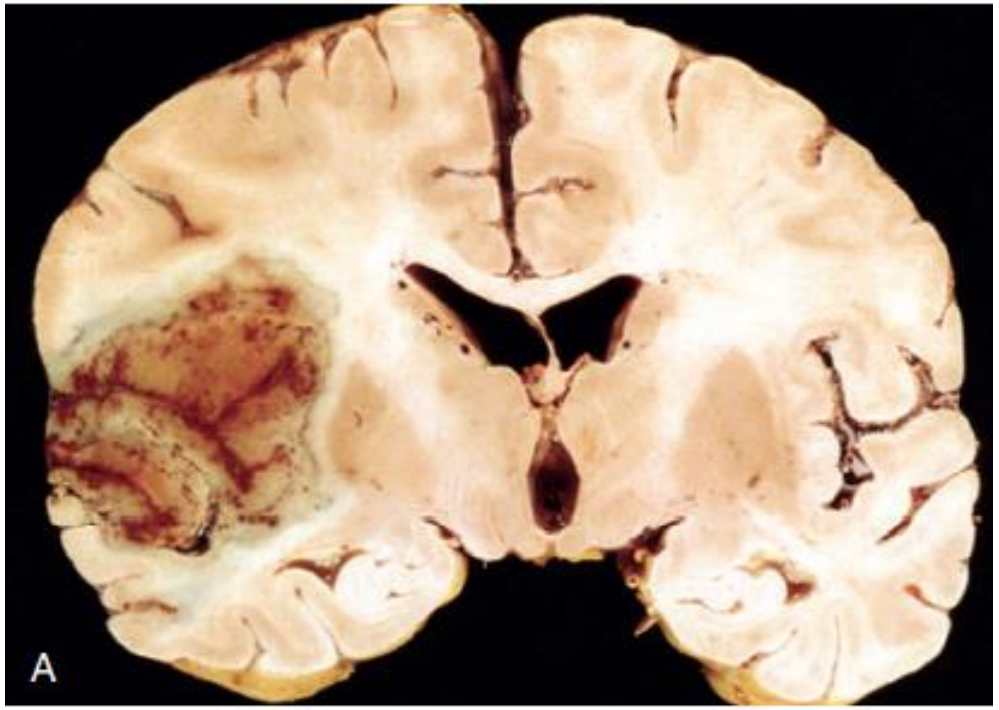
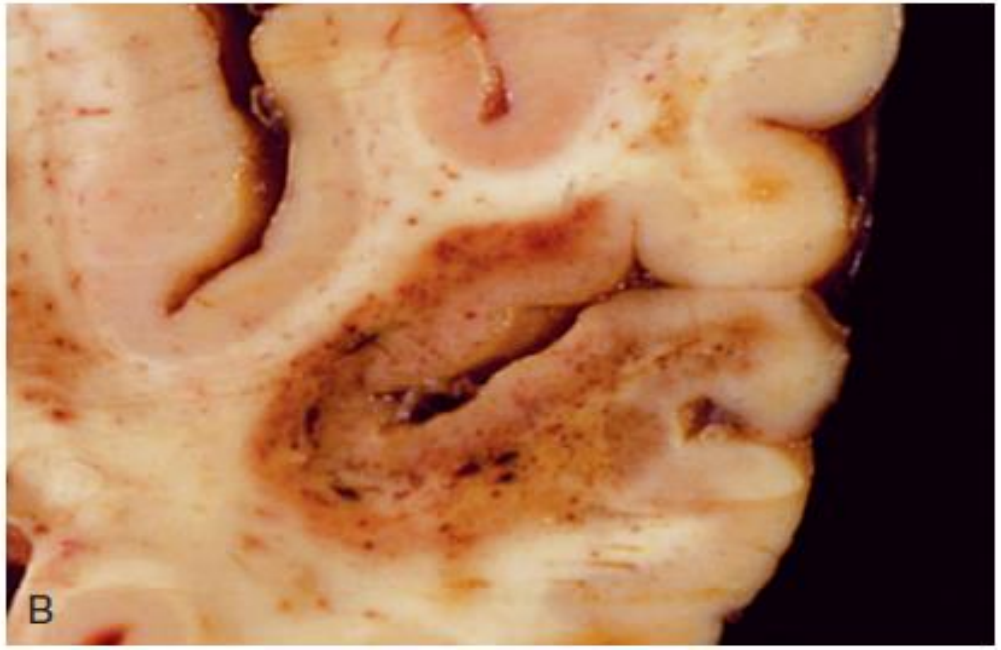
CNS lab

Dr. Sura Al Rawabdeh

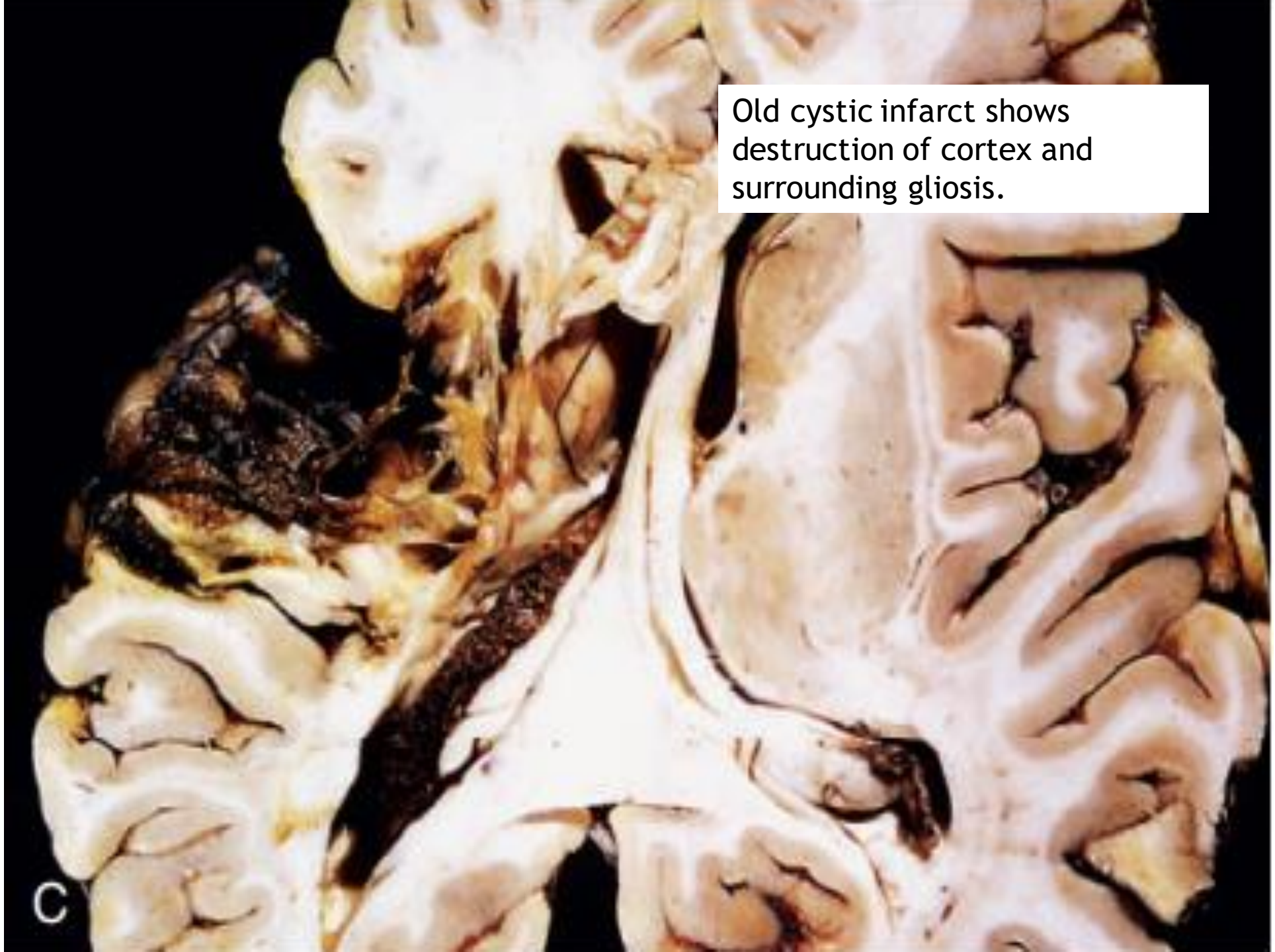
27-12-2023



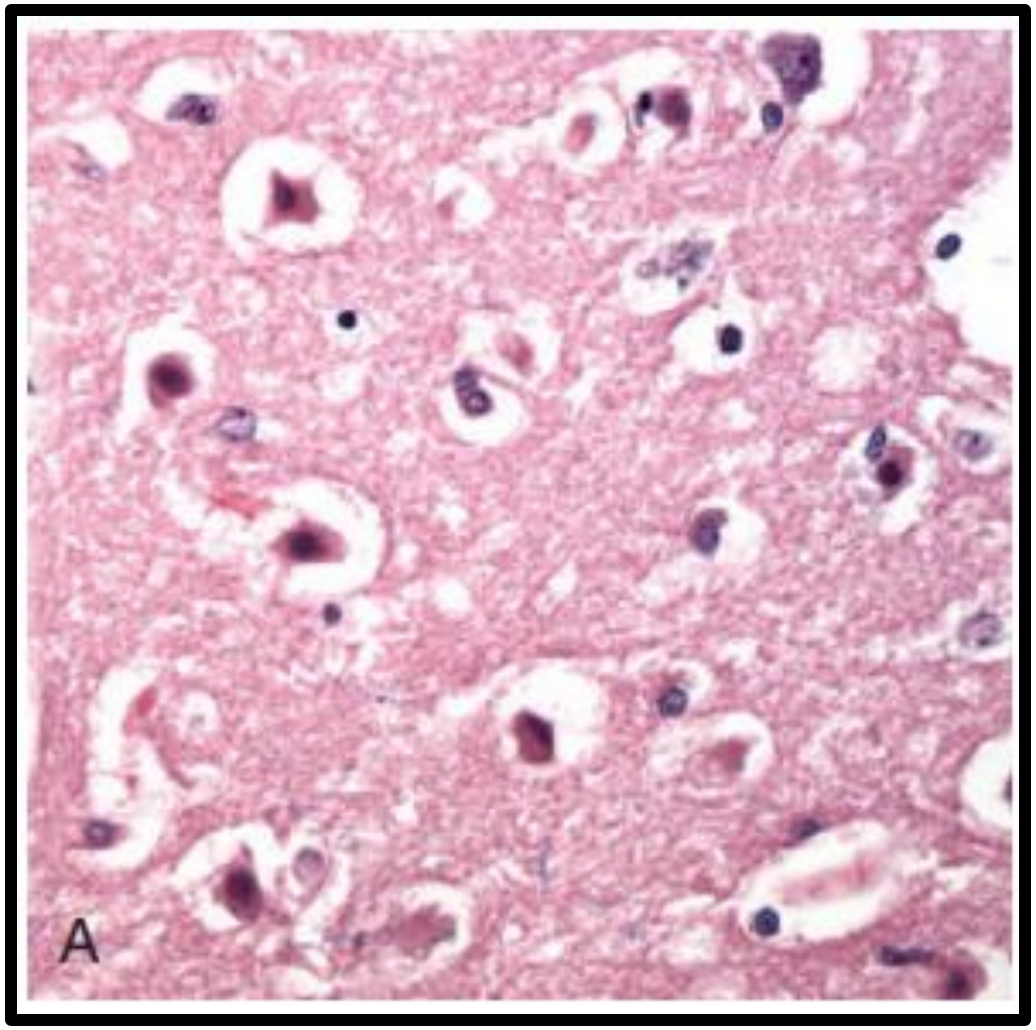
(A) Section of the brain showing a large,discolored, focally hemorrhagic region in the left middle cerebral artery distribution (hemorrhagic, or red, infarction).

