



Figure 34-1. Axial magnetic resonance imaging from a 3-day-old with a perinatal stroke. Arrows demonstrate Wallerian changes (from left to right) in the white matter tracts of the descending corticospinal tracts in the pons, midbrain, posterior limb of the internal capsule, and in the splenium of the corpus callosum.

Childhood Stroke

There is also a high burden of neurological sequelae in childhood AIS. Up to 50% to 85% of survivors have permanent deficits including motor, language, cognitive, and social problems. Outcomes range from minor dysfunction that does not affect daily living to deficits that impair normal independent functioning. One study estimated that 40% of children with AIS have “good” recovery and 60% have “poor” recovery defined by whether the impairments affect daily function. Children are most commonly affected by hemiparesis and motor deficits (50% to 70%), and at least half have cognitive and behavioral difficulties. More than a third of children have language and speech deficits. It is important to recognize that mild deficits may not affect daily function or quality of life (QOL).

Outcome after childhood AIS can be predicted by Pediatric National Institutes of Health Stroke Scale (PedNIHSS) score. This score assesses clinical stroke severity in the acute setting and ranges from 0 (least severe) to 42 (most severe). The PedNIHSS score is predictive of neurological outcome gauged by the validated Pediatric Stroke Outcome Measure (PSOM) at 3 months and at 1 year after the stroke. Even when the PedNIHSS is not performed at presentation, the neurological examination documented by a neurologist can be used to create the score retrospectively. If that is not possible, it is reasonable to let parents know that clinically less-severe strokes are more likely to have better clinical recovery than more severe ones that have worse initial deficits. Decreased consciousness at presentation has also been associated with worse outcome. Radiological features that have been associated with poorer neurological prognosis include bilateral brain ischemia and arteriopathy. Larger infarction volume has been associated with worse neurological outcome in 2 studies, and one of these studies found a trend toward worse outcome with hemorrhagic transformation of the infarction.

Seizures and Epilepsy

In addition to neurological deficits, the presence of seizures and epilepsy and the need for ongoing treatment with antiseizure medications can affect the QOL and function of children after AIS. While more than 20% of children and 85% to 95% of newborns with AIS present with seizures at stroke onset, less is known about the need for anticonvulsant therapy in the recovery period and the development of remote seizures and epilepsy over time. However, some estimates of the prevalence of epilepsy after stroke are 15% to 25% (see Question 35).