

Pathology of Swine

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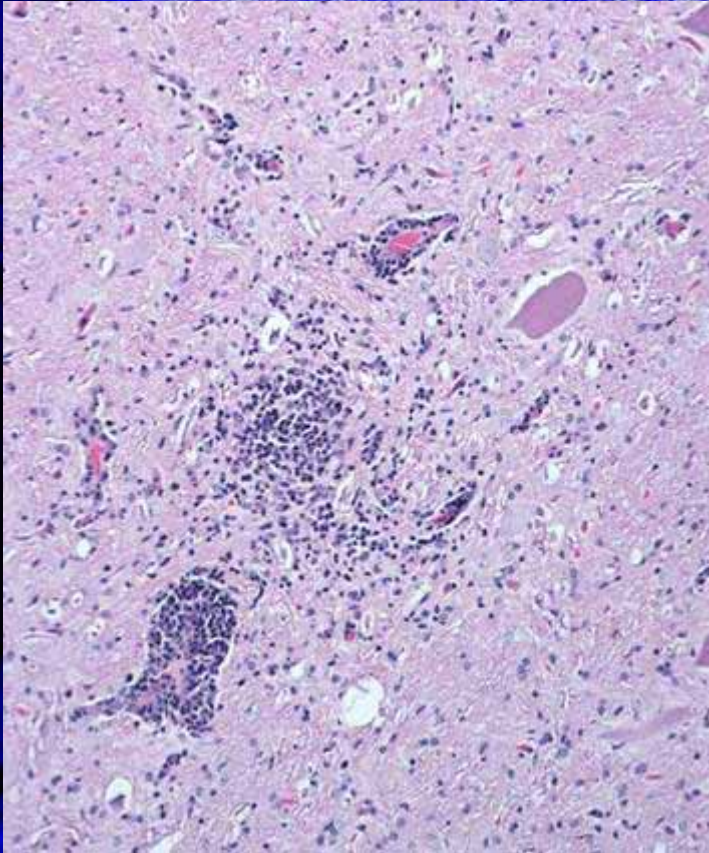
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E-mail: kiupel@dcpah.msu.edu

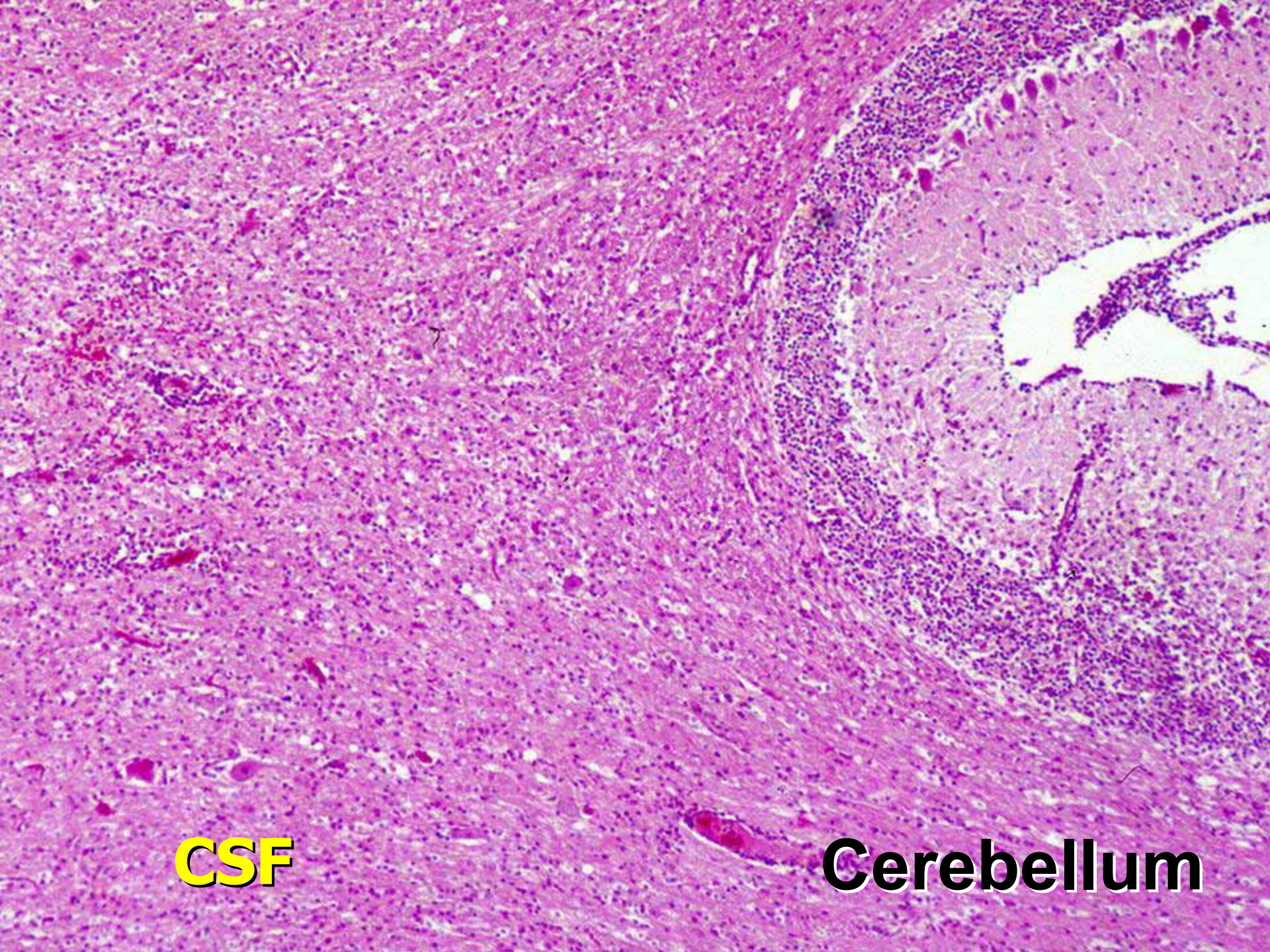
A microscopic image of brain tissue, showing various cellular structures and patterns. The image is in grayscale, with a prominent blue color overlay. The text "Nervous System" is written in a large, bold, serif font across the center of the image.