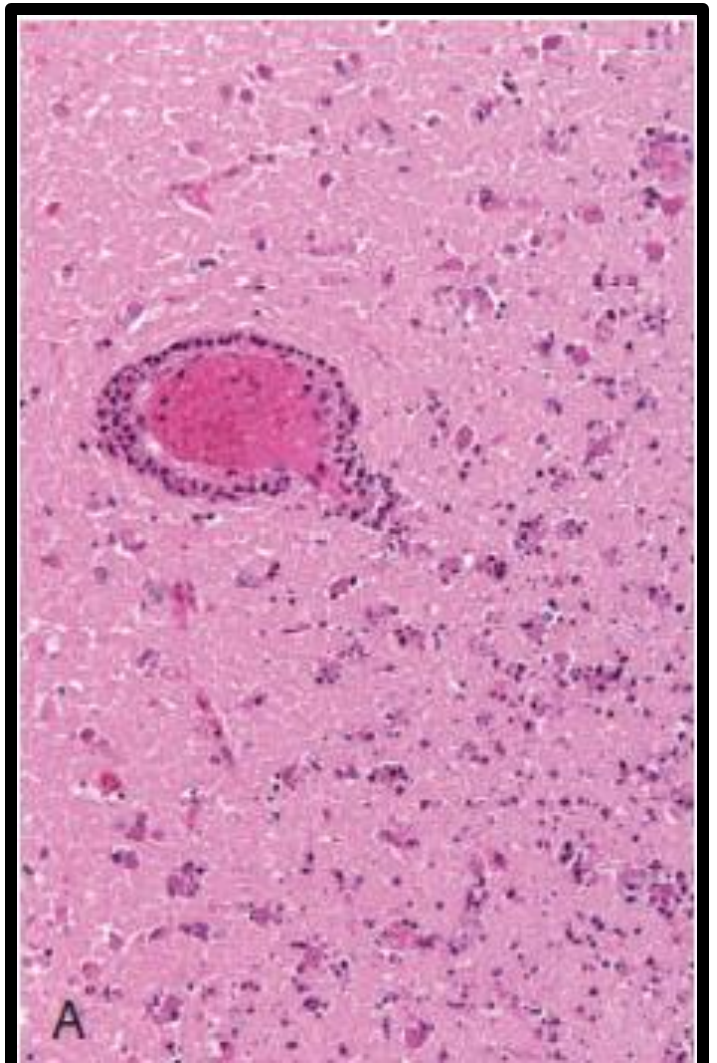


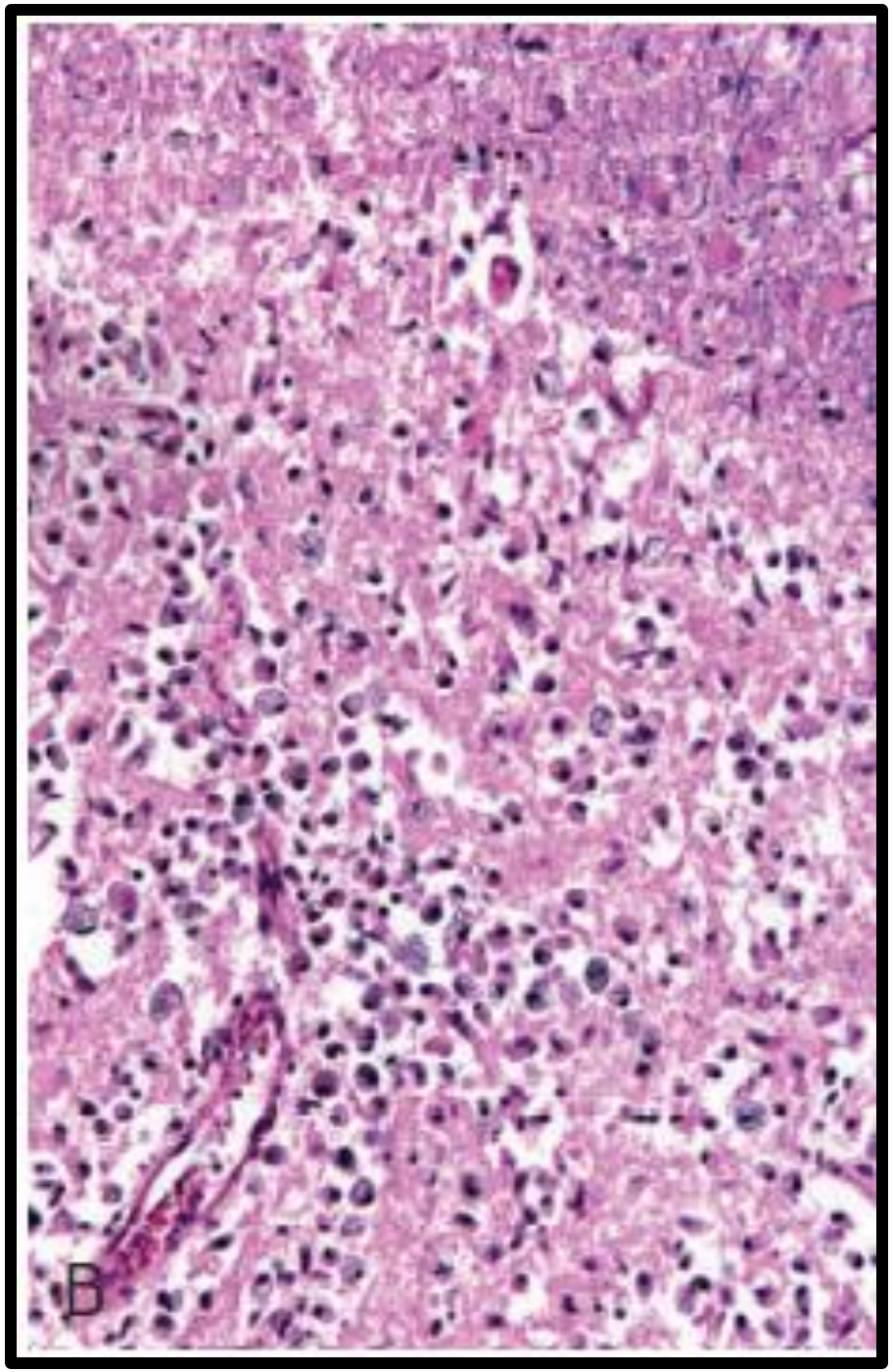
(B) An infarct with punctate hemorrhages, consistent with ischemia-reperfusion injury, is present in the temporal lobe. (



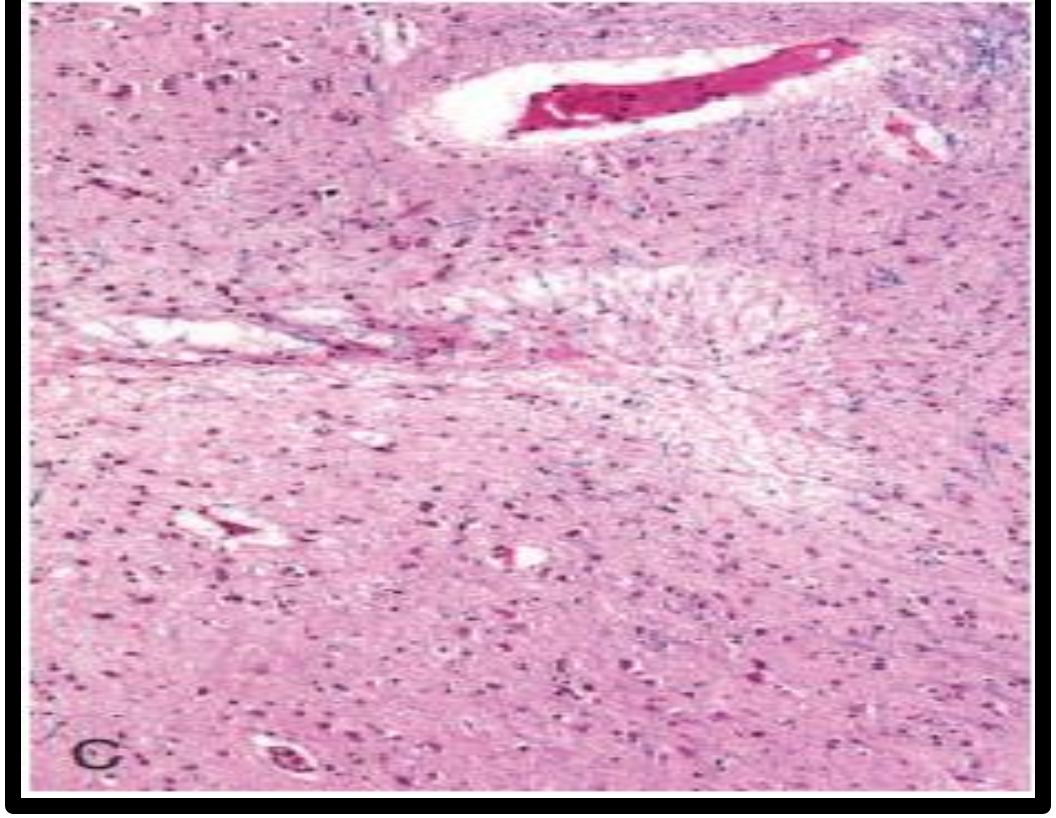
Old cystic infarct shows destruction of cortex and surrounding gliosis.


A


A



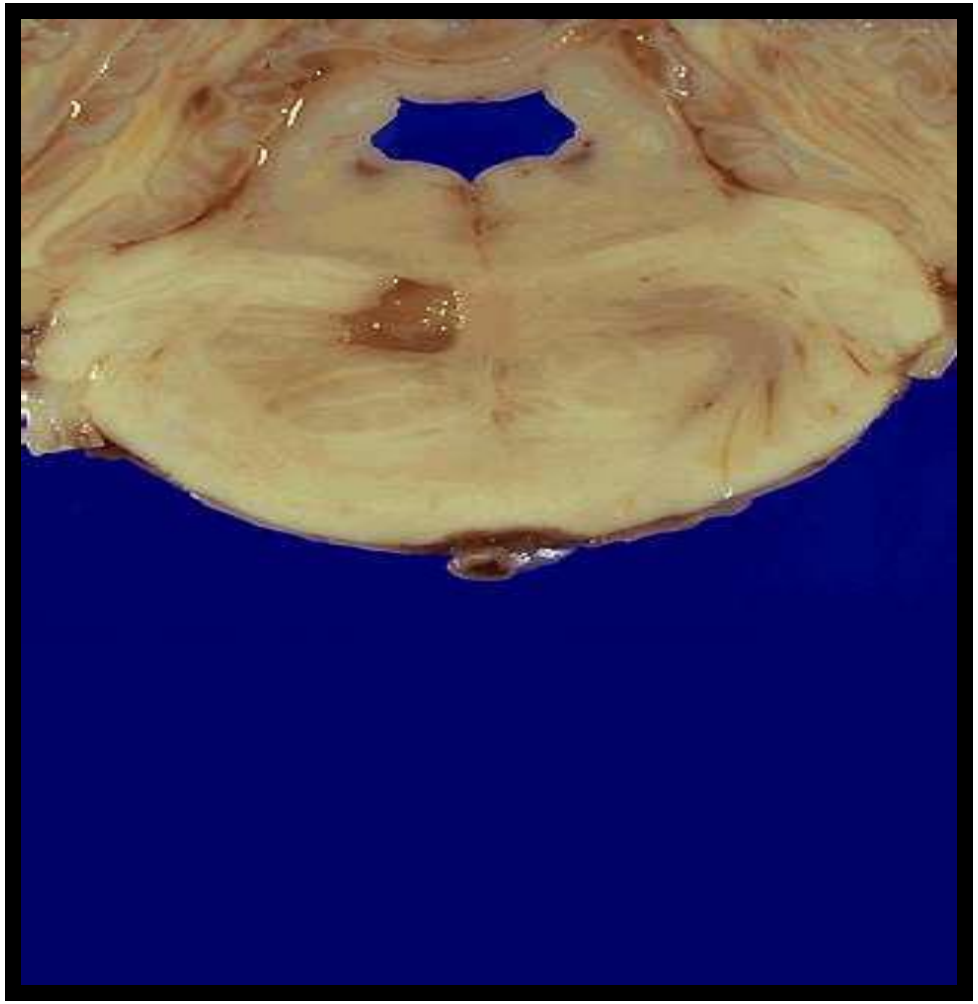
Subacute changes, occurring at 24 hours to 2 weeks, include necrosis of tissue, influx of macrophages, vascular proliferation, and reactive gliosis).

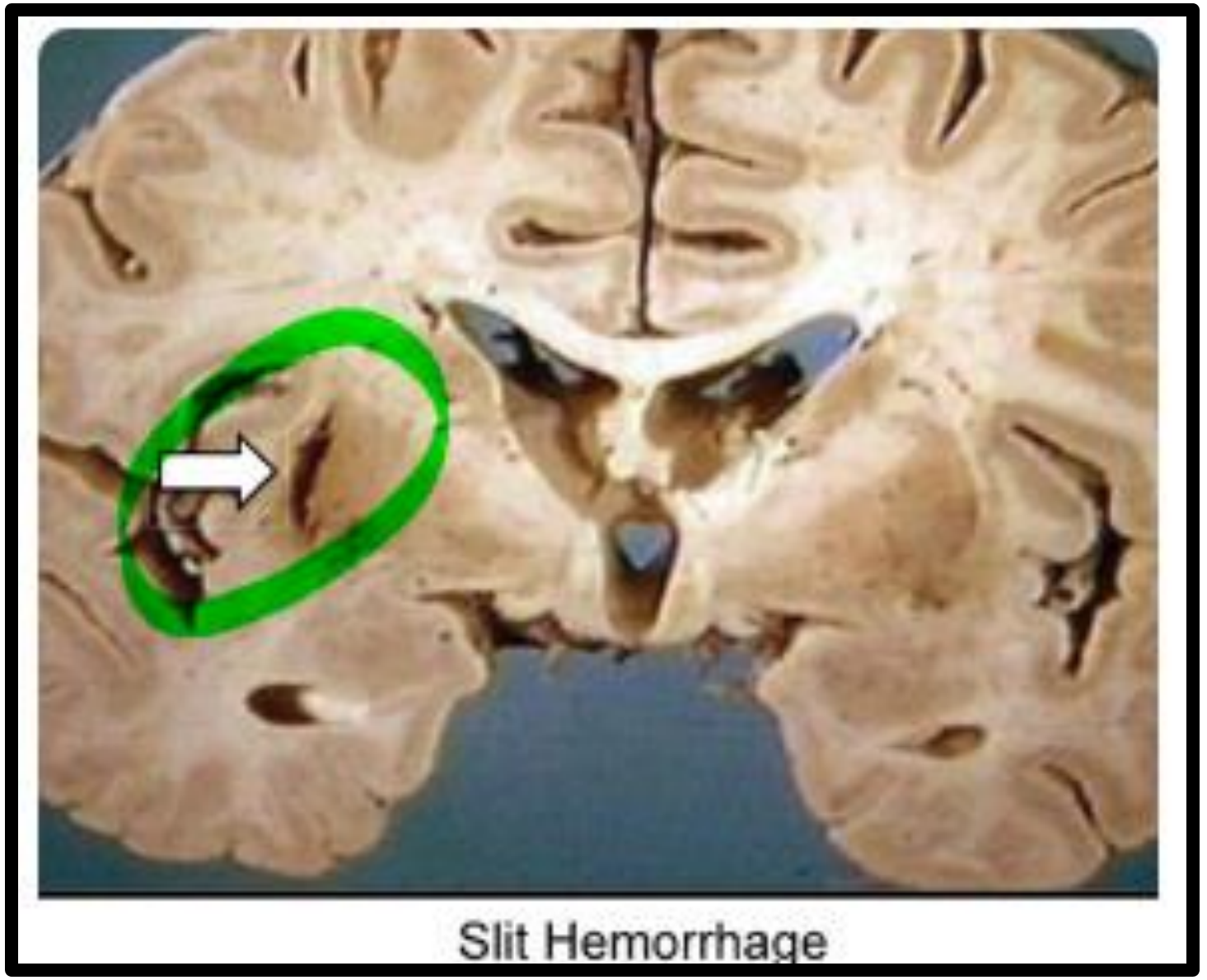


- **Repair,** seen after 2 weeks, is characterized by removal of necrotic tissue and gliosis


Cerebral hemorrhage. Massive hypertensive hemorrhage rupturing into a lateral ventricle

