Pilocytic Astrocytoma

Pilocytic astrocytoma is a type of astrocytoma that is distinguished from infiltrating astrocytomas like glioblastoma multiforme by their pathologic appearance and relatively benign behavior. These tumors occur more often in children and young adults, and are often located in the posterior fossa like the cerebellum. They tend to be very slow growing and are often cystic in nature. If solid, it is usually well circumscribed and rarely infiltrative. Because the tumors arise from astrocytes, they stain positive for GFAP. On histologic examination, Rosenthal fibers can be visualized, which are thick, eosinophilic corkscrew fibers. These fibers are thought to be bunched intermediate filament proteins that are found in astrocytic processes. Because the tumors are slow growing and well circumscribed, they can be treated with resection and have a good prognosis.



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Occurs Most Commonly in Kids
Kid astronaut
These tumors occur more often in children and young adults, typically in the first 20 years of life.

Posterior Fossa
Post-terrier faucet
This tumor is typically found in the posterior fossa, which is located between the foramen magnum and tentorium cerebella. This region contains the brainstem and the cerebellum.

Cerebellum
Silver-cerebellum-bell
The cerebellum is the most common location of pilocytic astrocytomas.

Well Circumscribed
Well Circumscribed Helmet
These tumors tend to be slow growing and well circumscribed with very little infiltration into surrounding structures.

GFAP
Glitter-FAT-guy
Glial fibrillary acidic protein is an intermediate filament protein expressed by certain cell types of the CNS including astrocytes and ependymal cells. Because they stain for astrocytes, pilocytic astrocytomas stain positive for GFAP, which can help with tumor identification.

Rosenthal Fibers
Rose-tail
On histologic examination, Rosenthal fibers can be visualized, which are thick, eosinophilic corkscrew fibers. These fibers are thought to be bunched intermediate filament proteins that are found in astrocytic processes.

Eosinophilic Corkscrew Fibers
Eosinophilia-eagle with corkscrew
On histologic examination, Rosenthal fibers can be visualized, which are thick, eosinophilic corkscrew fibers. These fibers are thought to be bunched intermediate filament proteins that are found in astrocytic processes.

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