Pathophysiology, Clinical Features and Associated Pathology in the Posterior Fossa Anomalies:

Chiari type I malformation
-Pathophysiology
Cerebellar tonsils displaced into cervical spinal canal, small posterior fossa
-Clinical features
Usually presents in late teens or adult years; wide variety of neurologic symptoms caused by the upper cervical canal compression
-Associated Pathology
Syringomyelia, syringobulbia, scoliosis, skeletal anomalies

Chiari type II malformation
-Pathophysiology
Cerebellar vermis and brain stem displaced into cervical spinal canal
-Clinical features
Presents at birth or early infancy; lower brain stem and cranial nerves dysfunction; could be medical emergency
-Associated Pathology
Myelomeningocele and other lumbosacral neural tube closure defects, hydrocephalus, syringomyelia

Chiari type III malformation (very rare)
-Pathophysiology
Cerebellum displaced into large occipital encephalocele
-Clinical featuresRespiratory and swallowing disorders, cranial nerves deficits, dystonias; often fatal
-Associated Pathology
Corpus callosum agenesis, tentorium dysplasia, midbrain deformities

Dandy-Walker malformation
-Pathophysiology
Cyst-like dilation of the fourth ventricle, enlarged posterior fossa, hypoplasia and anterior rotation of cerebellar vermis
-Clinical features Very heterogeneous in presentation, depending on associated pathology; ataxia, brain stem dysfunction, mental retardation (varies), hydrocephalus;
-Associated Pathology
Corpus callosum agenesis, brain stem anomalies, hydrocephalus

Jourbet's syndrome (extremely rare)
-Pathophysiology
Cerebellar vermis aplasia
-Clinical features
Motor hypotonia, ataxia, behavioral delay
-Associated Pathology
Occipital meningocele, scoliosis, hydrocephalus, hepatic fibrosis

Cerebellar disruptions (very rare)
-Pathophysiology
Cerebellar tissue loss
-Clinical features
Motor deficits, mental retardation, often early death

Pontocerebellar hypoplasia (very rare)
-Pathophysiology
Pontine hypoplasia, cerebellar hypoplasia
-Clinical features
Severe developmental disorders, seizures, often early death

Rhombencephalosynapsis (extremely rare)
-Pathophysiology
Cerebellar hemispheres fusion, vermis agenesis, fusion of dentate nuclei and superior cerebellar peduncles
-Clinical features
Variable presentation; mental retardation, epilepsy, spasticity common
-Associated Pathology
Hydrocephalus, ventriculomegaly