Lacunar infarct in the Pons





Slit Hemorrhage

Early contusions at orbital gyri of frontal lobes

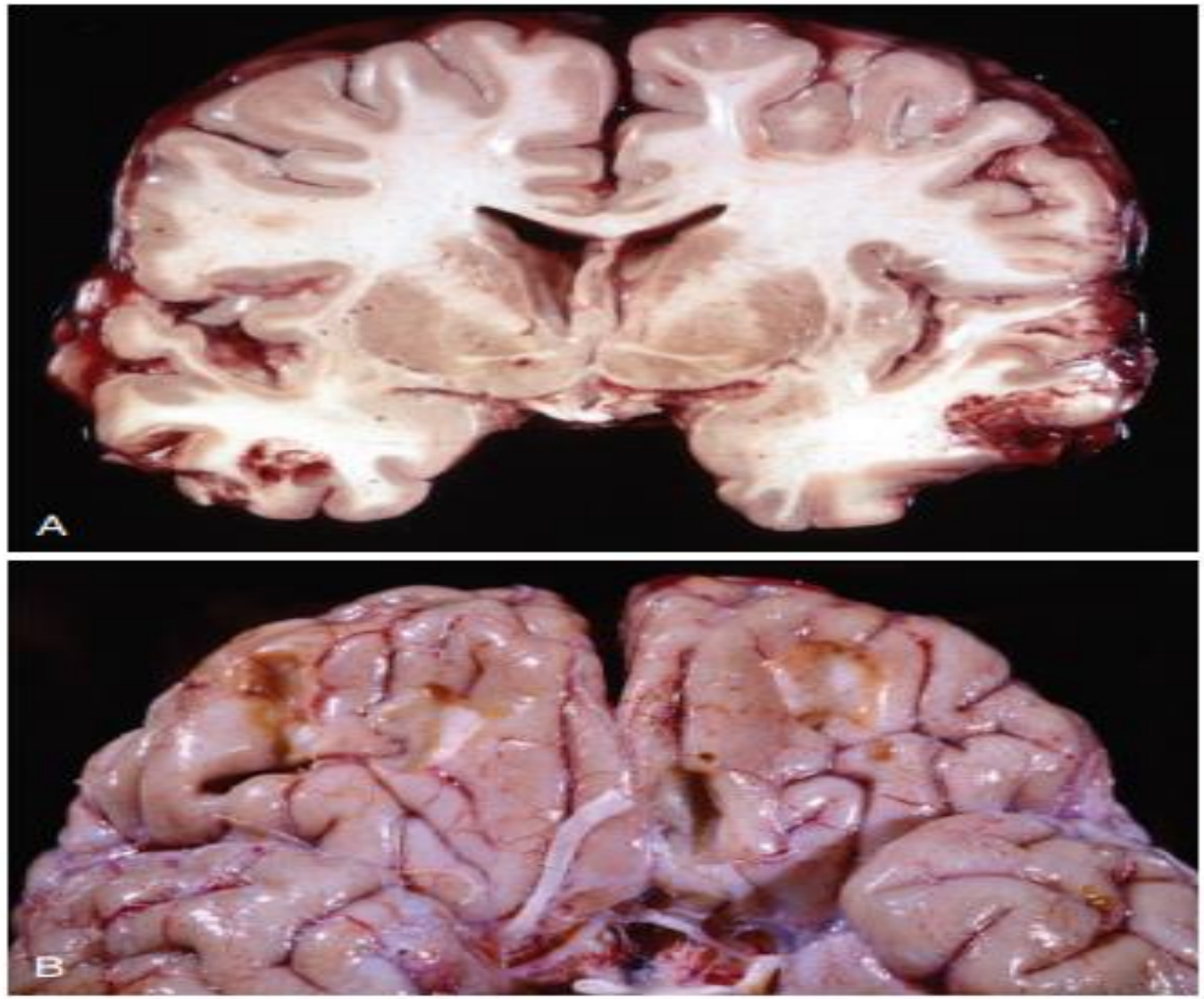


Fig. 23.12 Cerebral trauma. (A) Acute contusions are present in both temporal lobes, with areas of hemorrhage and tissue disruption. (B) Remote contusions, seen as discolored yellow areas, are present on the inferior frontal surface of this brain.

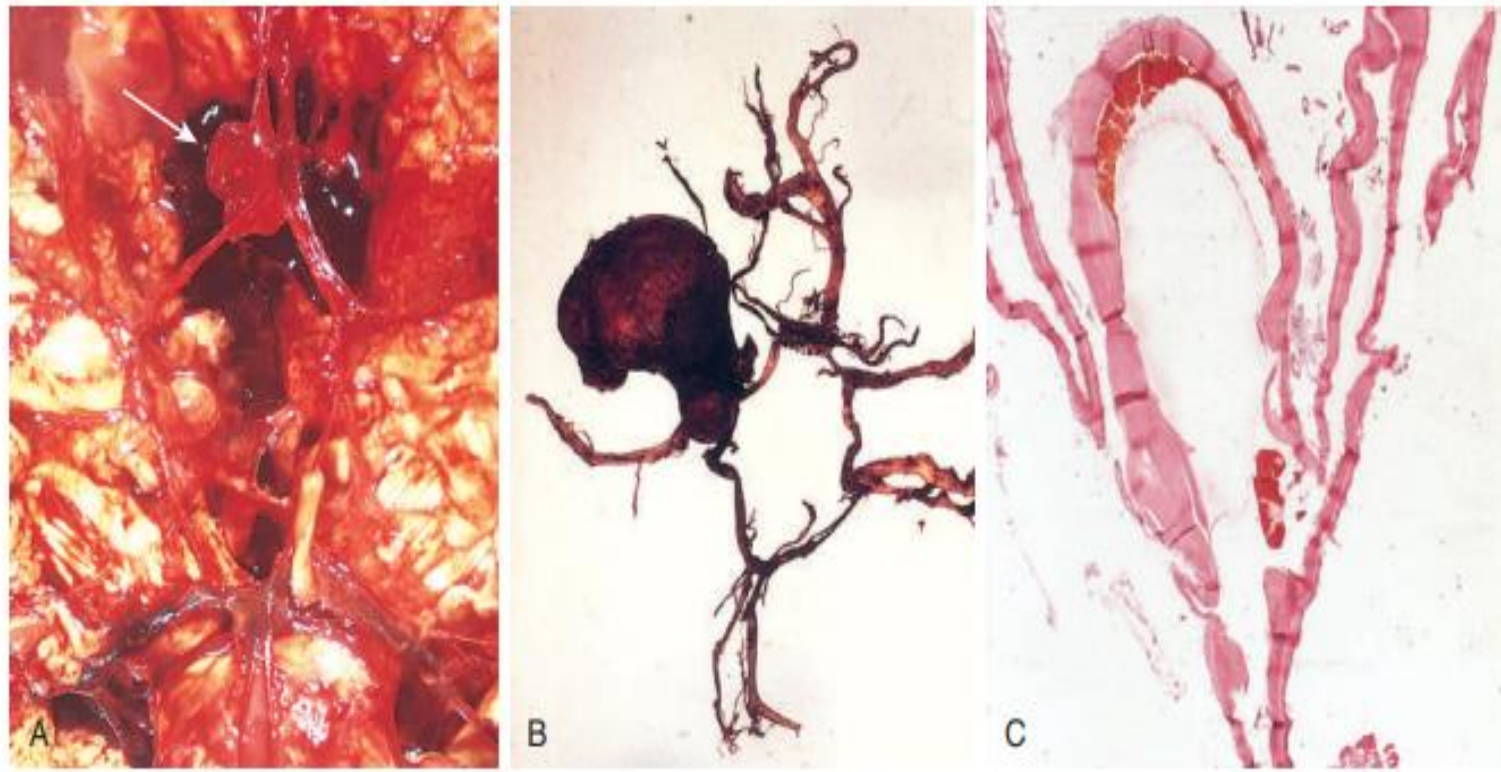


Fig. 23.10 Saccular aneurysms. (A) View of the base of the brain, dissected to show the circle of Willis with an aneurysm of the anterior cerebral artery *(arrow)*. (B) The circle of Willis is dissected to show a large aneurysm. (C) Section through a saccular aneurysm showing the hyalinized fibrous vessel wall. Hematoxylin-eosin stain.

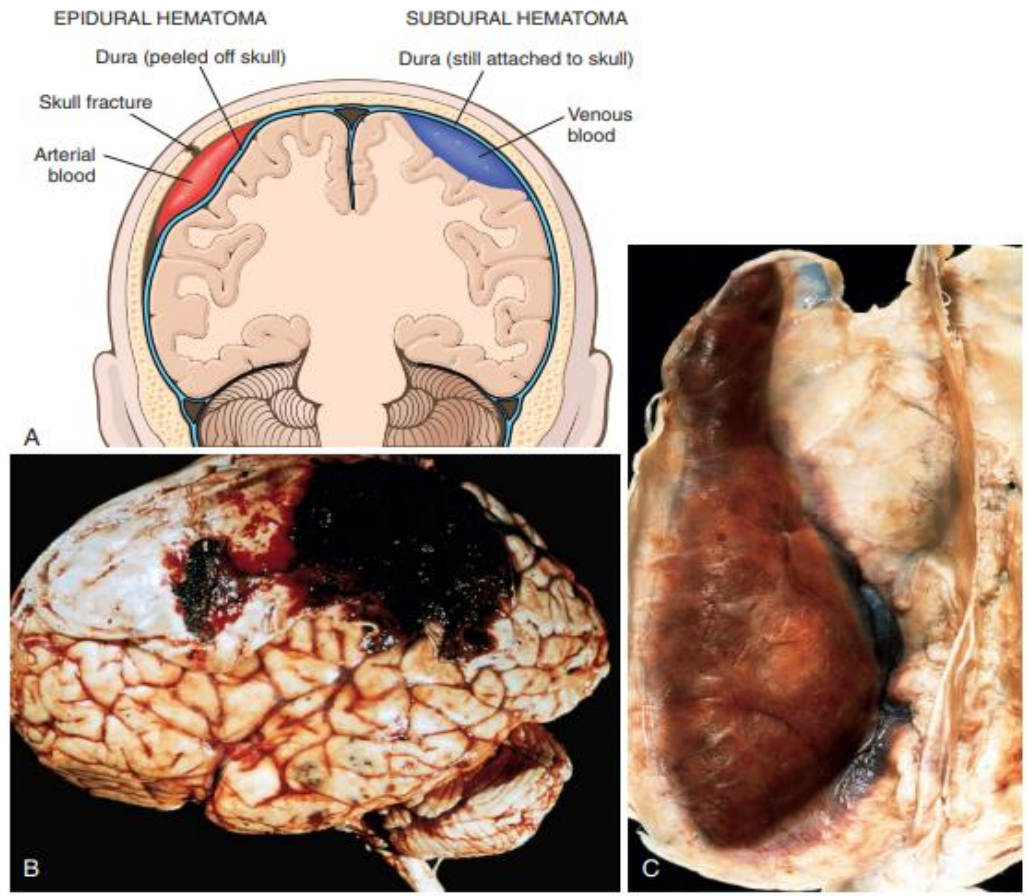
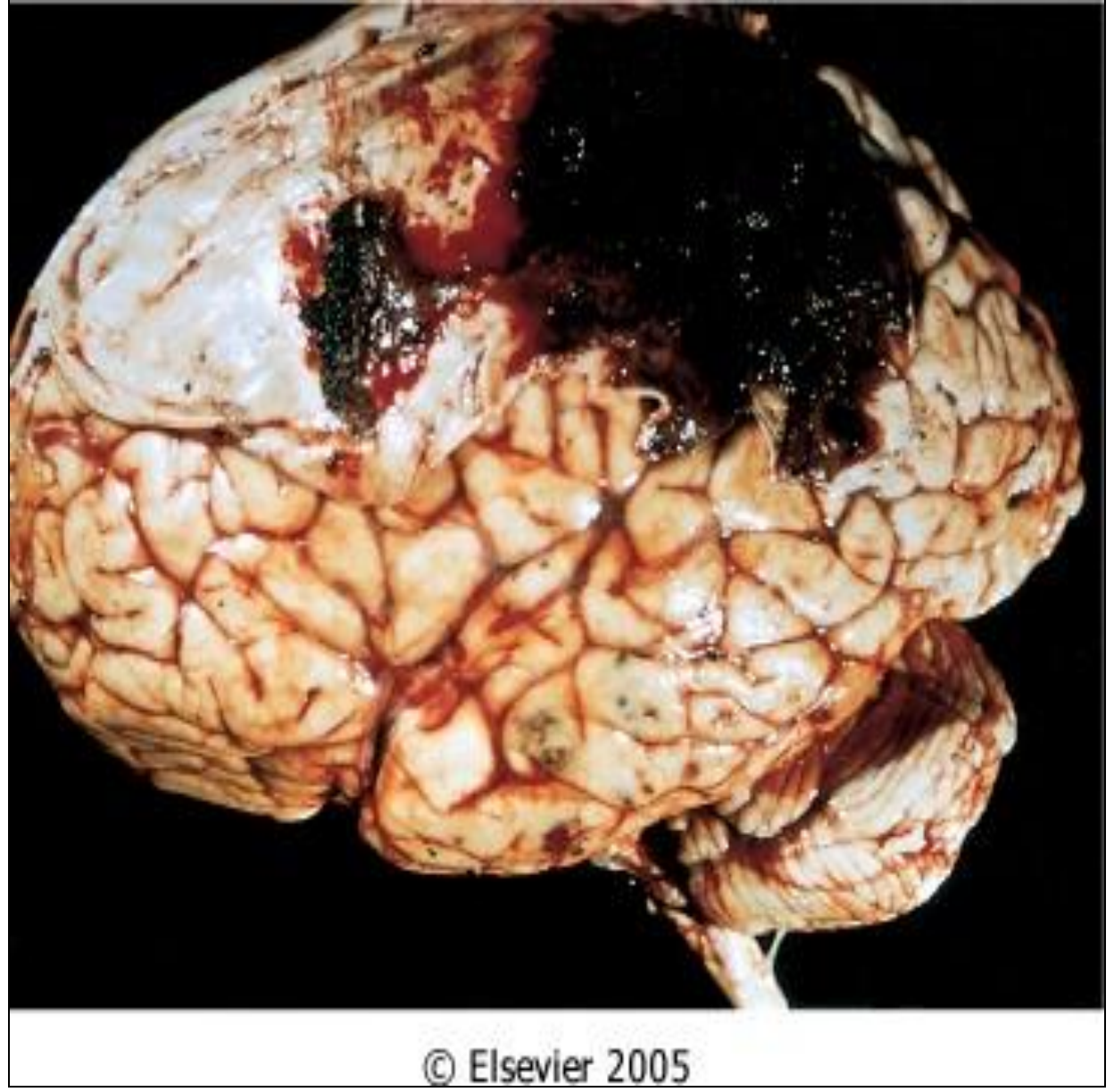
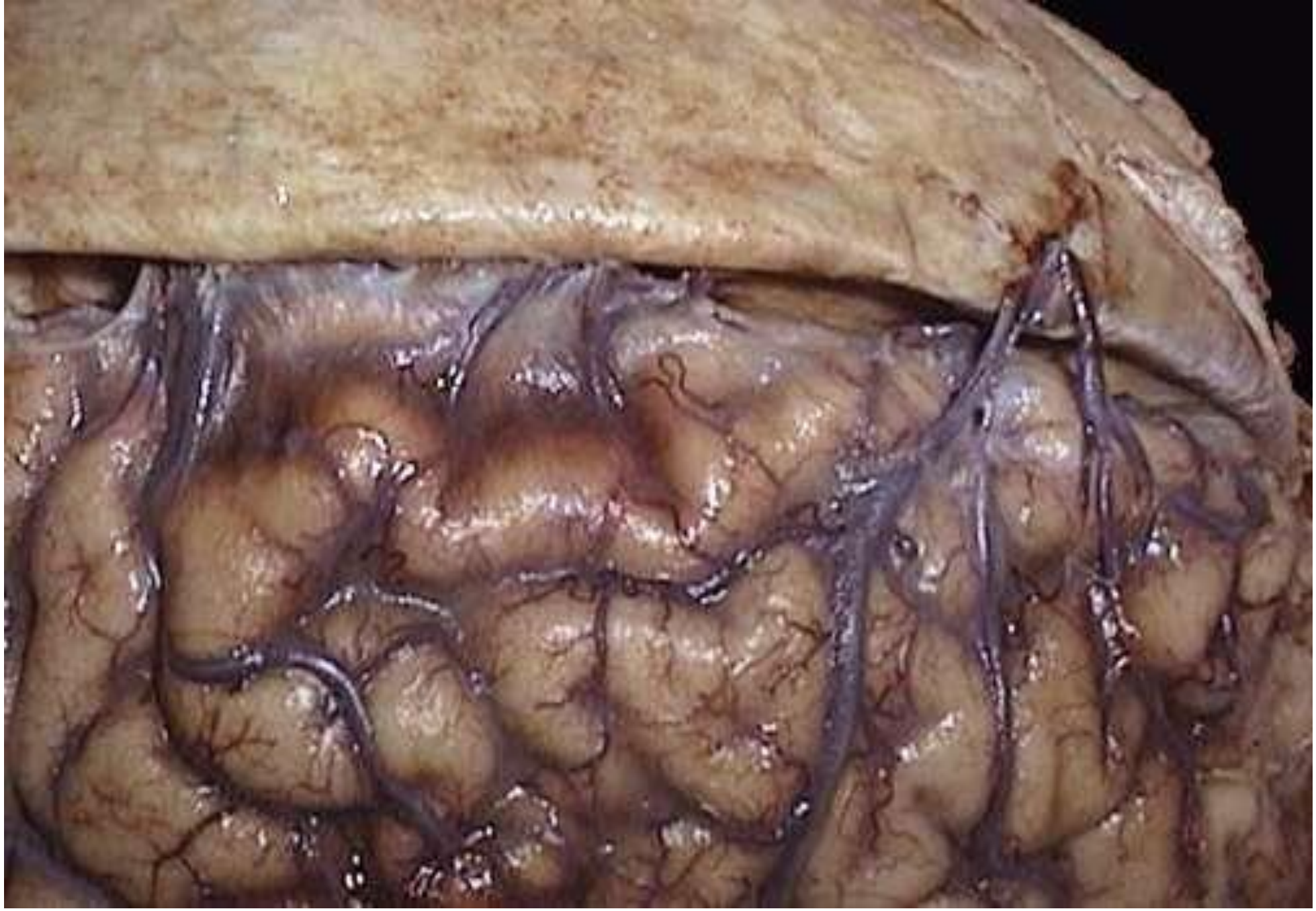
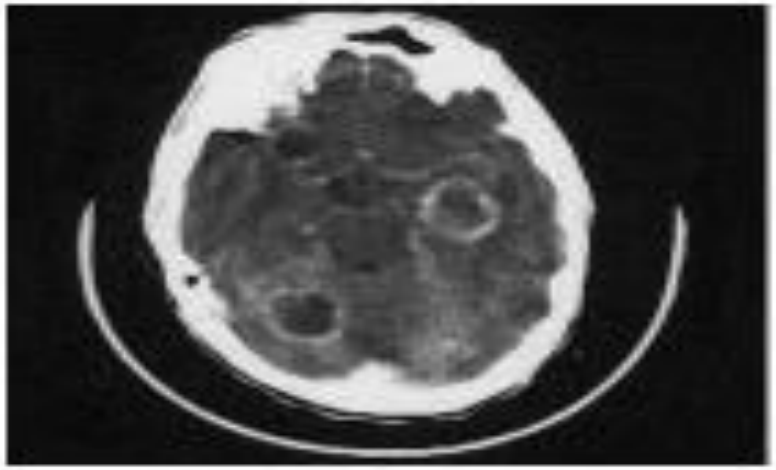
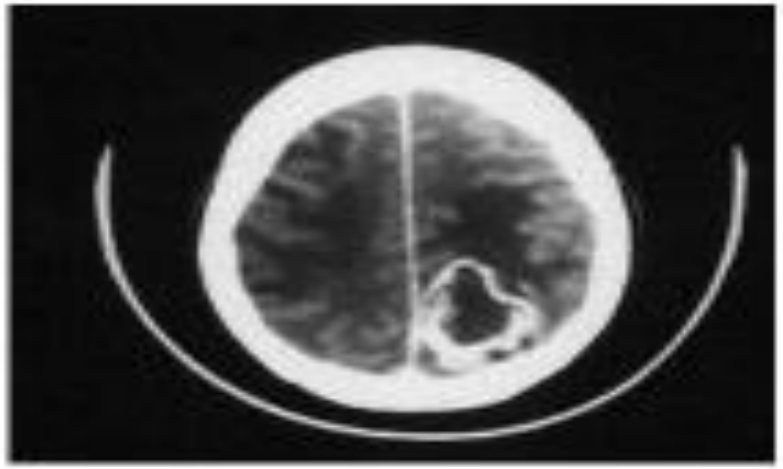
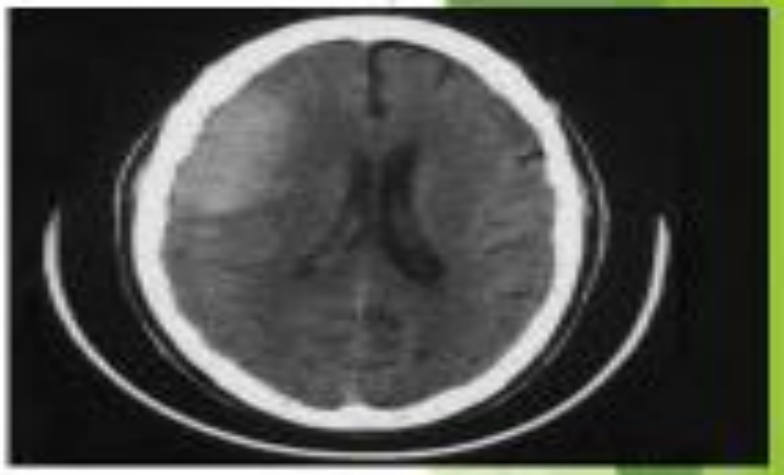


