

shoulder dystocia or a difficult vertex or breech delivery of infants who are large for gestational age. **Crepitus** (the coarse crackling sensation produced by the rubbing together of fractured bone fragments) may be felt or heard on examination. A palpable, spongy mass, representing localized edema and hematoma, may also be a sign of a fractured clavicle. The infant may be reluctant to move the arm on the affected side, and the Moro reflex may be asymmetric. Radiographs usually reveal a complete fracture with overriding of the fragments.

Fractures of **long bones**, such as the femur or the humerus, are sometimes difficult to detect by radiographic examination in infants. Although osteogenesis imperfecta is a rare finding, a newborn infant with a fracture should be assessed for other evidence of this congenital disorder.

Fractures of the neonatal skull are uncommon. The bones, which are less mineralized and more compressible than bones in older infants and children, are separated by membranous seams that allow sufficient alteration in the head contour so that it adjusts to the birth canal during delivery. Skull fractures usually follow a prolonged, difficult delivery or forceps extraction. Most fractures are linear, but some may be visible as depressed indentations that compress or decompress like a ping-pong ball. Management of depressed skull fractures is controversial; many resolve without intervention. Nonsurgical elevation of the indentation using a hand breast pump or vacuum extractor has been reported ([Mangurten and Puppala, 2011](#)). Surgery may be required in the presence of bone fragments or signs of significant blood clots (intracranial pressure [ICP]) ([Hill, 2012](#)). A similar finding in neonates is **craniotables**, which is usually benign or may be associated with prematurity or hydrocephalus ([Johnson, 2015](#)). In this condition, the cranial bone(s) move freely on palpation and may easily compress.

Nursing Alert

A newborn with a fractured clavicle may have no symptoms, but suspect a fracture if an infant has limited use of the affected arm, malpositioning of the arm, asymmetric Moro reflex, or focal swelling or tenderness or if he or she cries in pain when the arm is moved.