Nervous System

Viral Encephalitis in Swine

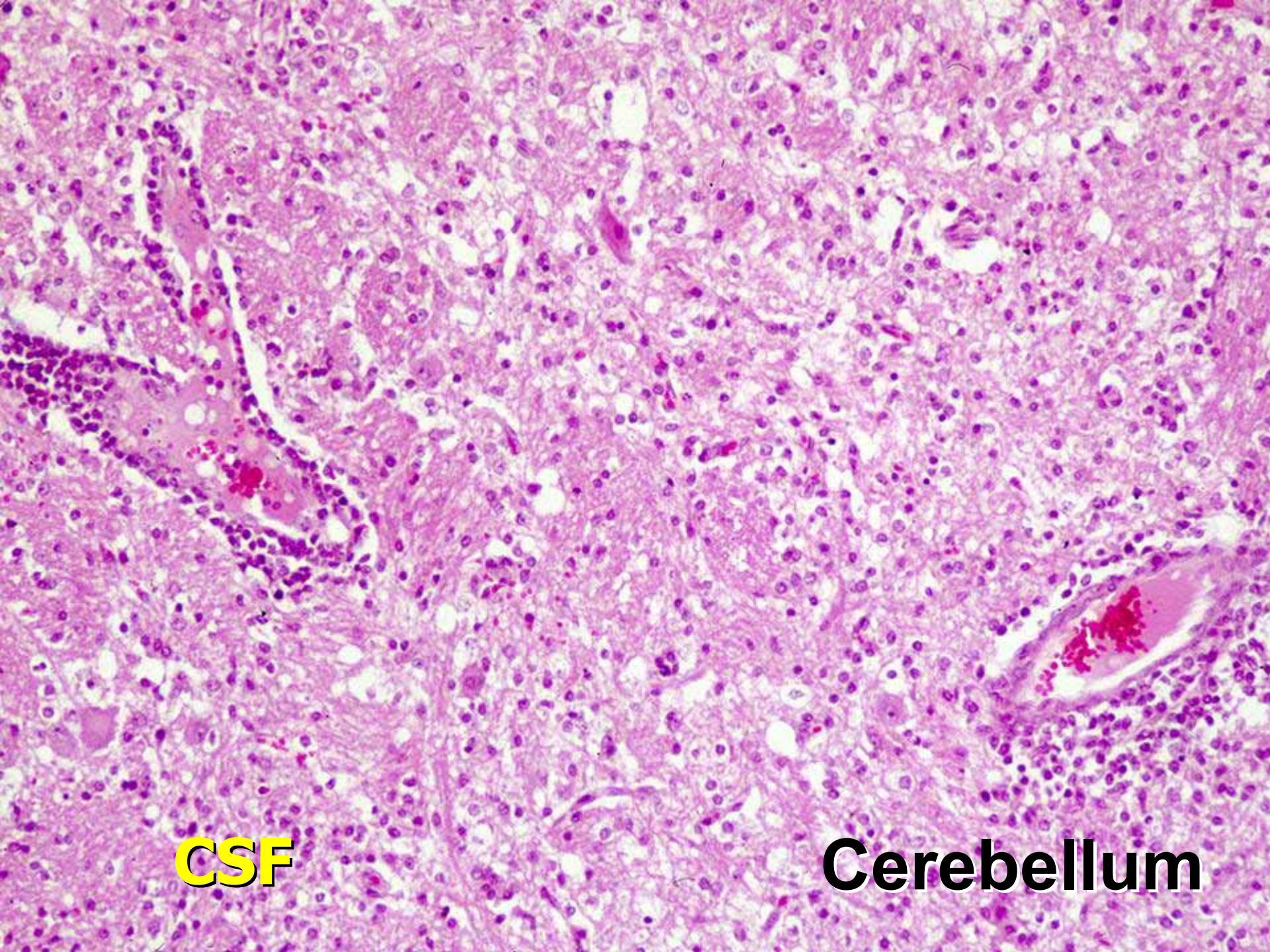


- Pseudorabies virus
- Enterovirus
- H.E.V. (coronavirus)
- E.E.E.V.
- Paramyxovirus (B.E.)
- Rabies virus
- PRRS virus
- Classical swine fever virus
- EMC virus
- Cytomegalovirus
- Nipah virus
- Japanese encephalitis virus



