Six months: Fibrous union of suture lines and interlocking of serrated edges

Eighteen months: Anterior fontanel closed

After 12 years: Sutures unable to be separated by increased ICP

Solid union of all sutures is not completed until late childhood. Craniostenosis, closure of a suture before the expected time, inhibits the perpendicular growth. Because normal increase in brain volume requires expansion, the skull is forced to grow in a direction *parallel* to the fused suture. This alteration in skull growth always produces a distortion of the head shape when the underlying brain growth is normal. A small head with closed and normal shape is a result of deficient brain growth; the suture closure is secondary to this brain growth failure. Failure of brain growth is not secondary to suture closure.

Various types of cranial deformities are encountered in early infancy. These include an enlarged head with frontal protrusion (**bossing**; characteristic of hydrocephalus), parietal bossing that is seen in chronic subdural hematoma, a small head, and a variety of skull deformities. Some occur during prenatal development; in others, head circumference is usually within normal limits at birth, and the deviation from normal development becomes apparent with advancing age.

Prognosis

The majority of infants with craniostenosis have normal brain development. The exceptions are those with genetic disorders that involve brain pathologic conditions.

Nursing Care Management

Nursing care of families in which there is a child with a cranial defect involves identifying children with deformities and referring them for evaluation. Because no therapy is available for children with microcephaly, nursing care is directed toward helping parents adjust to caring for a child with brain damage (see Chapter 18).

Infants who benefit from surgery require special emphasis on