

INFORMATION FOR PARENTS INFORMATION FOR PARENTS

Deformational Plagiocephaly

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This pamphlet was written for parents of a child born with a head that appears flat. The term for this is deformational plagiocephaly. This brief presentation includes a description of this problem and an explanation of its causes and treatment. A glossary of medical terms is appended. This pamphlet is intended as an aid, not a substitute, for discussion between parents and medical specialists. Parents are encouraged to ask all their questions and to be certain they receive understandable answers from members of the craniofacial team.

Introduction

The term "plagiocephaly" refers to a child's head that is flat or asymmetric. Deformational plagiocephaly is the most common type. This term means that the baby's head is flat because there was a pressure on the developing head (cranium) in the uterus. In some infants the facial bones are involved. If deformational plagiocephaly is more obvious on the front, it is called deformational frontal plagiocephaly (DFP). When it involves the back of the head, it is called deformational posterior plagiocephaly (DPP). Often both the front and the back of the head are flat, but on opposite sides. For example, if the baby has right DFP, there can be left DPP.

Clinical Features

The characteristics of deformational frontal plagiocephaly (DFP) are: one side of the forehead is flat, sometimes the cheek and lower jaw are smaller, the ear is more posteriorly positioned, and the eyelid opening looks smaller. These characteristics are found on the same side as the flattened forehead. About two-thirds of infants with DFP have a tilt of the head towards the shoulder on the affected side—this is called torticollis. The nose is straight.

The characteristics of deformational posterior plagiocephaly (DPP) are: back of the head is flat on one side, the ear on this side is more forward, and there is often minor flattening of the forehead on the opposite side.

Usually the diagnosis of deformational plagiocephaly is made by physical examination. Sometimes radiographs (x-rays) of cranium are needed to confirm the diagnosis; rarely is a CT scan necessary. Radiographs are requested if there is a question whether another condition is causing flattening of the cranium. We are looking

for premature closure of a cranial suture (craniosynostosis), involving the forehead and rarely the back of the head. This abnormal suture fusion is called synostotic plagiocephaly. Proper diagnosis is critical because synostotic plagiocephaly causes a permanent, often progressive, abnormally-shaped cranium. AB operation is required to release the bones. In contrast, deformational plagiocephaly is usually self-correcting and an operation is not needed.

Causes

The incidence of deformational plagiocephaly ranges from between 5% to 48% of otherwise healthy newborns. The cause is believed to be a compressive intra-uterine force against the soft, developing bones of the baby's head. Early descent of the baby into the pelvis can also be a factor in deformational plagiocephaly. Curiously, in over two-thirds of all infants with deformational plagiocephaly, there is DFP of the left forehead and DPP of the right back of the cranium. This may be explained by the fact that left occipital anterior (LOA) is the most common position for the baby in the birth canal.

Deformational plagiocephaly can be associated with other deformational anomalies, e.g. club foot, protruding ears, dislocation of one hip at birth, and scoliosis (curvature of the spine). All of these conditions will have been, or can be, diagnosed by your pediatrician.

In the past, DFP was commonly seen; parents were told to place newborns on the tummy to sleep. IN 1992 the American Pediatric Association (APA) began a "back to sleep" campaign—parents were told to place babies on their backs to minimize the chances of SIDS (Sudden Infant Death Syndrome). The remarkable increase in the number of infants with DPP is likely a result of this recommendation.

Treatment

Infants with deformational plagiocephaly, whether DFP or DPP, prefer to sleep on the flat side of their head. This is called the "position of comfort". The first, and perhaps most important, treatment is to position the infant so the flat area of the head is off the mattress. This means propping the infant in a posture opposite of the "position of comfort". Parents should also change the position of toys, the television set, and the crib itself.

A baby with DPP should not sleep on the flat side of the back of the head. The child can be on either side of the head and after 4 months of age, or when the infant can comfortably lift and turn his/her head, it is safe to place the baby on the stomach during naps. The parents' efforts to keep the baby off the flat back of the head will be less successful after age 4 months when the baby can turn to any position—always preferring to lie on the flat area.

Physical therapy is indicated for an infant with torticollis. Usually only one visit with the therapist is needed for parents to learn the special exercises that stretch the baby's tight neck muscle. Operative correction of torticollis is rarely indicated.

For minor-to-moderate cases of deformational plagiocephaly, the only recommended treatment is positioning the baby so he/she will not lie on the flattened area of the head. In some cases, physical therapy is needed to correct torticollis. For moderate-to-severe cases, helmeting therapy is recommended. A custom-made helmet is worn as often as possible, but at all times while the baby is sleeping. The helmet works by applying gentle pressure to the bulging area of the head and allowing room for outward expansion of the flattened area.

Positioning, physical therapy, and helmeting (if necessary) continue for the first year of the child's life. The cranium grows rapidly during this period and these measures will provide the best chance for complete correction of deformational plagiocephaly.

Glossary

- *cranial suture:*
junction or joint between bony plates of the head; only the sutures between the forehead bones close (about 2 years); the remainder close slowly over many years
- *deformational plagiocephaly:*
flattening of the head due to pressure, or a force, applied to the soft cranium when the baby is in the uterus
- *occipital:*
referring to the back part of the head (occiput)
- *synostotic plagiocephaly:*
flattening of the head due to premature closure of a cranial suture; in the forehead it is called "unilateral coronal synostosis" and in the back it is called "lambdoid synostosis"
- *torticollis:*
a twisted neck; a "wry neck"; a tilting of the head to one side associated with shortening of the neck muscle

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DRAWING

A view of the top of the baby's head shows right deformational posterior plagiocephaly (DPP) with left deformational frontal plagiocephaly (DFP).

