

Posterior fossa tumour surgery fact sheet
Sydney Children's Hospital
Randwick

We understand these are very difficult times for you and your child. Absorbing all the information given to you by the team of doctors and nurses, is difficult.

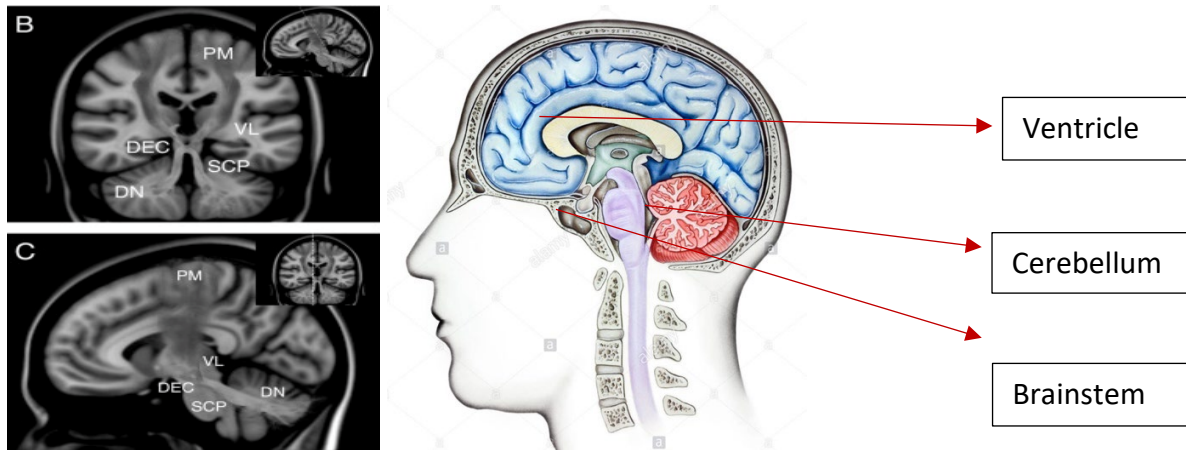
The information below is prepared to familiarise you with upcoming surgery and potential risks, complications, post-operative recovery and expectations after surgery.

Your child has been diagnosed with a tumour in the posterior fossa. This is the most common location for brain tumours in children. The tumour in this location can arise from different structures that are within this compartment. These include the cerebellum, the brainstem, and the nerves controlling many functions such as eye movements, the face, hearing, and swallowing.

While majority of children recover without any significant issues, complications are seen depending on the size, location and the type of the tumour. The growth of the tumour itself can also have already led to some complications such as obstruction of cerebrospinal fluid (CSF) circulation causing hydrocephalus, or other neurological issues that led to the presentation and diagnosis.

Where is the Posterior fossa:

Posterior fossa is a small compartment located in the back of the skull cavity which contains the cerebellum and the brainstem. Cerebellum is situated underneath the cerebral hemispheres or the large part of the brain. Brainstem is another complex part of the brain that essentially connects the brain to the spinal cord and contains many connections between the cerebellum and the rest of the brain. The brainstem also controls consciousness.



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Surgery in the posterior fossa:

While paediatric neurosurgeons commonly perform surgery in this region, complications can occur due to complexity of this region and eloquent structures that are often already severely distorted and compressed by the actual tumour as well as potential problems that obstruction of the CSF drainage or hydrocephalus can produce.

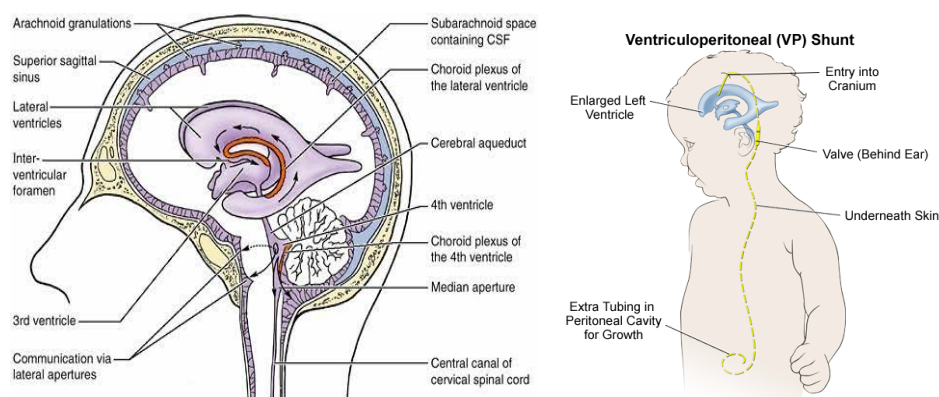
Possible complications of posterior fossa tumour surgery include the following:

- Lower cranial nerve dysfunction:
 - This could mean problems with swallowing, voice, head and neck or tongue movement,)
- Facial nerve palsy:
 - Weakness of face muscles also called facial droop. This could cause
- Deafness
- Hemiplegia or paralysis of arm and leg on one side
- Hemiparesis or weakness of arm and leg on one side
- Sensory abnormalities, e.g., numbness on the face or body
- Infection (meningitis)
- Prolonged coma
- Chest infection
- Cerebrospinal fluid leak
- Abnormalities of eye movements or double vision
- Cerebellar mutism syndrome (see below)

CSF circulation problems and shunt:

We often insert a small tube into the normal cavities of the brain (the ventricle) to release pressure. This tube often can be removed after a few days but occasionally (about 20% of patients) there is long term need for this tube that will be converted to a shunt. A shunt is a permanent tube that goes from the brain ventricle to the abdominal cavity to drain the excess brain fluid.

Obstruction of the normal flow of the brain fluid or problems with absorption of brain fluid can lead to build of the brain fluid within the brain and need for diversion of the fluid into another compartment in the body such the abdomen.



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Posterior fossa syndrome or cerebellar mutism:

- This is reported between 5-20% of children after posterior fossa surgery.
- It can have a spectrum of severity, but more severe forms happen much less frequently.
- The cause is not clear, but factors such as location of the tumour and the size are important risk factors.
- PFS may not be apparent immediately after surgery and start to develop within 2-8 days after surgery.

Common Symptoms of Posterior Fossa Syndrome:

- Loss of speech or mutism. Inability to talk or produce sounds.
- Lack of muscle control or coordination (ataxia). Difficulty controlling posture, sitting and standing balance.
- Abnormal eye movements
- Emotional lability, irritability, or behavioural changes
- Trouble swallowing
- Muscle weakness or low muscle tone
- Temporary loss of voluntary movements
- Dysarthria (shaky voice or slurred speech)
- Cognitive problems, e.g., memory difficulties

Recovery from posterior fossa syndrome:

- Posterior fossa syndrome is very unpredictable. Recovery looks different for each patient, and each symptom can have a different time course. Although other families can be a source of help and encouragement, it is important to avoid setting expectations based on another patient's journey.
- The duration for recovery can vary from a few days to few months
- While many of symptoms and signs seen in posterior fossa syndrome can resolve or improve with time, more severe forms children can have permanent neurological problem.

Treatment for children with posterior fossa syndrome:

The main treatment is supportive care and rehabilitation. There is extensive support available at Sydney Children's Hospital to provide maximal care and rehabilitation for children with PFS and their families. These are provided by:

- Physical Therapy and Occupational Therapy
- Speech therapy
- Cognitive Assessment and Rehabilitation
- Psychology and Behavioural therapist
- School Support and Accommodations, and social work support
- Clinical Nutrition