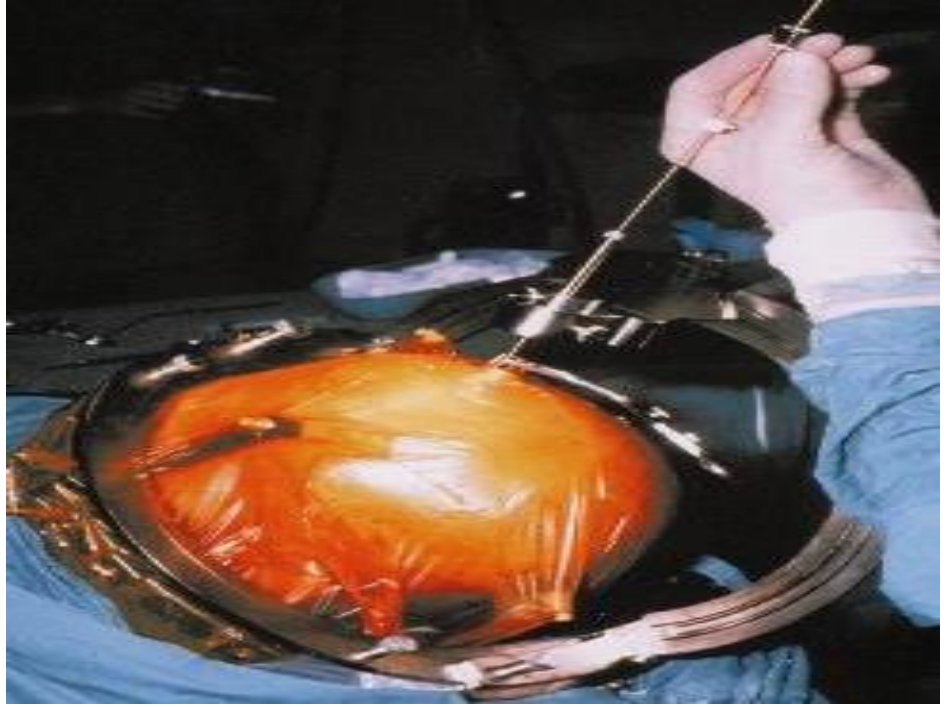
Fig. 23.13 Traumatic intracranial hemorrhages. (A) Epidural hematoma *(left)* in which rupture of a meningeal artery, usually associated with a skull fracture, has led to accumulation of arterial blood between the dura and the skull. In a subdural hematoma *(right)*, damage to bridging veins between the brain and the superior sagittal sinus has led to the accumulation of blood between the the two layers of dura. (B) Epidural hematoma covering a portion of the dura. (C) Large organizing subdural hematoma attached to the dura. *(B, Courtesy of the late Dr. Raymond D. Adams, Massachusetts General Hospital, Boston, Massachusetts.)*



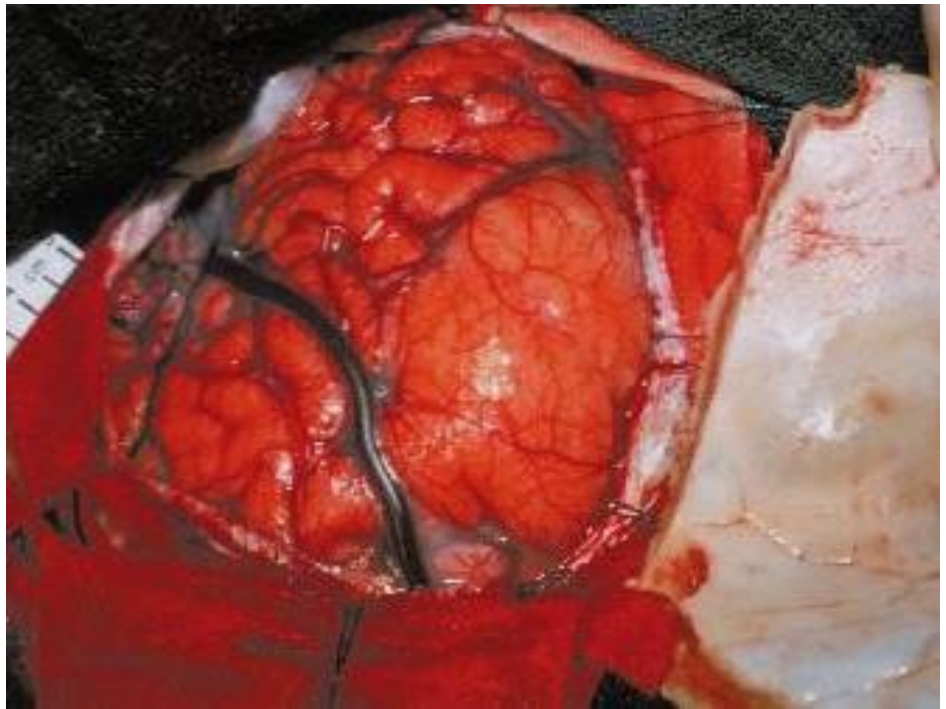
Epidural hematoma covering a portion of the dura. Multiple small contusions are seen in the temporal lobe.



