

shaping a life

Endoscopic surgical technique used to successfully reconstruct baby's head

By Diane Yohe

When Gavin Moore was 2 months old, his mom, Kim, thought his head looked elongated. She believed it was because her obstetrician used vacuum extraction during Gavin's difficult birth. But at his 2-month checkup, Gavin's pediatrician was alarmed and referred him to Dr. Hal Meltzer, a Children's Hospital and Health Center neurosurgeon.

A CT scan confirmed what Meltzer suspected — Gavin had craniosynostosis. It is a relatively rare condition, one in 2,500 births worldwide, in which the open areas between bone plates in a child's skull — commonly called the soft spot — close prematurely. Premature closure causes abnormal head shapes, and sometimes increased intracranial pressure that could lead to brain damage.

In traditional surgery for craniosynostosis, surgeons make a cut from ear to ear to open the skull and then reassemble the bone plates, using metal plates and screws. Patients are hospitalized for up to a week and sometimes need blood transfusions following surgery.

"I was devastated when Gavin was diagnosed, but I did a ton of research on the internet and found out about the new endoscopic surgery that is less invasive," said Kim. "Dr. Meltzer told me Children's has craniofacial surgeons who specialize in the less-invasive surgery."

Meltzer and Dr. Steven Cohen, surgical director and chief of craniofacial surgery at Children's, met with Kim and Matt Moore to explain that Gavin was a candidate for the endoscopic procedure, but it must be performed before the baby is 6 months old for the best outcome.

Children's is one of only a handful of centers in the United States that uses an endoscopic, minimally invasive surgical approach to craniosynostosis. The technique permits

more definitive head shape changes and immediate reconstruction of the skull.

Surgeons make tiny incisions in the skull and use optic instruments called endoscopes to help them remove a wedge-shaped strip of bone. They then make a series of bone cuts that allow the skull to be reshaped at the time of surgery. Some children will need biodegradable devices placed inside the skull for bone stabilization. Following surgery, children wear a helmet for a few months to help fine tune the shape of the skull.

"It is important with the endoscopic approach to operate as early as possible, usually between 2 to 4 months of age," said Cohen. "Our group has produced comparable results to traditional surgery for craniosynostosis but with less blood loss, shorter operating times and earlier discharge from the hospital. Our technique also shortens the time a child needs helmet therapy."

In addition to craniosynostosis, the craniofacial team treats other complex congenital craniofacial and airway disorders. The multidisciplinary team consists of experts in genetics, craniofacial surgery, oculoplastic surgery, oral and maxillofacial surgery and pediatric neurosurgery.

Patients come to Children's from all over the United States and other countries to have craniofacial surgery. Meltzer credits the craniofacial team's international reputation for quality of care.

"I have a lot of pride in the team we've built here," said Meltzer. "We're able to offer children an extraordinary service with all the experts they will need in one center. Parents have confidence in us because we've performed a lot of these surgeries with successful outcomes."

Cohen believes some of their success is due to their continued partnership with several biotechnology companies in the area.

"We have a close relationship with UCSD and the

biotechnology and information technology community," said Cohen. "This has allowed us to develop new medical devices and surgical techniques that make us one of the leading craniofacial surgery centers in the world."

Gavin's surgery took place in February of this year. Before surgery, Gavin's head was abnormally long and narrow. After his two-hour surgery, Gavin's parents noticed an immediate change in his skull shape. Following the operation, Gavin experienced minimal swelling, little blood loss and had two very small incisions in his scalp that healed quickly. He spent only two nights in the

hospital. A week later he was fitted with a helmet, which he wore 23 hours a day for about three months.

