

Facial asymmetry persists despite surgery to correct congenital deformity

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Adults and teens that underwent surgery as infants to correct a congenital condition that causes the forehead and face to appear uneven still have a degree of facial asymmetry years later, according to new research led by a Hasbro Children's Hospital surgeon.

The study, published in the February issue of *Plastic and Reconstructive Surgery*, focused on unilateral coronal synostosis, a type of craniosynostosis, in which the bones of the skull on one side of the head fuse prematurely. Craniosynostosis, or early fusion of the cranial sutures, affects 1 in 2000 live births. During corrective surgery, known as fronto-orbital advancement, surgeons remove and reshape the bones of the forehead and upper eye sockets, replacing them in a more normal anatomic position. This is typically performed during infancy.

“Although there appears to be some lingering asymmetry years after many of these patients underwent corrective surgery, most patients and their families don't notice these differences, which do not appear to pose any significant health risks,” said lead author Albert Oh, M.D., director of the craniofacial surgery program at Hasbro Children's Hospital.

“Nevertheless, it's important that we understand more about this asymmetry, which could lead to improvements of the operation and further our knowledge regarding the cause of craniosynostosis.”

Oh, who's also an assistant professor in the department of surgery at The Warren Alpert Medical School of Brown University, led this research while at Children's Hospital Boston and Harvard Medical School.

In the study, Oh and colleagues used three-dimensional photo technology known as photogrammetry to digitally measure the faces of adult and adolescent patients with unilateral coronal synostosis who had undergone corrective surgery during infancy. They focused on different measurements comparing one side of the face to the other.

The researchers observed that average measurements on the side of the face affected by unilateral coronal synostosis were invariably shorter in comparison to the opposite side. They also found consistent rotation of the nose and facial midline away from the side of the fusion. Interestingly, the severity of long-term postoperative facial symmetry did not depend on either age at surgery or age at follow-up.

“While this study conclusively documented persistent postoperative facial asymmetry, our study group of 15 patients was relatively small. What is really needed is a long-term prospective study comparing preoperative and postoperative facial measurements,” said Oh.

Source: Lifespan

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