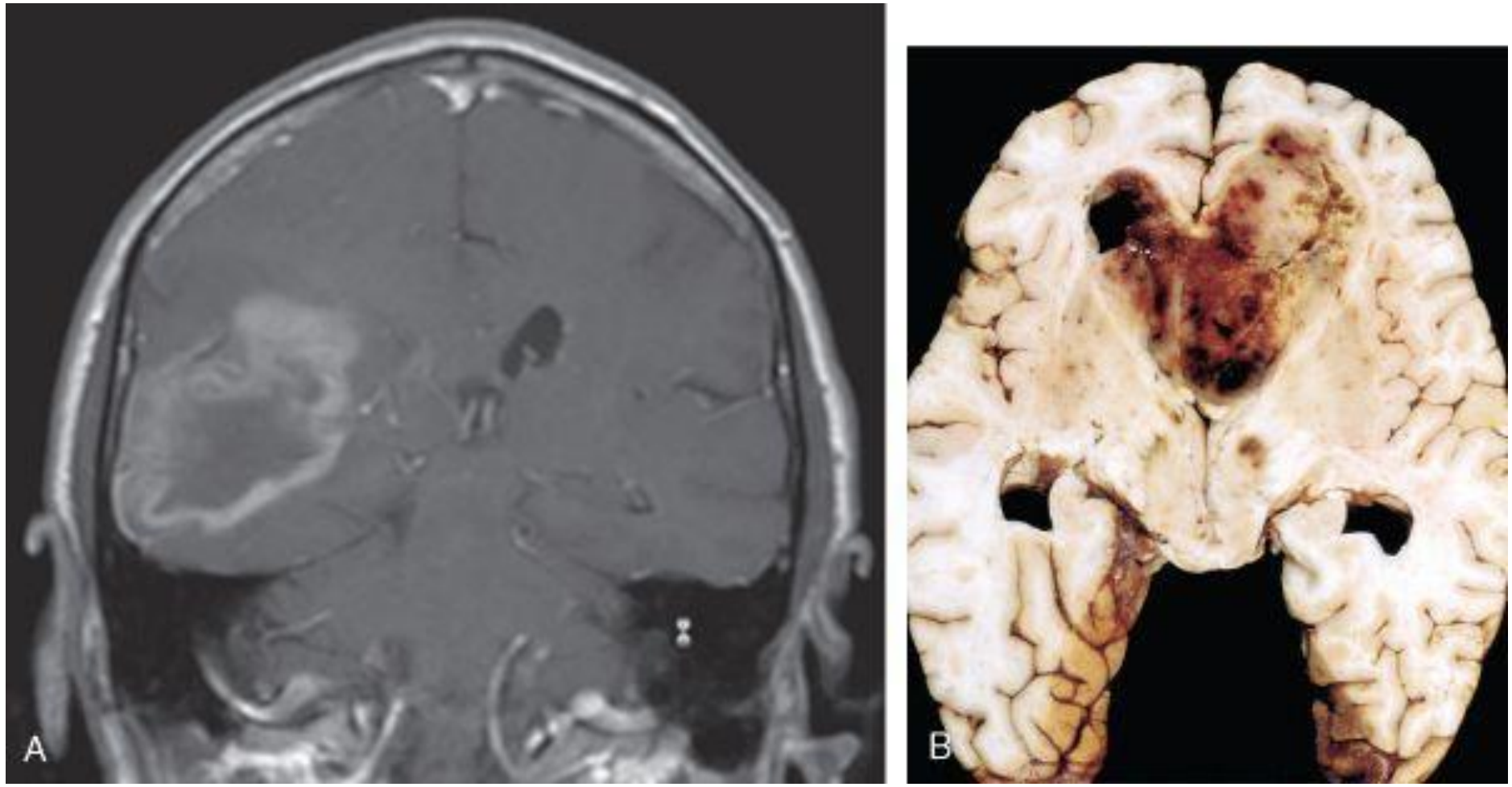






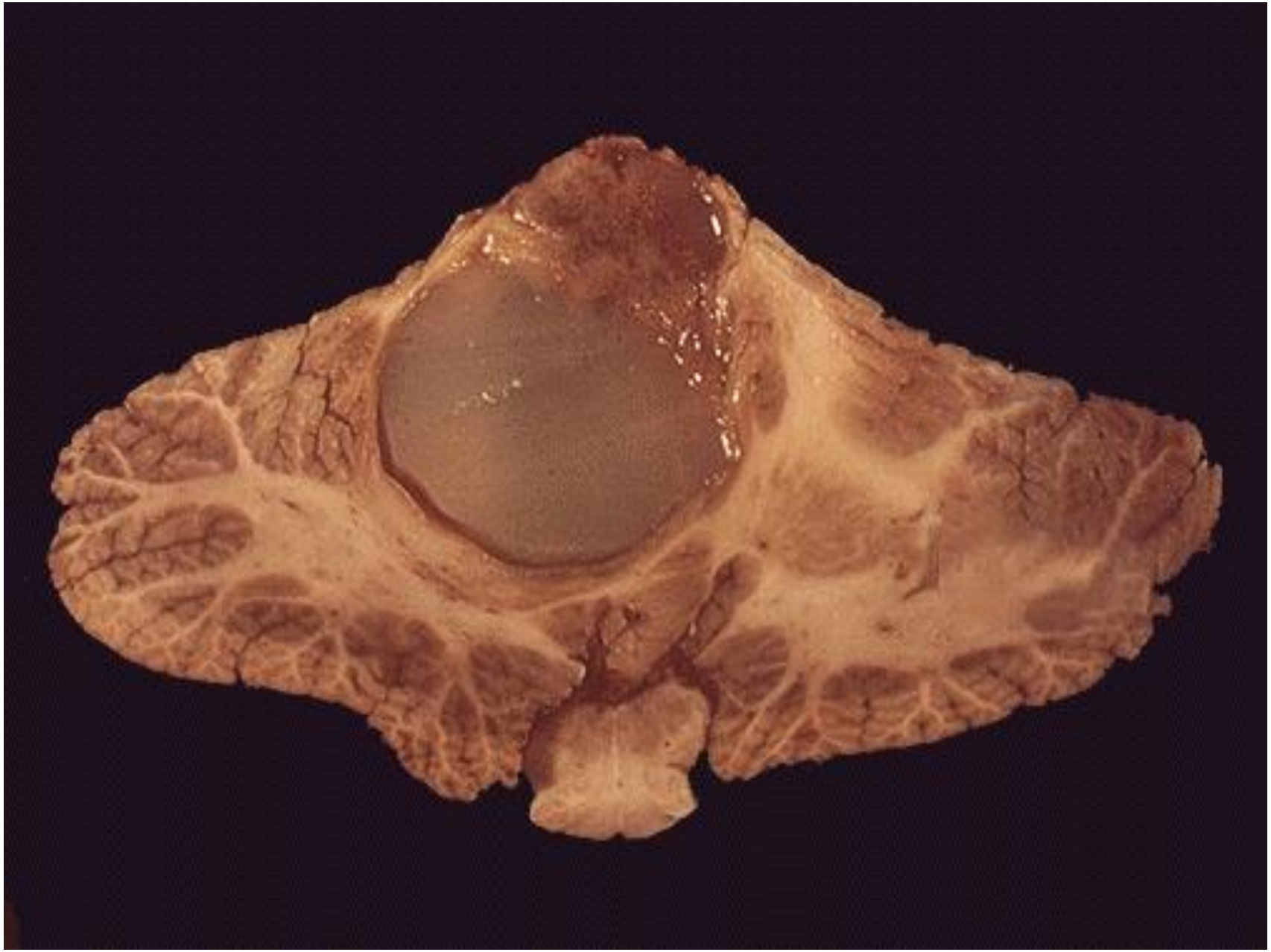
- Stereotactic Biopsy



- Craniotomy

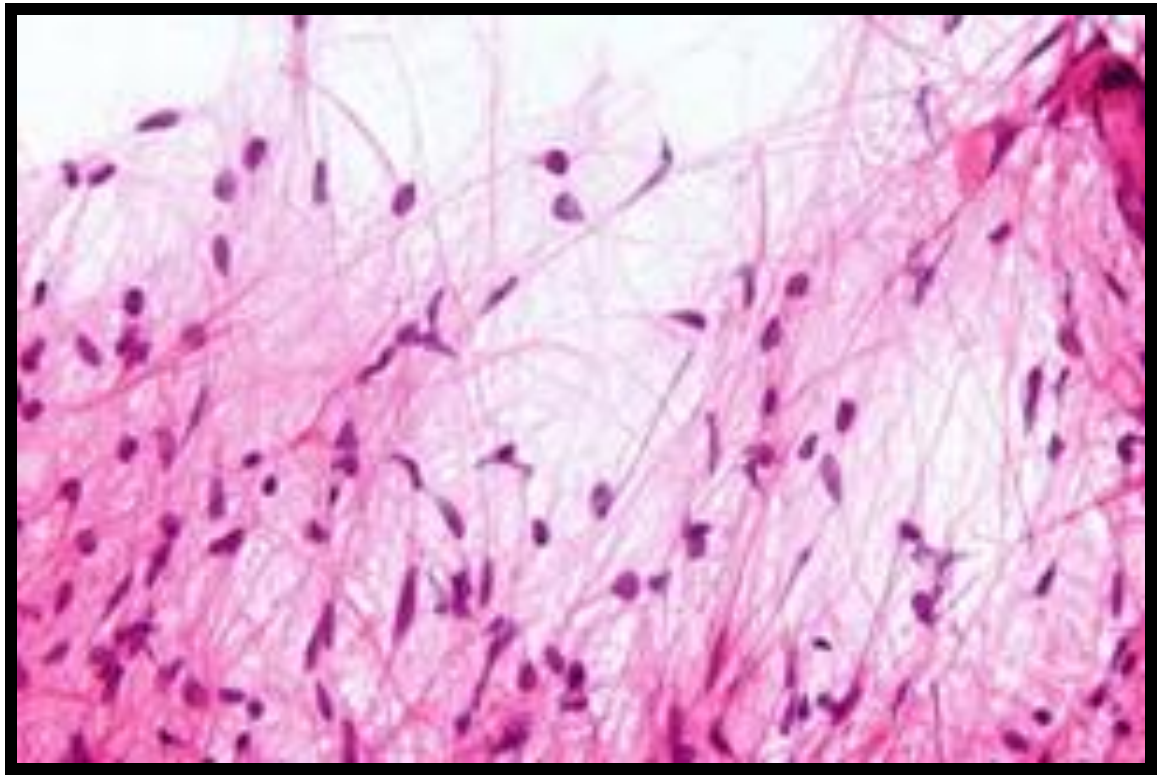


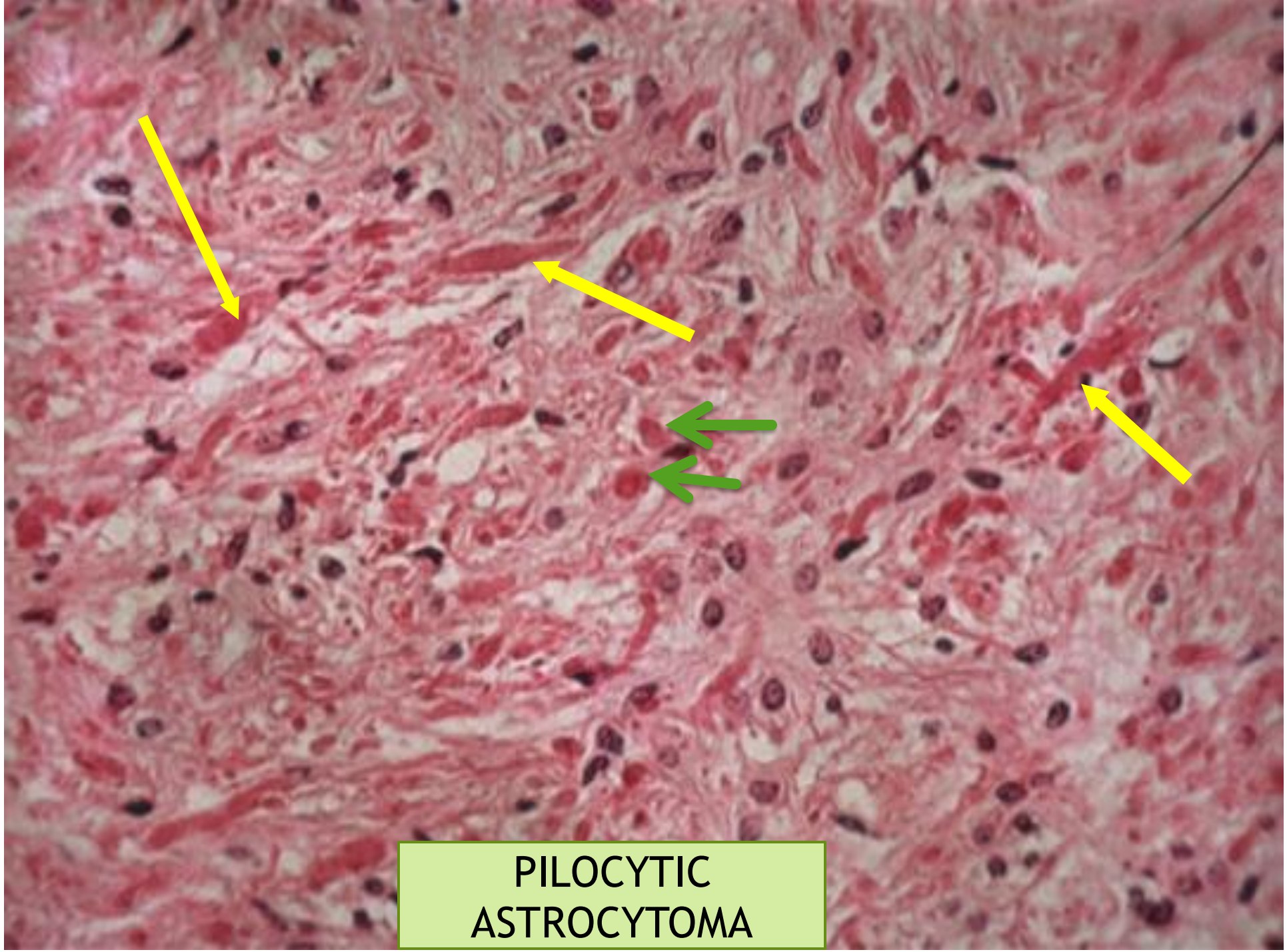
A, Post-contrast T1-weighted coronal MRI shows a large mass in the right parietal lobe with "ring" enhancement. B, Glioblastoma appearing as a necrotic, hemorrhagic, infiltrating mass.

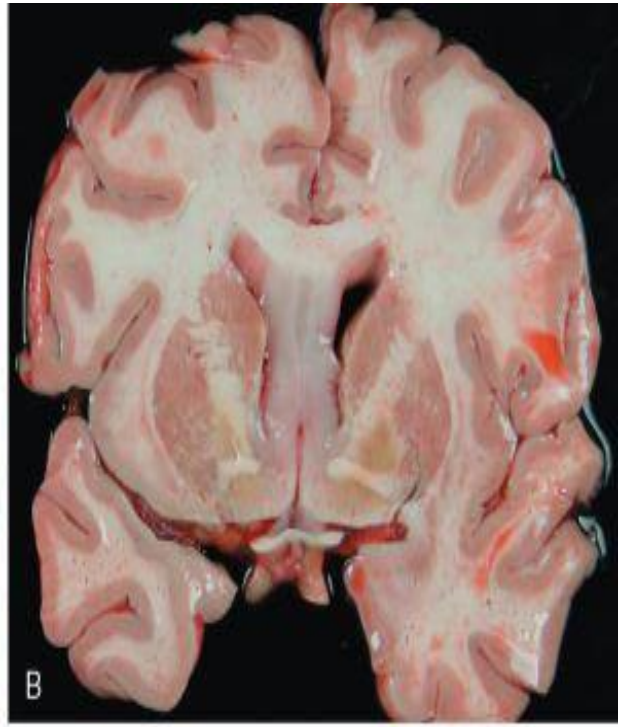


Pilocytic astrocytoma - A relatively well-defined cystic tumor

- Bipolar cells with:
- Long, thin processes.



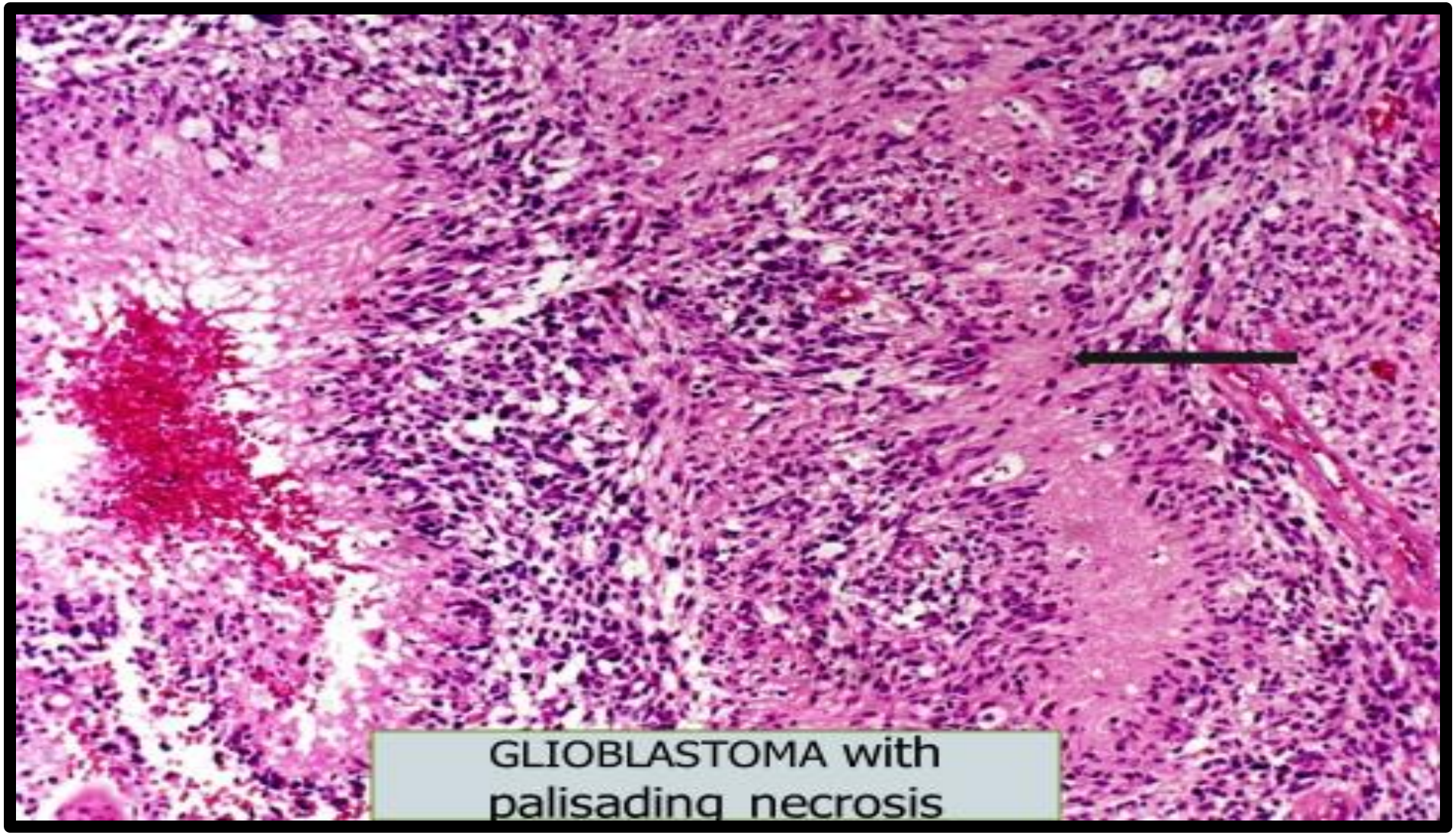

PILOCYTIC
ASTROCYTOMA



- Diffuse astrocytoma.