CSF

Cerebellum

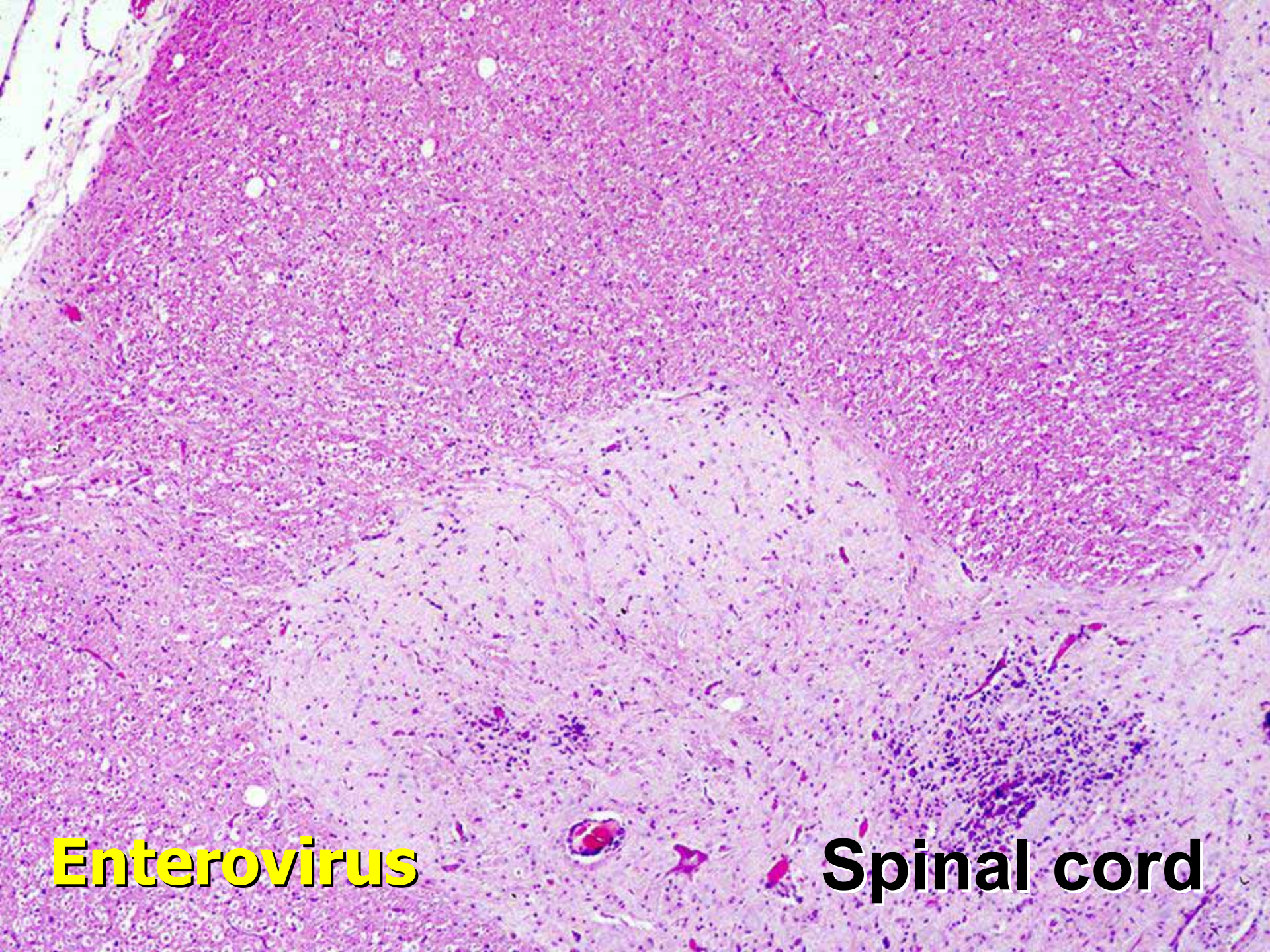


CSF

Cerebellum

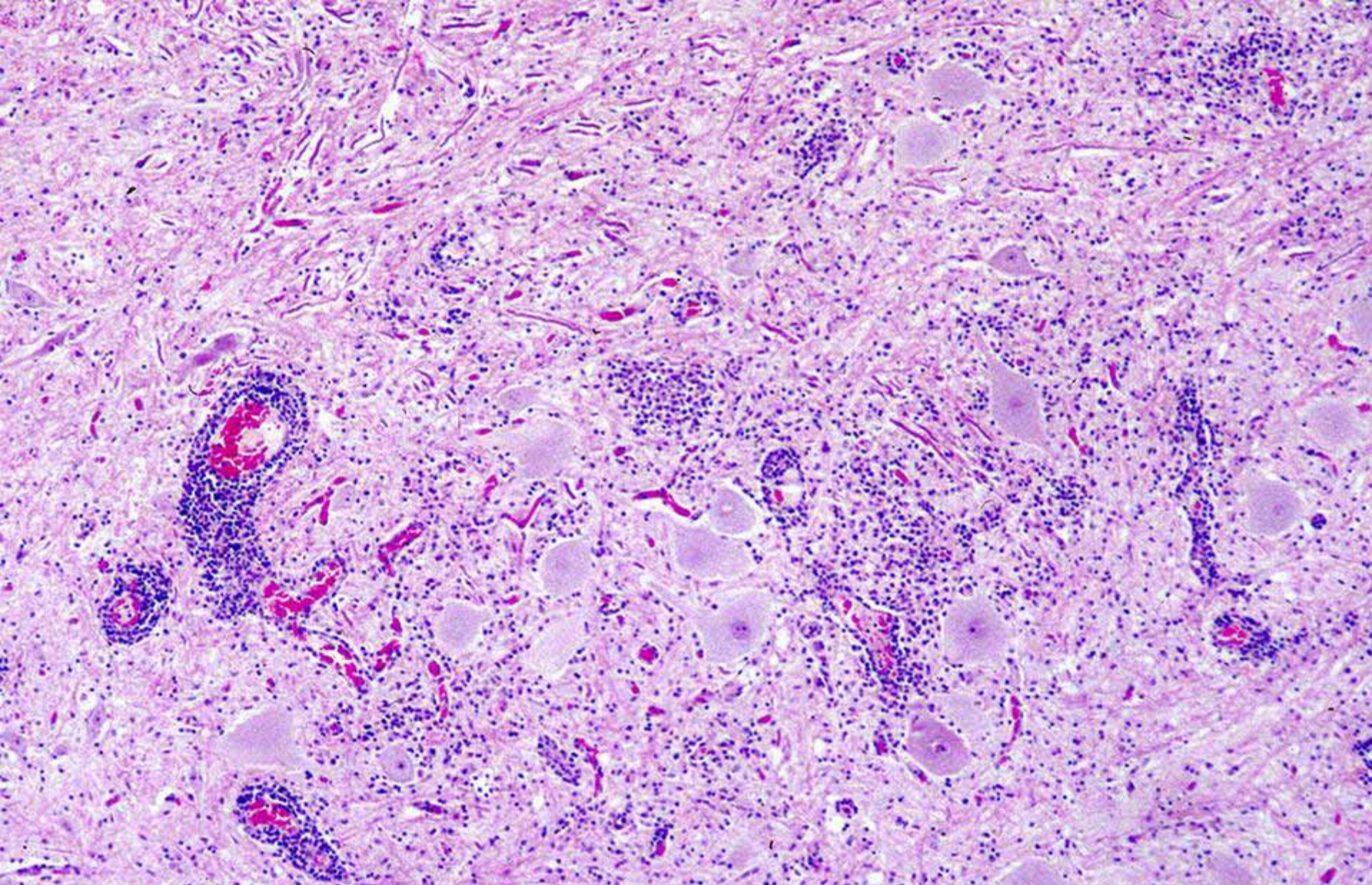


