

external auditory canal with 10 ml of ice water for approximately 20 seconds, which normally causes conjugate movement of the eyes toward the side of stimulation. This response is lost when the pontine centers are impaired, thus providing important information in assessment of the comatose patient.

Nursing Alert

The ice water caloric test is painful and is never performed on a child who is awake or on an individual with a ruptured tympanic membrane.

Funduscopy examination: Reveals additional clues. Papilledema will not be evident early in the course of unconsciousness because if it develops, it will not be evident for 24 to 48 hours. Papilledema is characterized by optic disc swelling, indistinct optic disc margins, hemorrhage, tortuosity of vessels, and absence of venous pulsations. The presence of preretinal (subhyaloid) hemorrhages in children is almost invariably a result of acute trauma with intracranial bleeding, usually subarachnoid or subdural hemorrhage.

Motor Function

Observation of spontaneous activity, gait, and response to painful stimuli provides clues to the location and extent of cerebral dysfunction. Asymmetric movements of the limbs or absence of movement suggests paralysis. In hemiplegia, the affected limb lies in external rotation and falls uncontrollably when lifted and allowed to drop. Observations should be described rather than labeled.

In the deeper comatose states, the child has little or no spontaneous movement, and the musculature tends to be flaccid. There is considerable variability in the motor behavior in lesser degrees of coma. For example, the child may be relatively immobile or restless and hyperkinetic; muscle tone may be increased or decreased. Tremors, twitching, and spasms of muscles are common observations. The patient may display purposeless movements. Combative or negativistic behavior is common. Hyperactivity is more common in acute febrile and toxic states than in cases of