A, The right frontal tumor has expanded gyri, which led to flattening (arrows).

B, There is bilateral expansion of the septum pellucidum by gray, glassy tumor.


GLIOBLASTOMA with
palisading necrosis

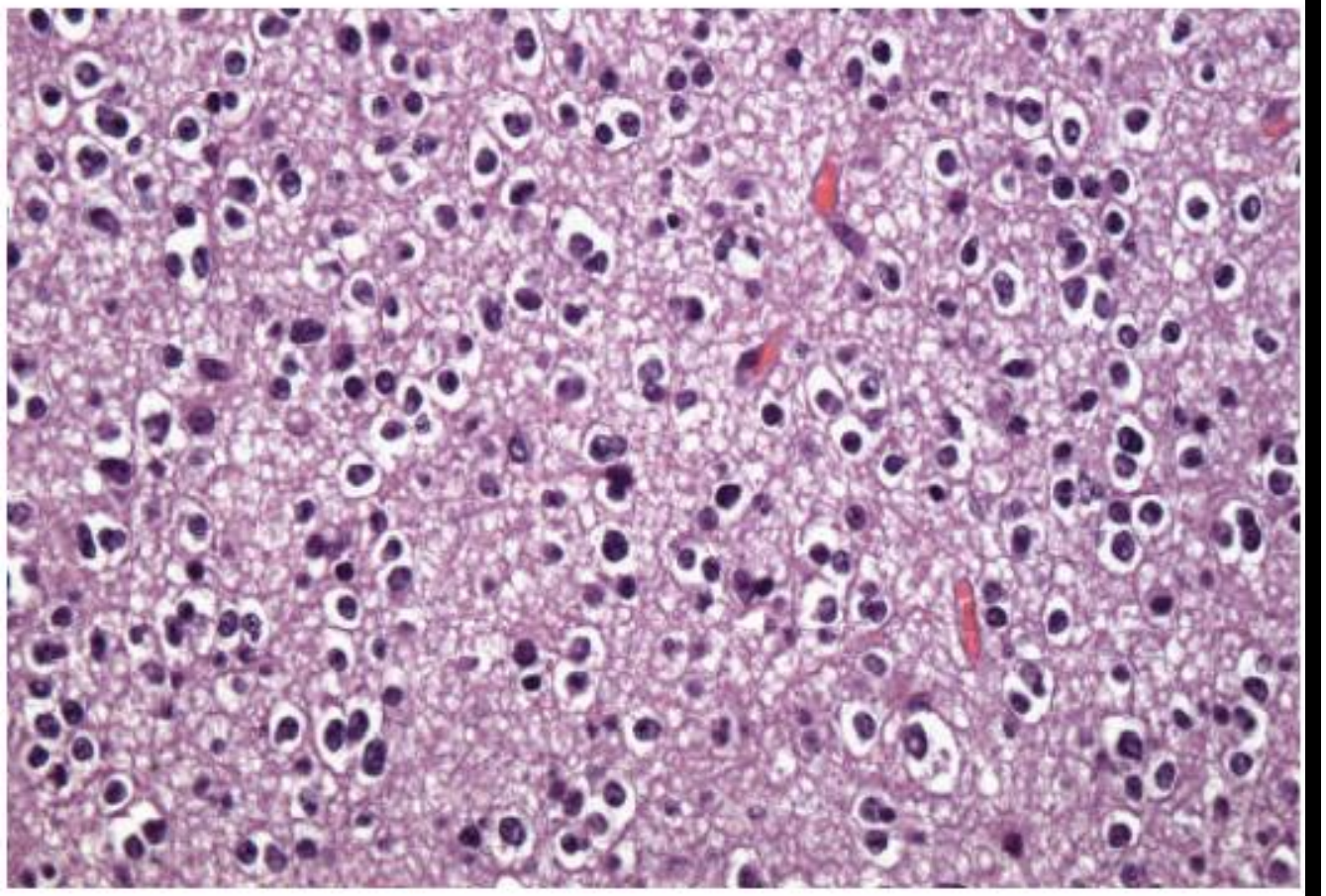


Fig. 23.30 In oligodendroglioma, tumor cells have round nuclei, often with a clear cytoplasmic halo. Blood vessels in the background are thin and can form an interlacing pattern.

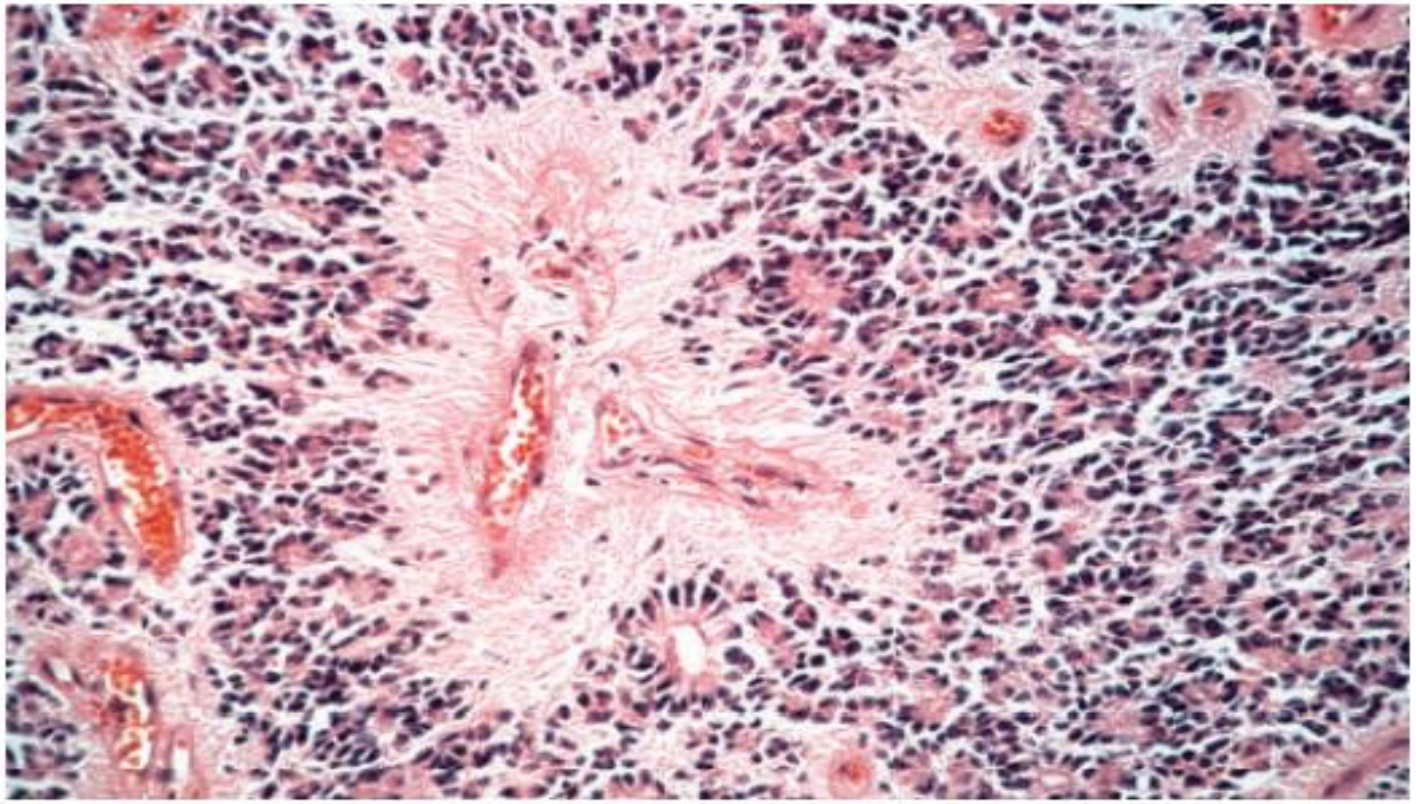
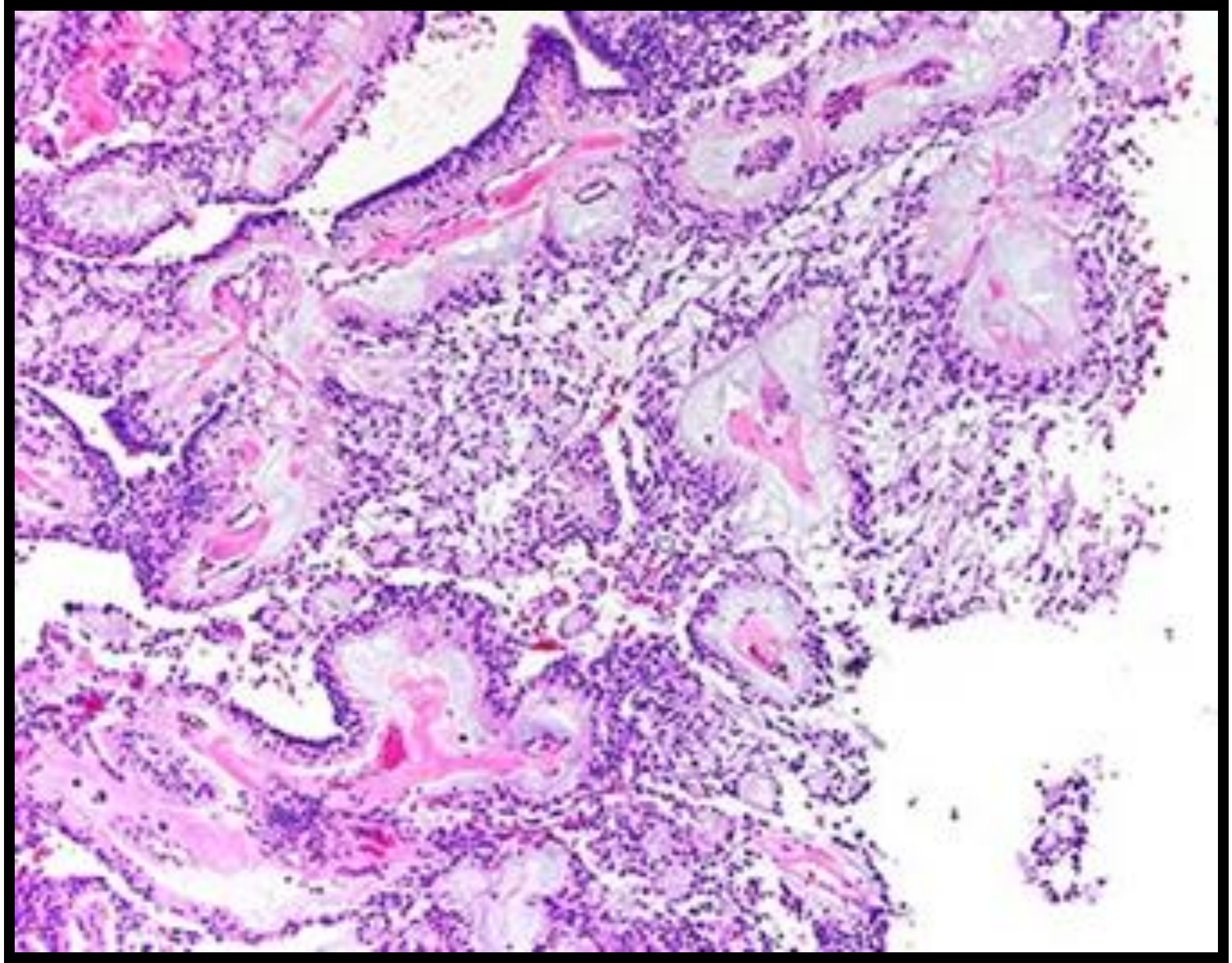
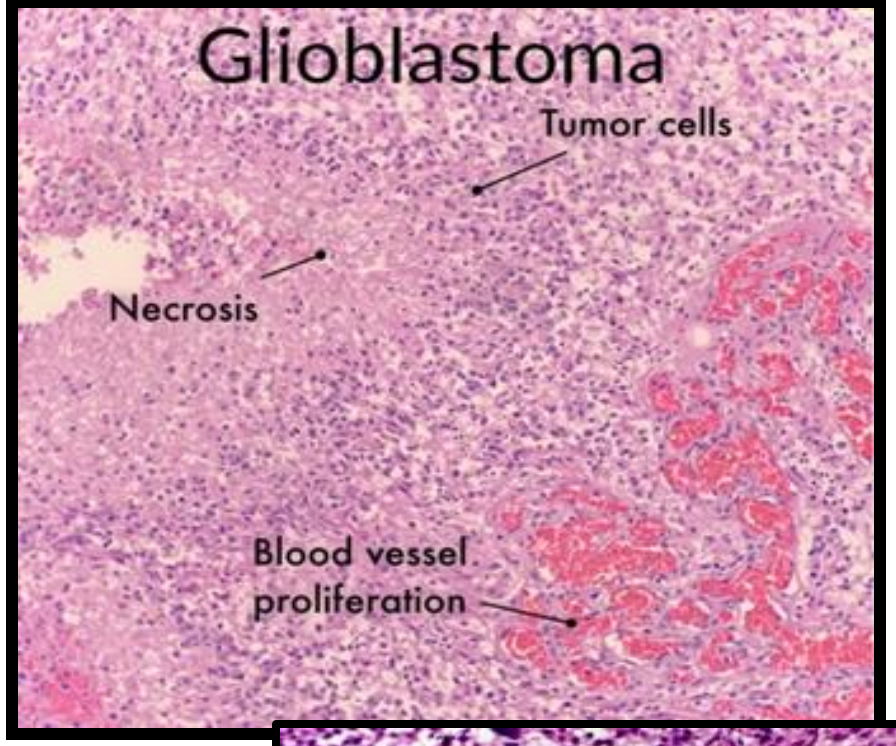
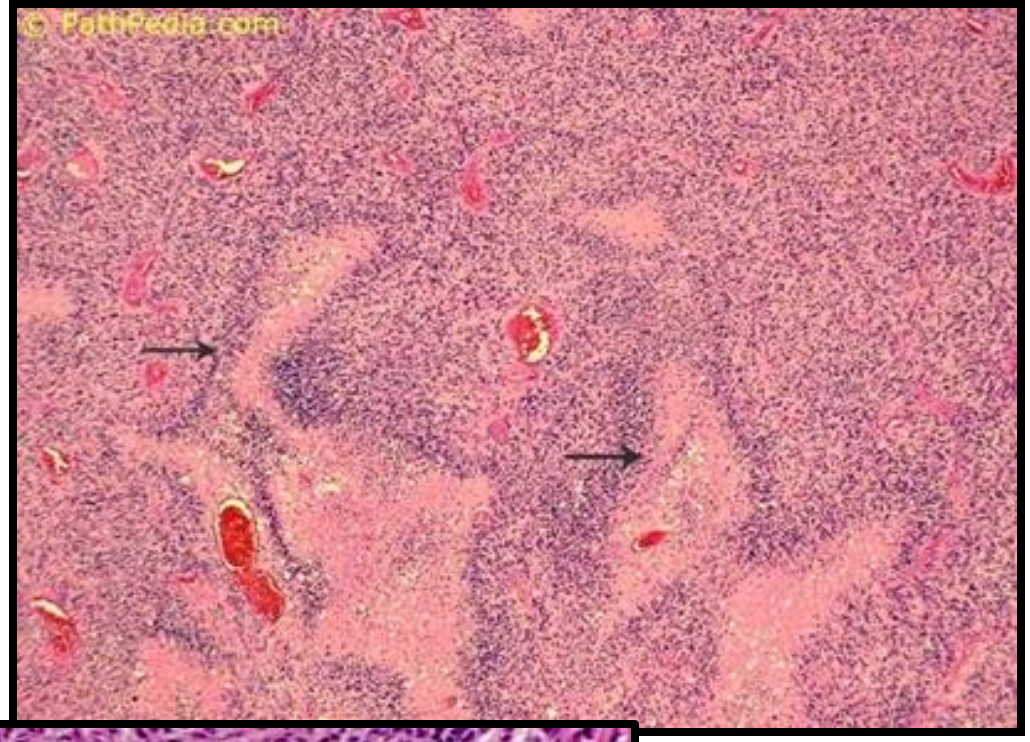
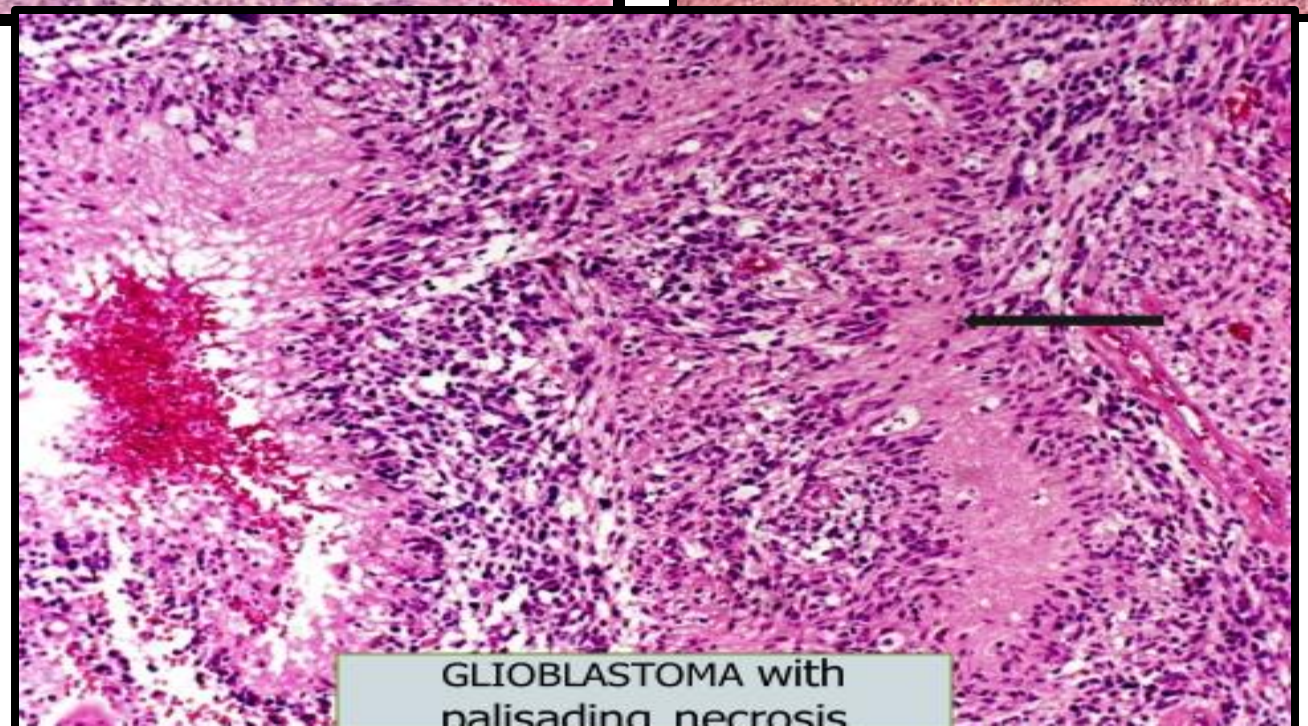