CSF



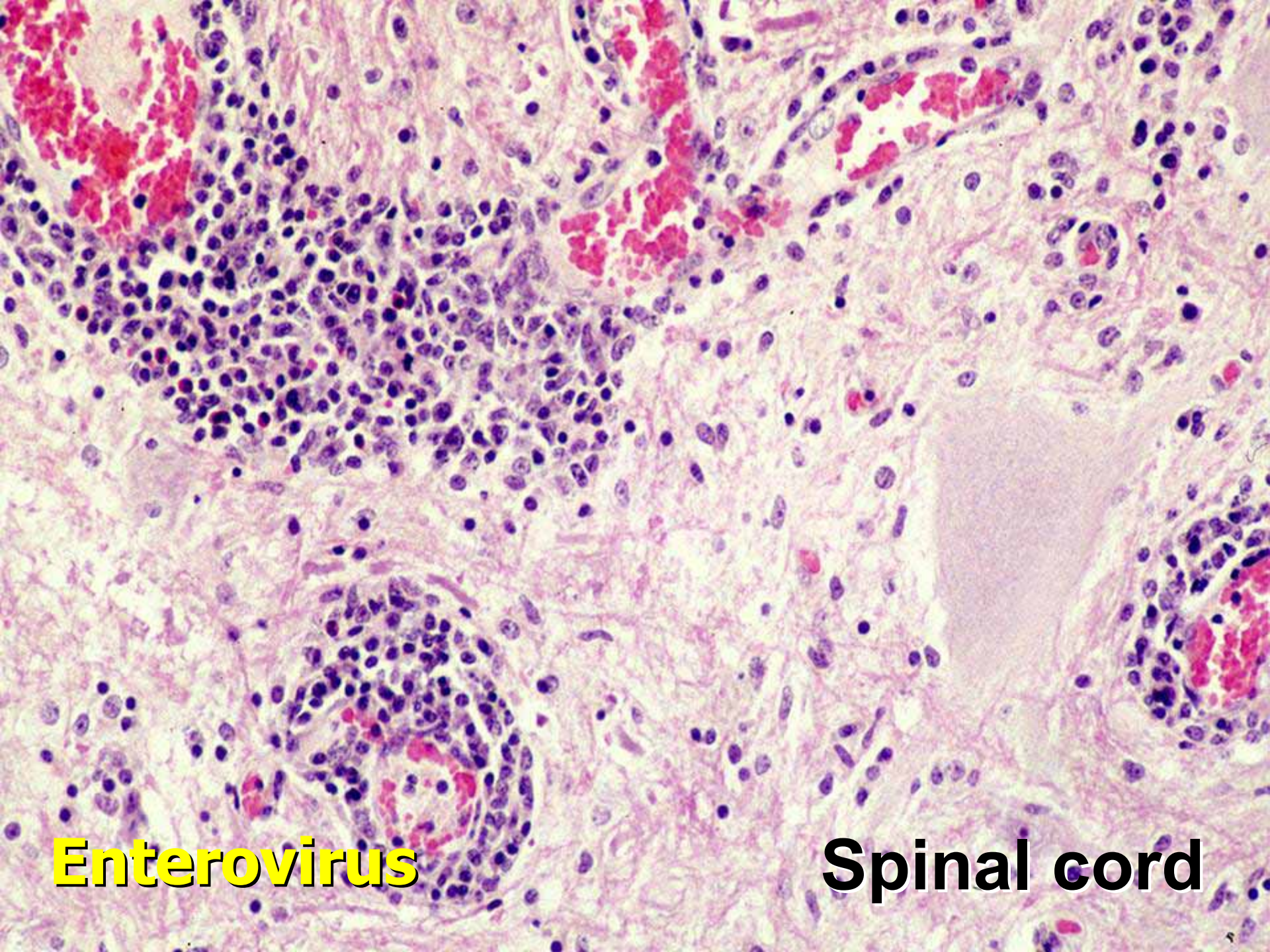
Enterovirus

Spinal cord



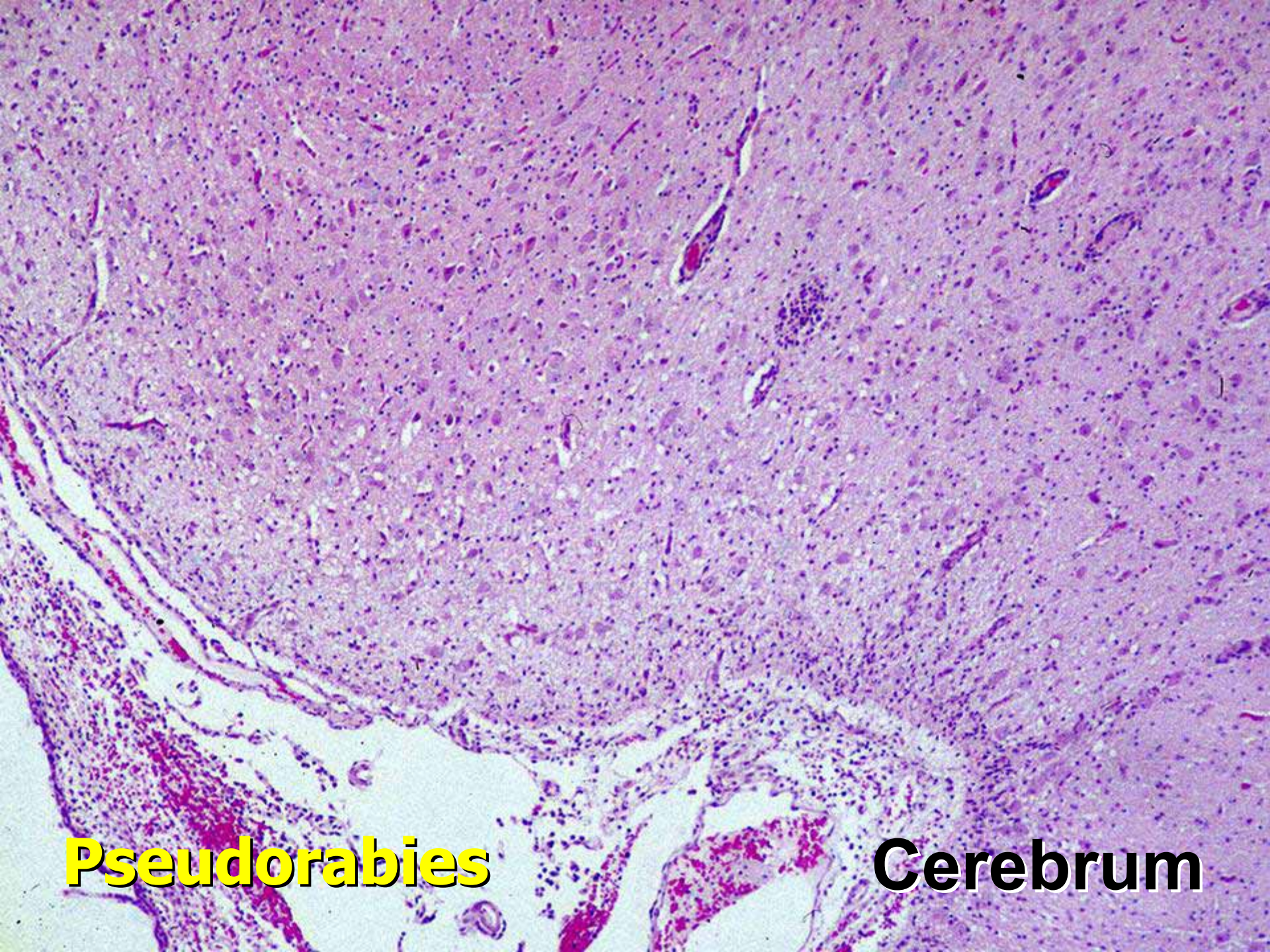
