

Poor fine motor control Weakness Hyporeflexia or hyperreflexia Positive Babinski sign Spasticity Paralysis	
Behavioral Changes	
Irritability Decreased appetite Failure to thrive Fatigue (frequent naps) Lethargy Coma Bizarre behavior (e.g., staring, automatic movements)	Observe behavior regularly. Compare observations with parental reports of normal behavioral patterns. Monitor growth and food intake. Monitor activity and sleep.
Cranial Nerve Neuropathy	
Cranial nerve involvement varied according to tumor location Most common signs: • Head tilt • Visual defects (e.g., nystagmus, diplopia, strabismus, episodic “graying out” of vision, visual field defect)	Assess cranial nerves, especially VII (facial), IX (glossopharyngeal), X (vagus), V (trigeminal, sensory roots), and VI (abducens) (see Chapter 4). Assess visual acuity, binocularity, and peripheral vision (see Chapter 4).
Vital Sign Disturbances	
Decreased pulse and respiration Increased blood pressure Decreased pulse pressure Hypothermia or hyperthermia	Measure vital signs frequently. Monitor pulse and respirations for 1 full min. Record pulse pressure (difference between systolic and diastolic blood pressure).
Other Signs	
Seizures Cranial enlargement* Tense, bulging fontanel at rest* Nuchal rigidity Papilledema (edema of optic nerve)	Record seizure activity (see Chapter 27). Measure head circumference daily (infant and young child). Perform funduscopic examination if skilled in procedure.

*Present only in infants and young children.

Diagnostic Evaluation

Diagnosis of a brain tumor is based on presenting clinical signs and diagnostic imaging. Because the signs and symptoms may be vague and easily overlooked, early diagnosis necessitates a high index of suspicion during history taking. A number of tests may be employed in the neurologic evaluation (see [Table 27-1](#)), but the gold standard diagnostic procedure is MRI, which permits early diagnosis of brain tumors and assessment of tumor growth during or after treatment. Diffusion-weighted imaging, spectroscopy, and perfusion imaging are other MRI tools used to investigate and diagnose tumor types ([Fleming and Chi, 2012](#)). The CT scan permits direct visualization of the brain parenchyma, ventricles, and