Fig. 23.31 Microscopic appearance of ependymoma.




Glioblastoma
Tumor cells
Necrosis
Blood vessel
proliferation


© PathPedia.com


GLIOBLASTOMA with
palisading necrosis

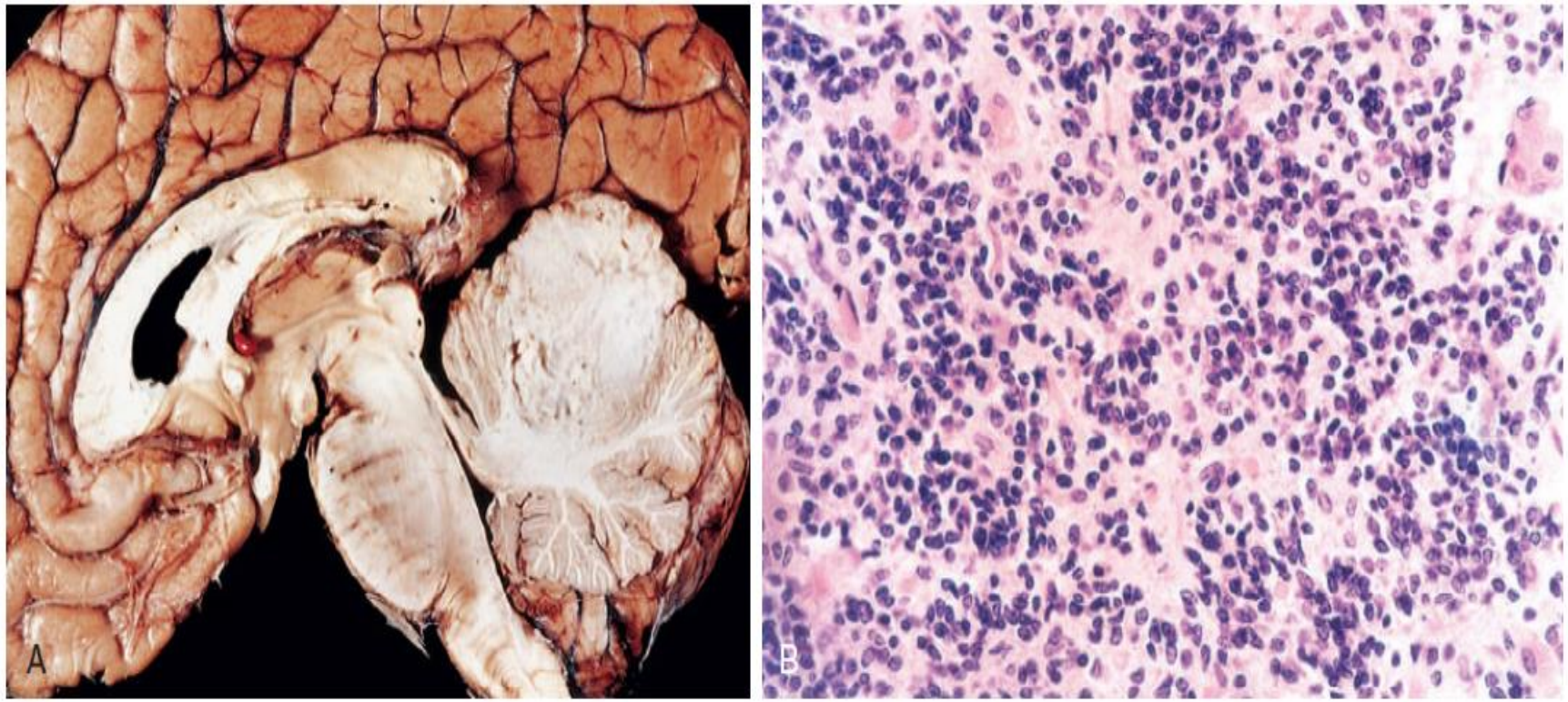
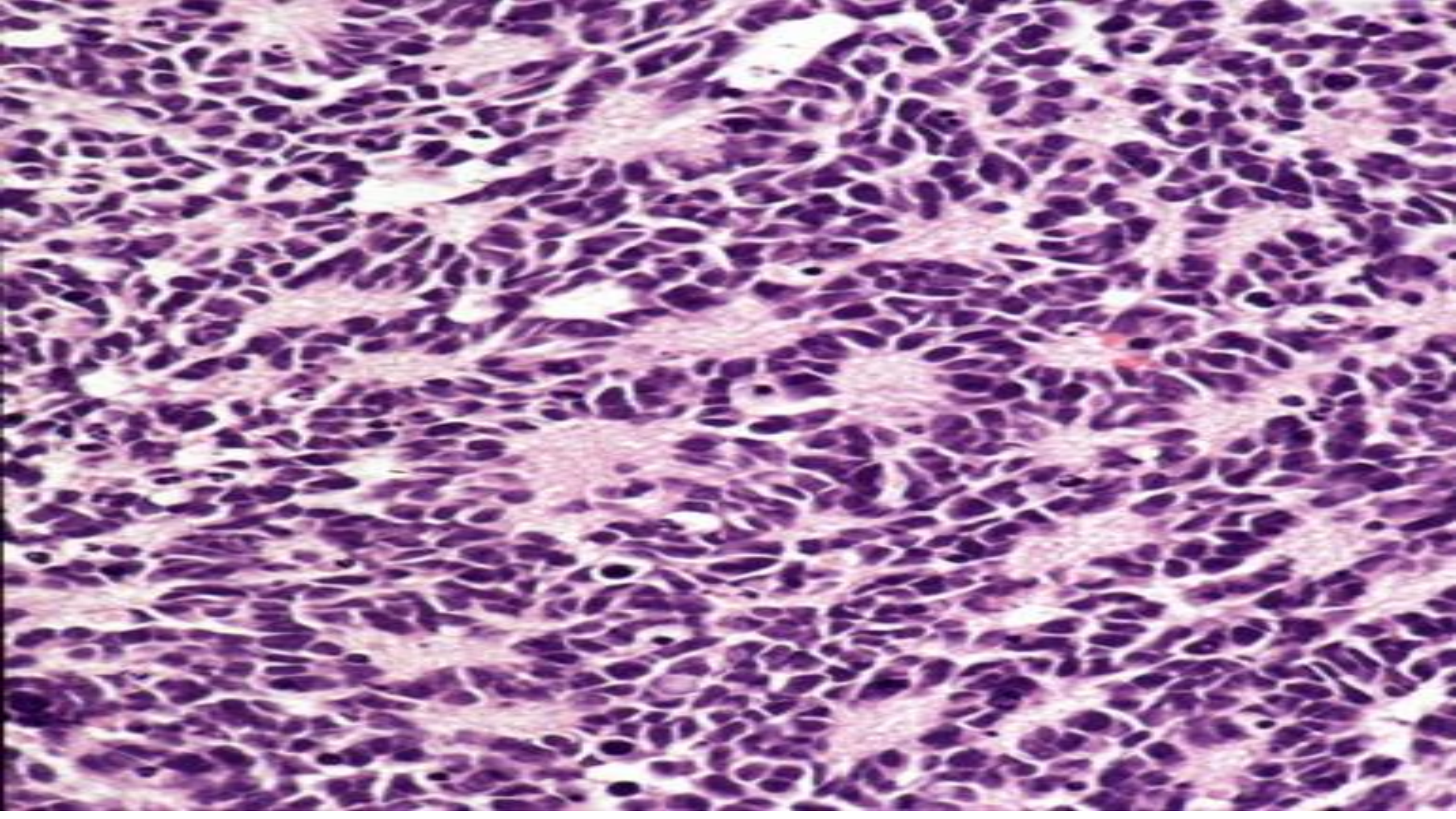
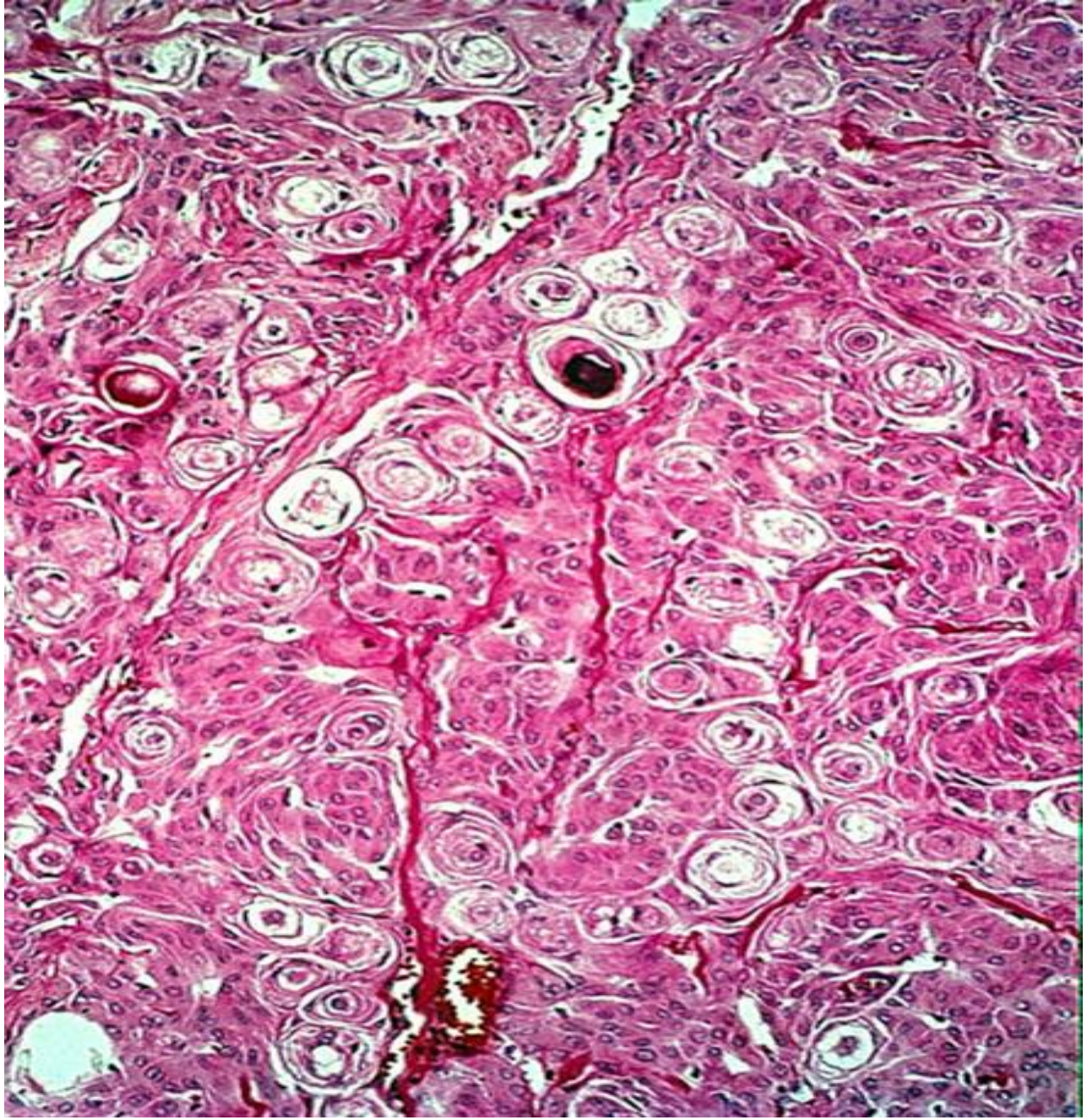
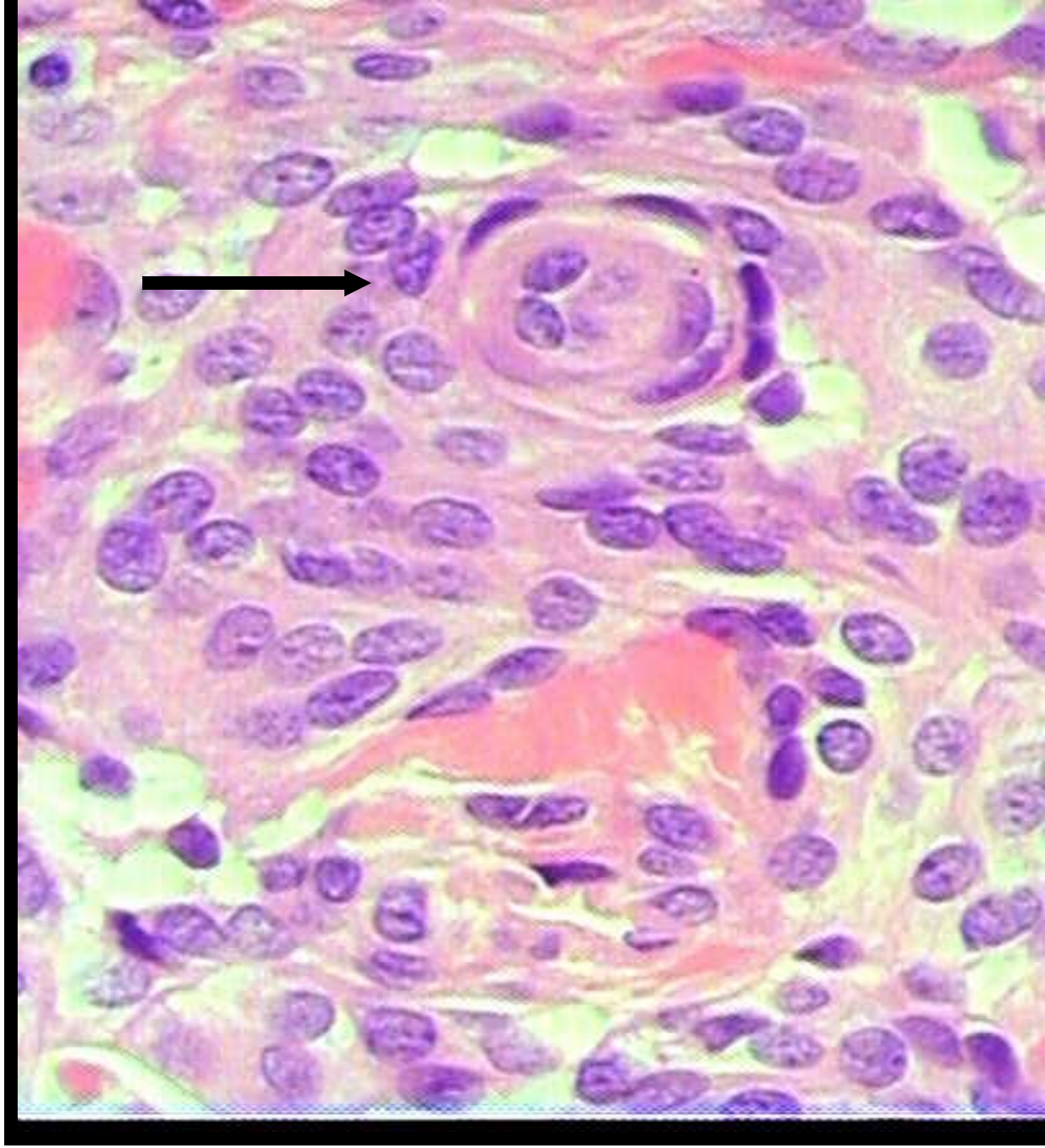