Enterovirus

Spinal cord



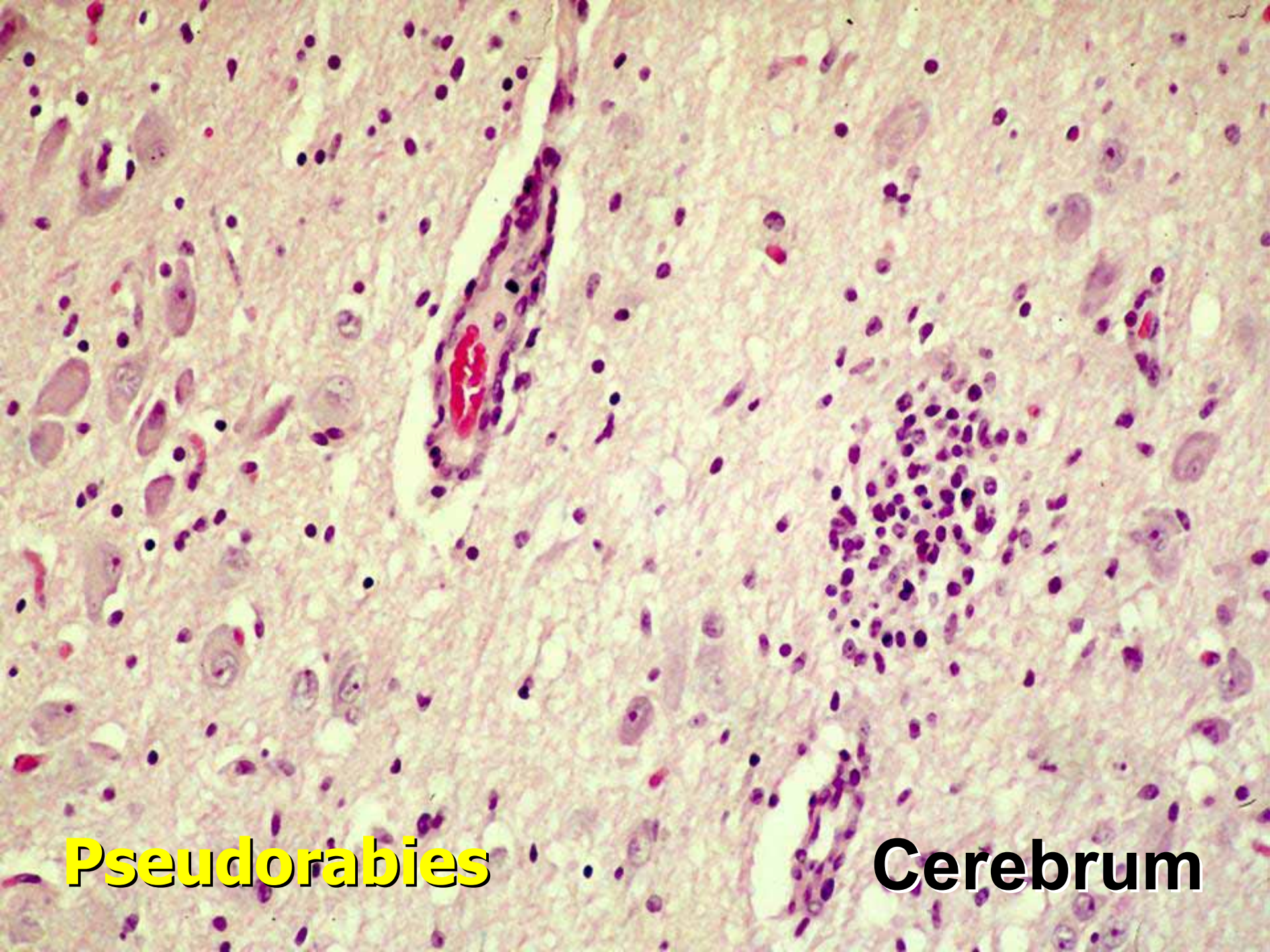
Enterovirus

Spinal cord



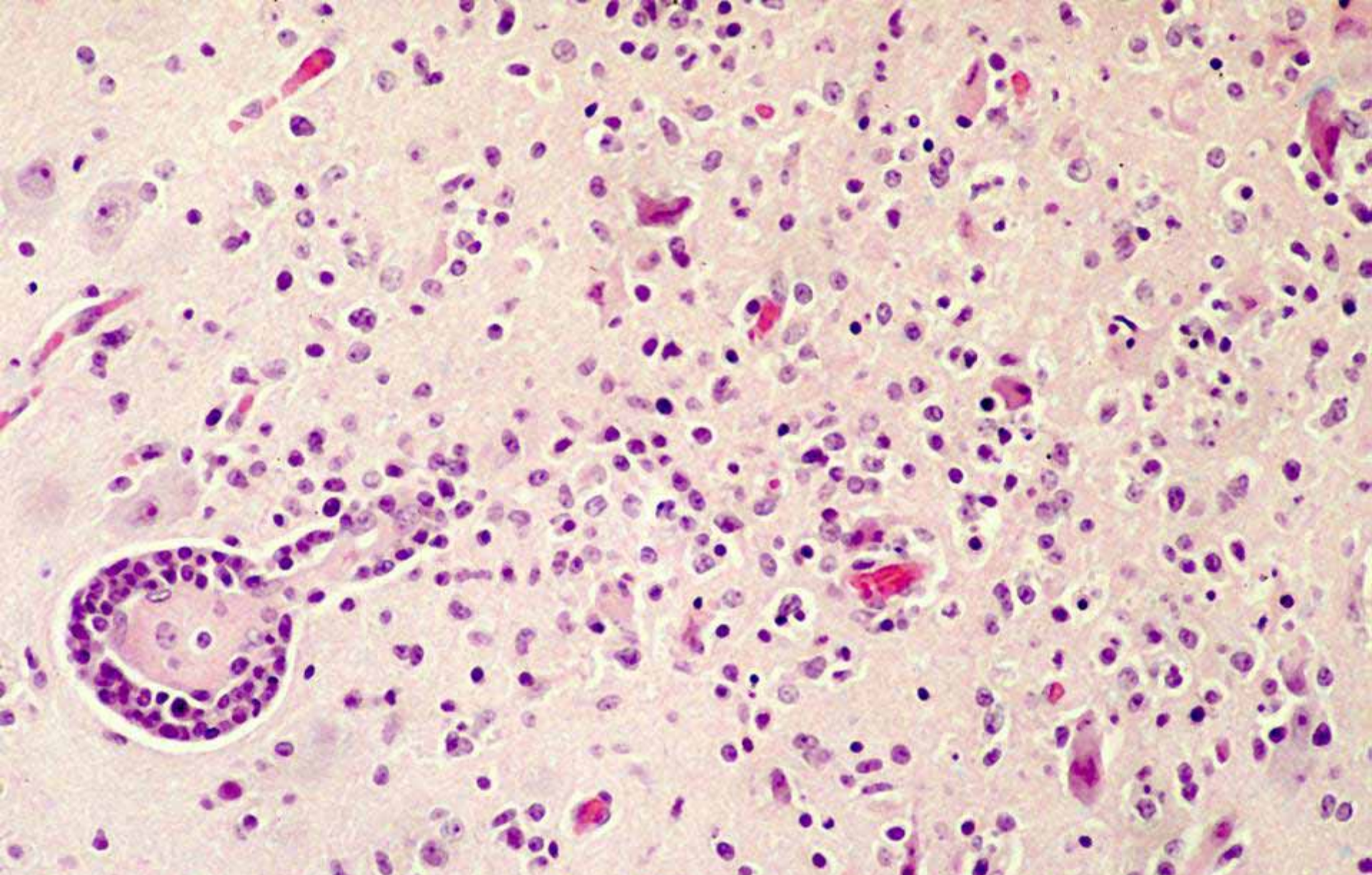
