complications.

Intracranial Pressure Monitoring

Management of the child with increased ICP is a complex and important task. ICP monitoring is used to guide therapy to reduce ICP and provides information on intracranial compliance, cerebrovascular status, and cerebral perfusion (Sankhyan, Vykunta Raju, Sharma, et al, 2010). Indications for inserting an ICP monitor are as follows (Singhi and Tiwari, 2009):

- GCS evaluation of ≤8
- GCS evaluation >8 with respiratory assistance
- Deterioration of condition
- Subjective judgment regarding clinical appearance and response

Four major types of ICP monitors are:

1. Intraventricular catheter with fibroscopic sensors attached to a monitoring system

2. Subarachnoid bolt (Richmond screw)

3. Epidural sensor

4. Anterior fontanel pressure monitor

Direct ventricular pressure measurement remains the standard of ICP monitoring (Walker, Stone, Jacobson, et al, 2012). The catheter method involves introduction of a catheter into the lateral ventricle on the nondominant side, if known, or placement in the subdural space. The catheter has the advantage of providing a means of extraventricular (or continuous) drainage of CSF to reduce pressure. A drainage bag attached to the system is kept at the level of the ventricles and can be lowered to decrease ICP (see Critical Thinking Case Study box). This device requires full penetration of the brain, requires skill and experience with placement, and carries the risk of infection.

Critical Thinking Case Study