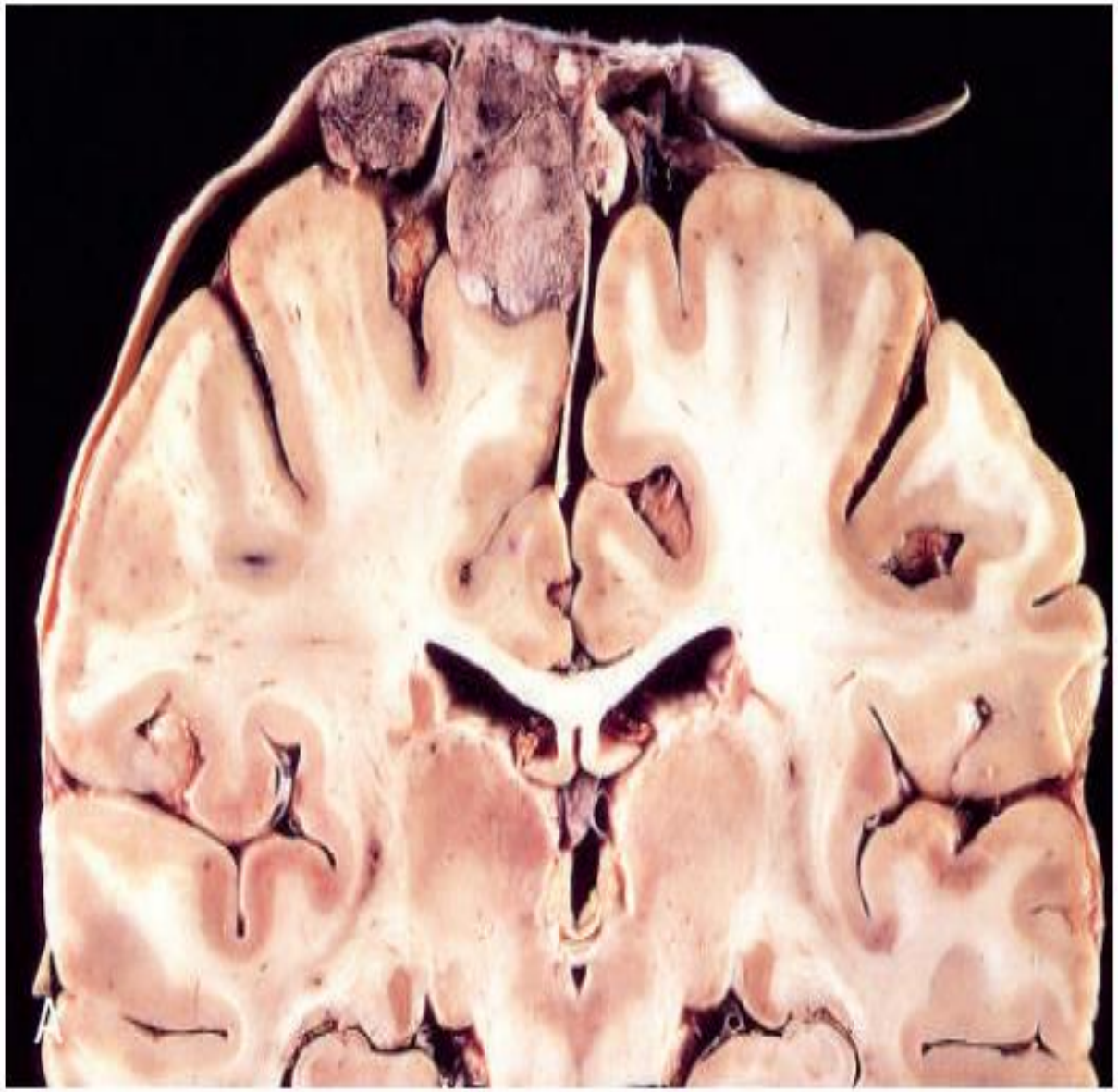
Fig. 23.32 Medulloblastoma. (A) Sagittal section of a brain showing medulloblastoma involving the superior vermis of the cerebellum. (B) Microscopic appearance of medulloblastoma, showing mostly small, blue, primitive-appearing tumor cells.







Psammoma bodies are diagnostic of meningiomas in brain tumors



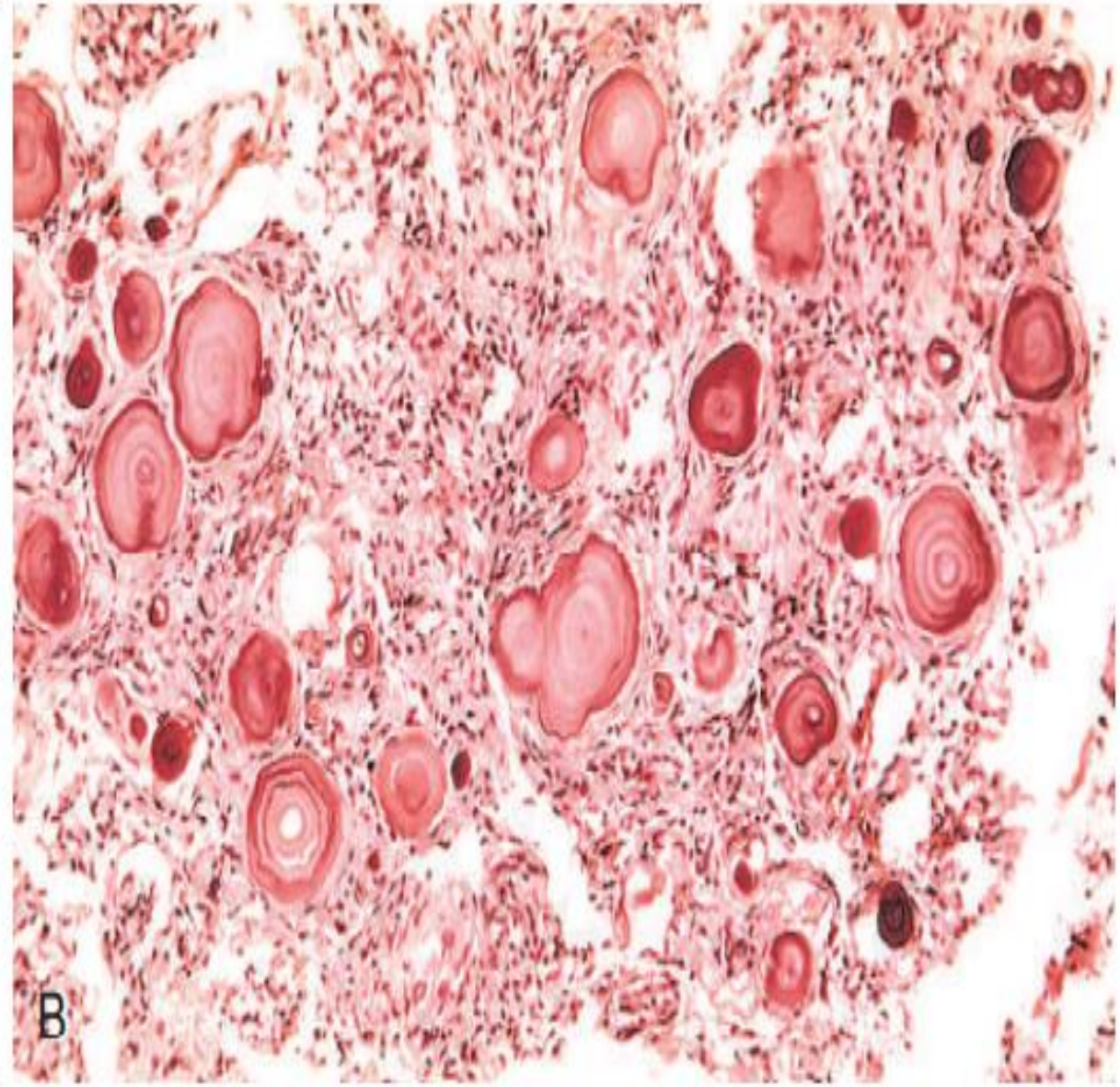


Fig. 23.33 Meningioma. (A) Parasagittal multilobular meningioma attached to the dura with compression of underlying brain. (B) Meningioma with a whorled pattern of cell growth and psammoma bodies.

- THANK YOU