Pseudorabies

Cerebrum



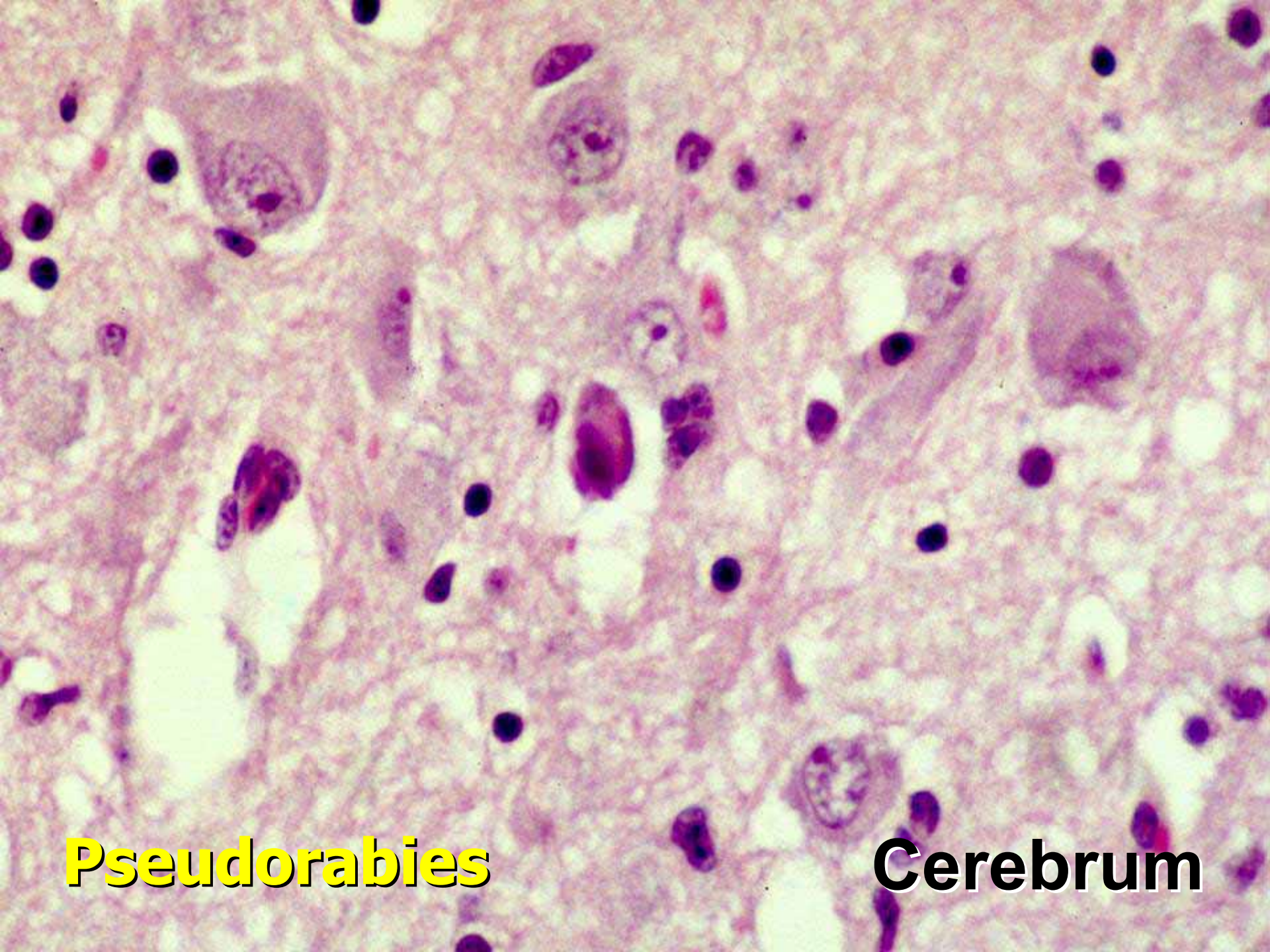
Pseudorabies

Cerebrum



