Birth-related Traumatic Intracranial Injuries

Type of Traumatic Hemorrhage	Location	Clinical Presentation/Diagnosis	Accompanying injuries	Course/ Complications	Treatment
Epidural Hemorrhage	Between dura and periosteum	If large, can present with bulging fontanel or suture separation; history of difficult delivery with instrumentation, CT diagnostic	Linear skull fracture	Usually small; if large, can present with bulging fontanel or suture separation	Usually observation is sufficient, occasionally evacuation may be necessary
Subdural Hemorrhage	Into the subdural space, typically at parieto-occipital convexity, suboccipital or interhemispheric. May passively extend infratentorially	If small, irritability; moderate-sized may present with signs of raised intracranial pressure and episodic staring; if large, nuchal rigidity, dilated pupils, respiratory failure and cardiac arrest. CT diagnostic	Cerebral contusions	Usually uncomplicated; no compression of infratentorial structures	Usually observation is sufficient
Subarachnoid	Into the subarachnoid space	Seizures, hypotonia, irritability, somnolence, focal neurological symptoms	Intraparenchymal hemorrhage/ other extracranial hemorrhages	Usually uncomplicated, occasionally result in adhesions	None necessary
Cerebellar Contusion	Cerebellar parenchyma		Occipital osteodiastasis		Serial lumbar punctures; furosemide/ acetazolamide administration
Cerebral Contusion	Cerebral parenchyma	Seizures	Extracranial hemorrhages, skull fractures (occasionally occur in context of an existing AVM or coagulopathy)	Cysts and porencephalic cavities can form-spastic diplegia may result	No specific therapy
Ischemic Stroke	Internal carotid artery vascular territory	Horner's syndrome, cranial nerve palsies, seizures, hemiparesis	Skull fractures	Varies according to distribution/ manifestation of injury	Varies according to distribution/ manifestation of injury