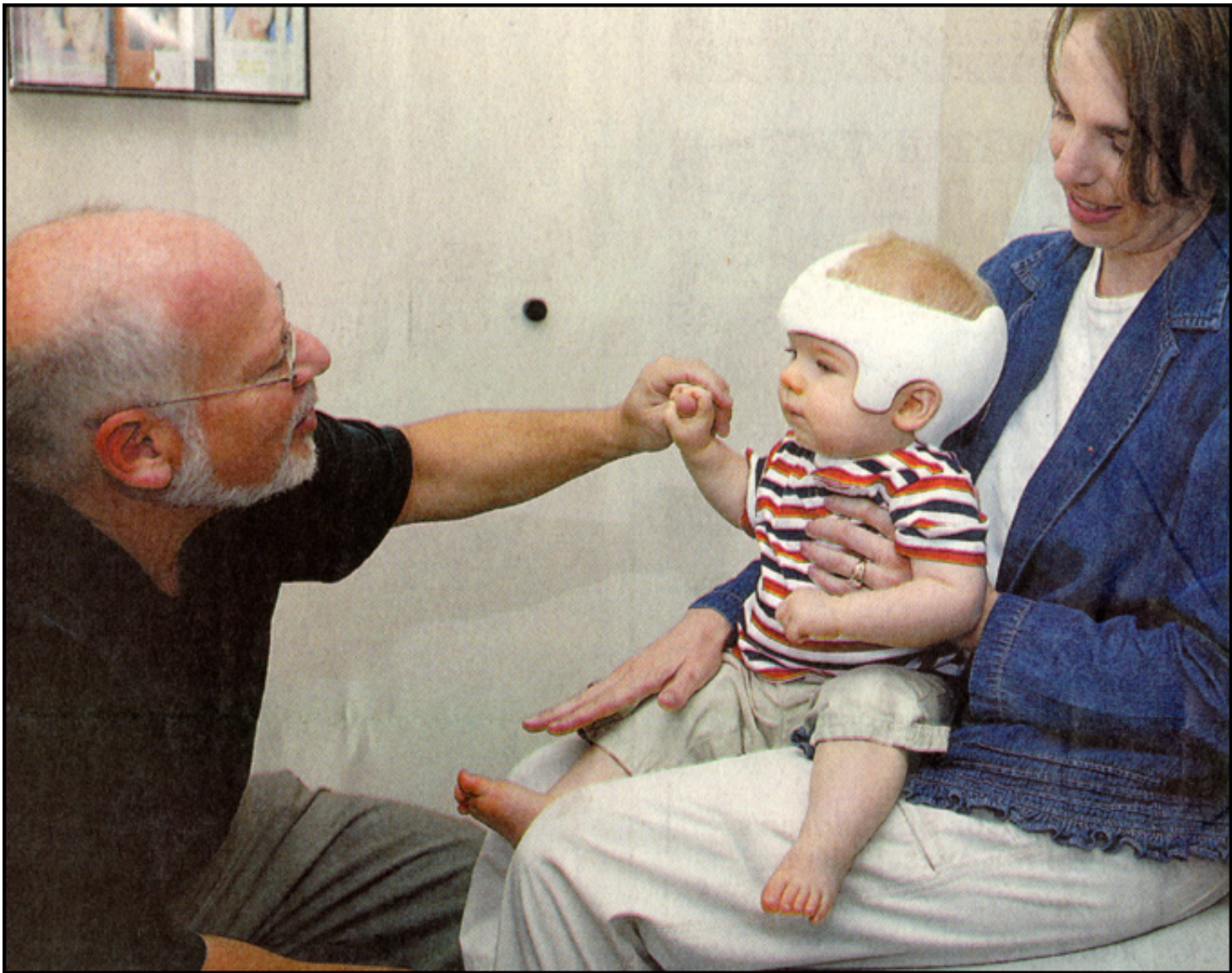
"Gavin has his helmet off now, and he looks great," said Kim. "I would recommend this surgery to any parent whose child qualifies for the endoscopic procedure — it's so much easier on your child."

Gavin will have to be checked every six months until he's 6 or 7 years old. But the operation hasn't slowed this active 1-year-old down. These days, he happily chases his dog, Kyler, around his Oceanside home.

— Diane Yohe is a San Diego-based writer



Like any active 1-year-old, Gavin Moore enjoys playtime.



Children's craniofacial surgeon Steven Cohen eyeballs a protective helmet on Gavin, who is seated in the lap of his mother, Kim. Gavin wore the device for nearly three months following surgery to reshape his head.