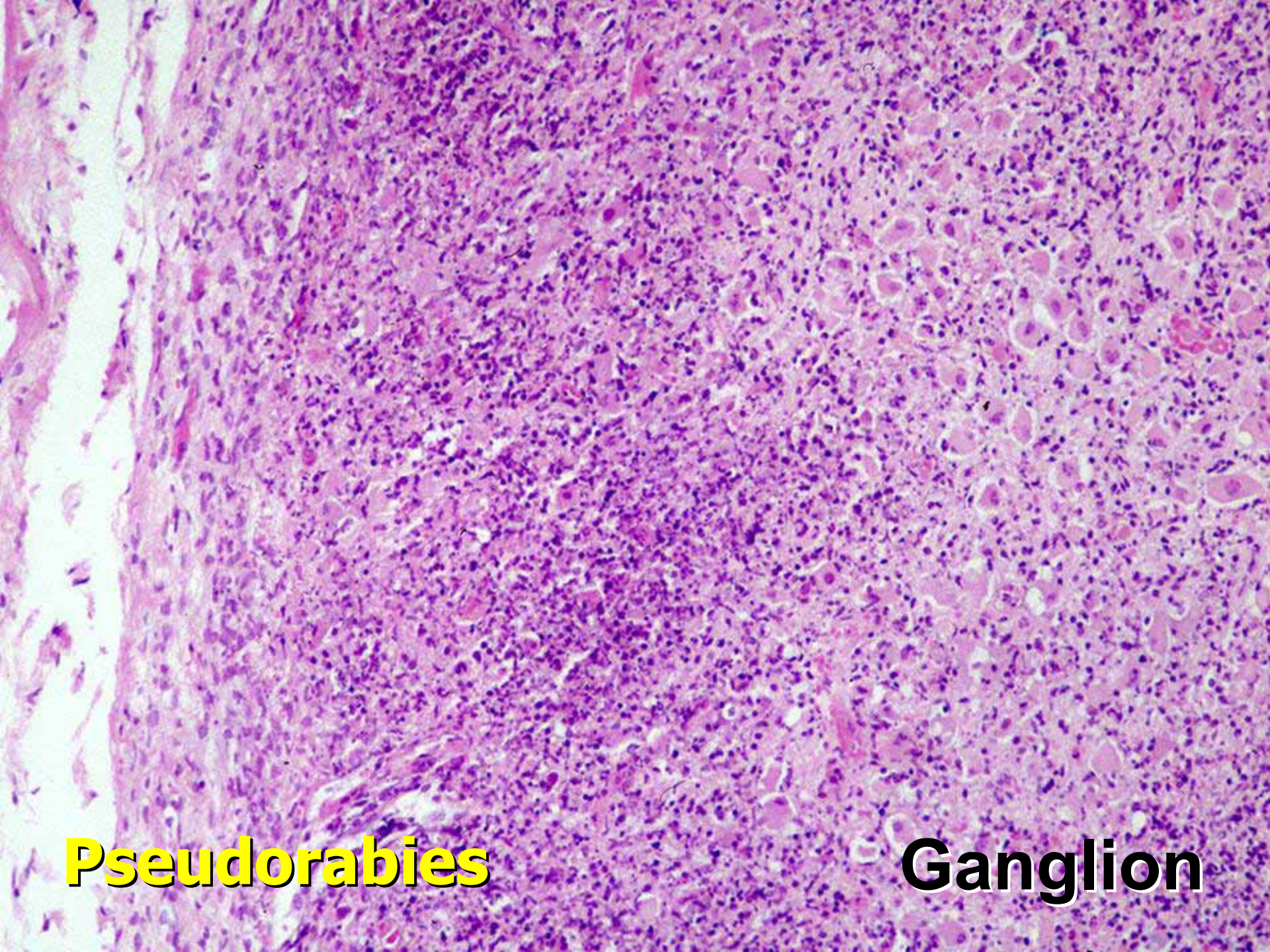
Pseudorabies

Cerebrum



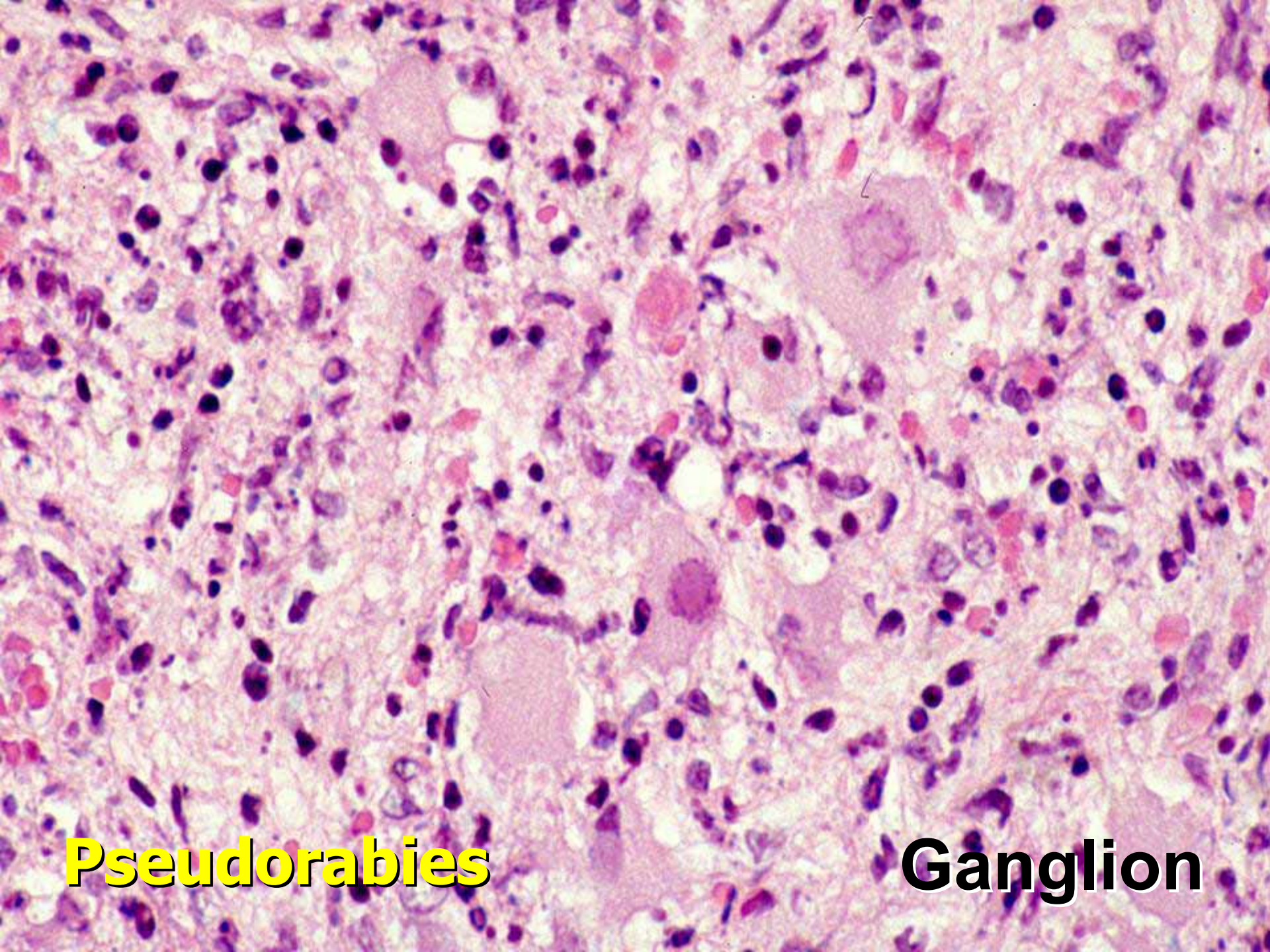
Pseudorabies

Cerebrum



