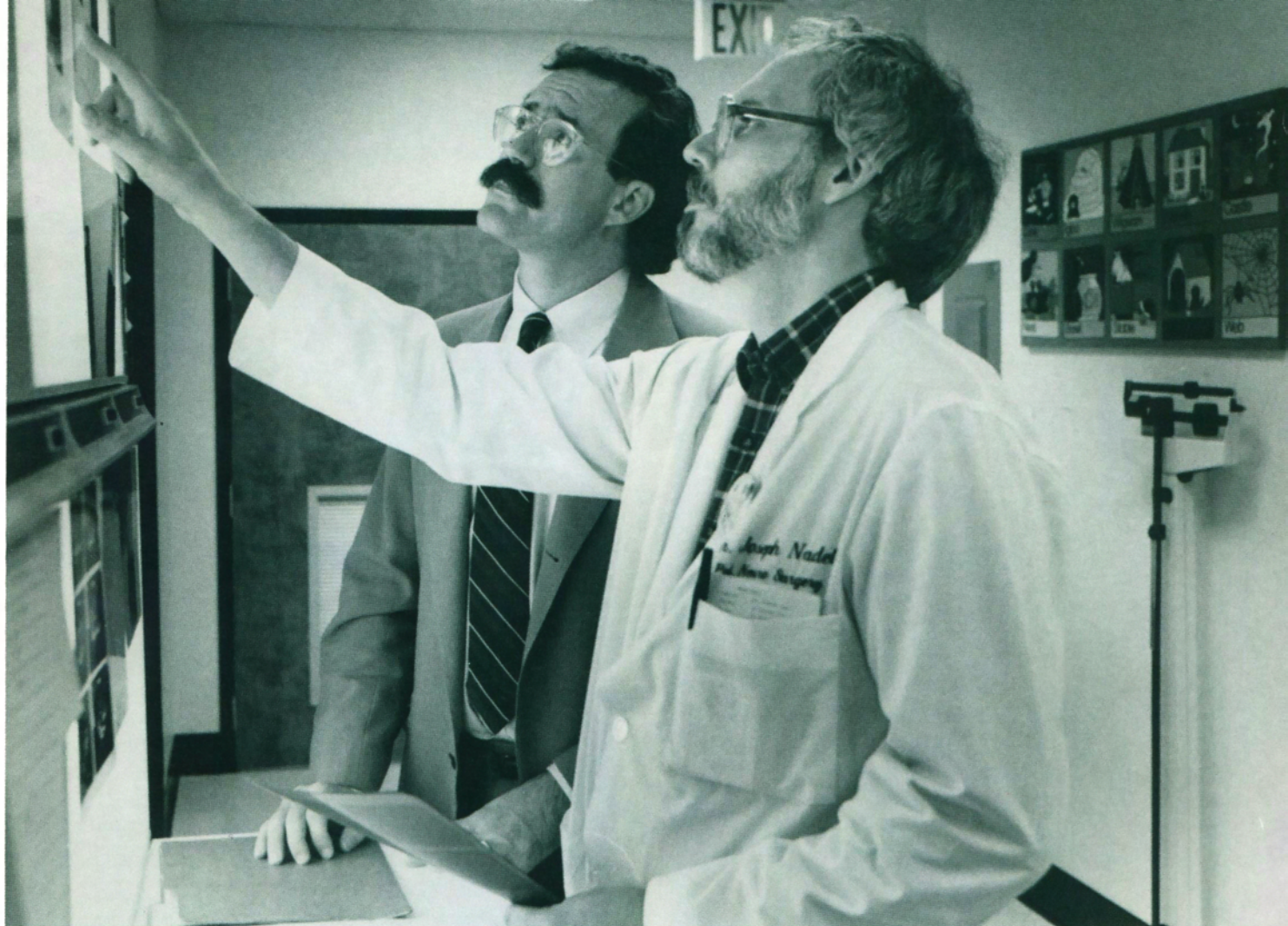
Joseph Pike was born with trigonocephaly, meaning triangular shaped head. Without surgery, Joseph would have suffered mental retardation, impeded brain growth, seizures and severe deformity. Read his story on page 9.

“Because of the many specialists that can be found at Children's Hospital, Children's is organizing one of the South's first craniofacial teams.”

Ear infections associated with this condition cause hearing loss, which is almost always accompanied by speech defects. When combined with additional speech defects caused by the cleft palate, the problem becomes twofold. Thus, children with facial clefts usually require the attention of an audiologist and a speech therapist.

Aside from the many therapists who help the parents and patient adjust to their dilemma, parents often request the help of a geneticist. The geneticist can answer questions such as: “If I have a deformed child, what are my chances of having another?” “Will my child pass the condition on to his offspring?” or “What problems will be associated with the deformity?”

Finally, another important member of the craniofacial team is the anesthesiologist. Due to the complexity of some craniofacial abnormalities, surgery for severe de-



Pediatric Plastic and Reconstructive Surgeon Michael Moses, M.D., and Pediatric Neurosurgeon Joseph Nadell, M.D., discuss X-rays of a craniofacial deformity.

formities can sometimes last in excess of 12 hours and can require two surgical teams. It takes a careful and experienced anesthesiologist to put a child to sleep for such long periods of time without anesthesia-related complications.

Because of the vast sphere of secondary anomalies encompassed by craniofacial deformities, the importance of a well structured craniofacial team cannot be underestimated. An ideal craniofacial team includes a plastic surgeon, a neurosurgeon, an orthodontist, an ophthalmologist, an otolaryngologist, an anesthesiologist, a geneticist, a speech therapist, an audiologist, psychologists and others. All of these pediatric specialists can be found at Children's Hospital.

"A true craniofacial team refers to a setup which exists in cities such as Philadelphia and Toronto, where a panel of physicians meets regularly to review cases and to make collective decisions on how the patient should be treated,"

explains Franklyn Elliott, M.D., a pediatric plastic surgeon and member of Children's craniofacial team.

Because all of these specialists can be found at Children's Hospital, Children's is organizing one of the South's first craniofacial teams. The leaders of this team are pediatric plastic surgeons Michael Moses, M.D., Philip Hendel, M.D., and Franklyn Elliott, M.D., and pediatric neurosurgeons Joseph Nadell, M.D., and Rick Miller, M.D.

"Children's Hospital is supporting the organizational efforts of doctors interested in this subspecialty. The craniofacial panel is organized to unify the subspecialties into a more coordinated effort to treat these very complex patients. The site for this team is naturally Children's Hospital, due to the ecumenical pediatric specialists that we find here," Dr. Elliott says. "At Children's, we are uniquely qualified to provide the full complement of the various needs of each one of these patients. This is not the case with any other hospital in the state."