scalp blood for acid–base assessment. Obstetric birth techniques can cause injury. Forceps birth, vacuum extraction, version and extraction, and cesarean birth are potential contributory factors. Often more than one factor is present, and multiple predisposing factors may be related to a single maternal condition.

Soft Tissue Injury

Various types of soft tissue injury may be sustained during the process of birth, primarily in the form of bruises or abrasions secondary to dystocia. Soft tissue injury usually occurs when there is some degree of disproportion between the presenting part and the maternal pelvis (**cephalopelvic disproportion**). The use of forceps to facilitate a difficult vertex delivery may produce bruising or abrasion on the sides of the neonate's face. Petechiae or ecchymoses may be observed on the presenting part after a breech or brow delivery. After a difficult or precipitous delivery, the sudden release of pressure on the head can produce scleral hemorrhages or generalized petechiae over the face and head. Petechiae and ecchymoses may also appear on the head, neck, and face of an infant born with a nuchal cord, giving the infant's face a cyanotic appearance. A well-defined circle of petechiae and ecchymoses or abrasions may also be seen on the occipital region of the newborn's head when a vacuum suction cup is applied during delivery. Rarely, lacerations occur during cesarean section.

These traumatic lesions generally fade spontaneously within a few days without treatment. However, petechiae may be a manifestation of an underlying bleeding disorder or a systemic illness (such as an infection) and should be further evaluated as to their origin. Nursing care is primarily directed toward assessing the injury and providing an explanation and reassurance to the parents.

Head Trauma

Trauma to the head and scalp that occurs during the birth process is usually benign but occasionally results in more serious injury. The injuries that produce serious trauma, such as intracranial hemorrhage and subdural hematoma, are discussed in relation to neurologic disorders in the newborn (see Table 8-9). Skull fractures