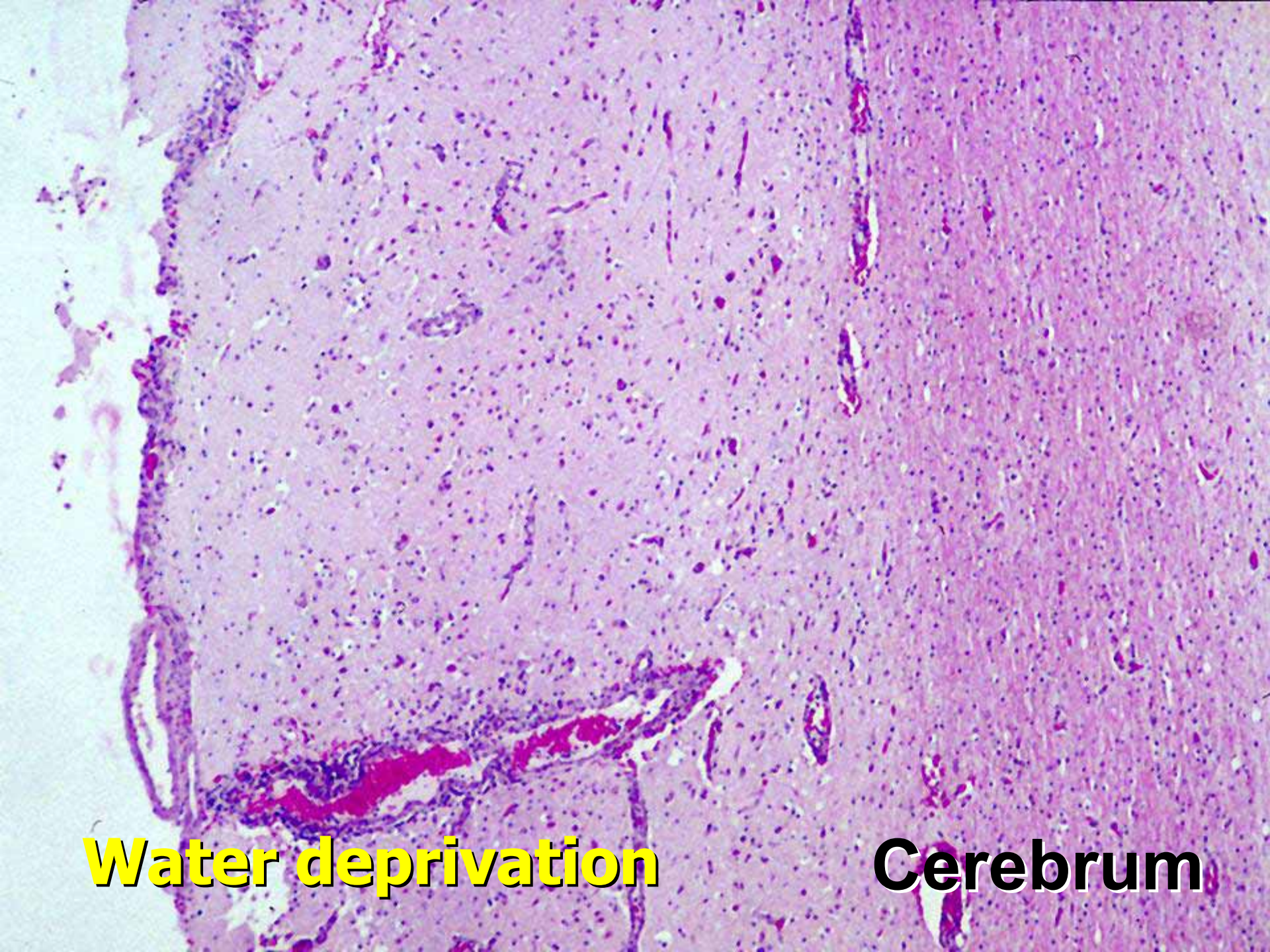
Pseudorabies

Ganglion



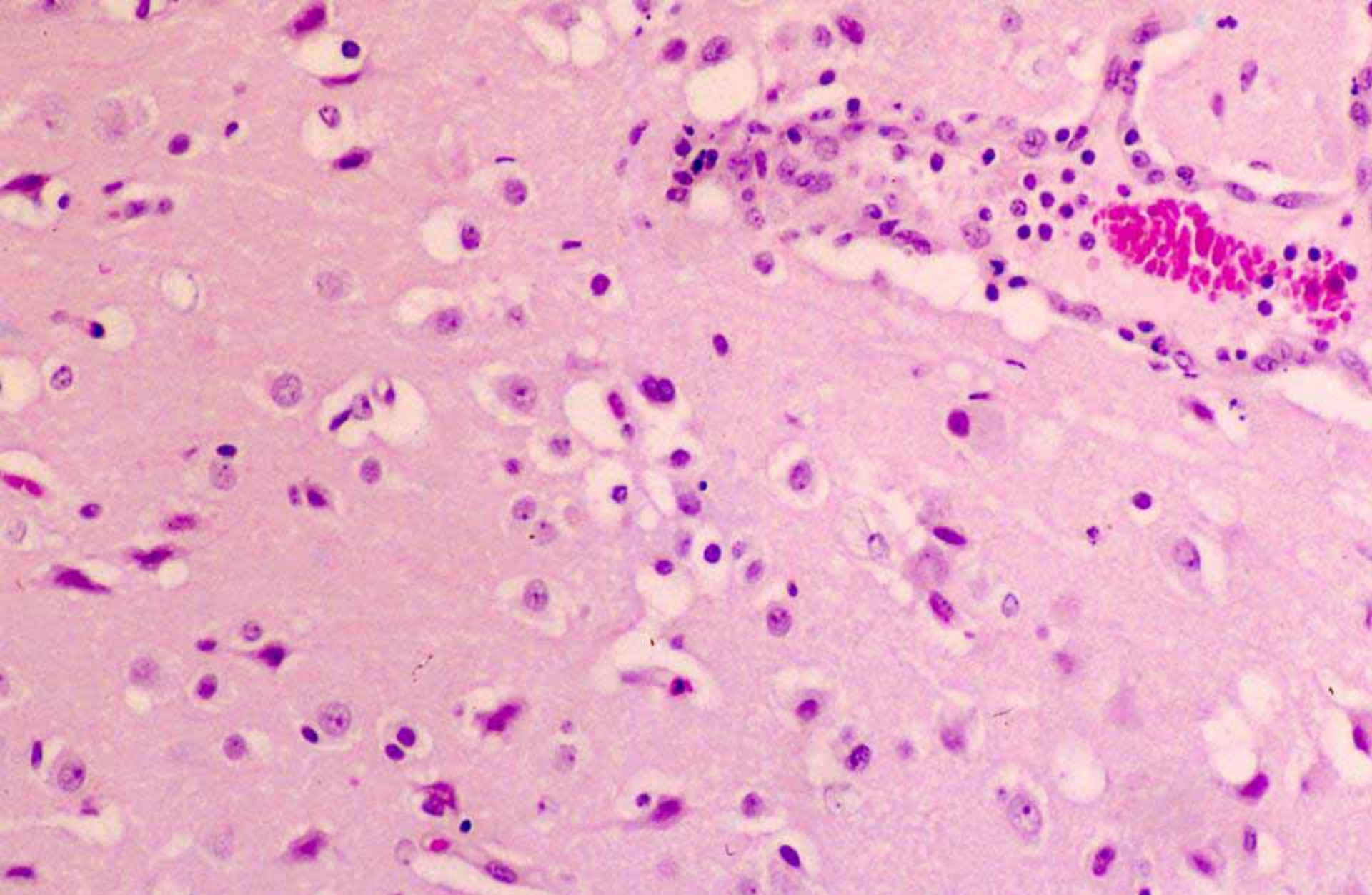
Pseudorabies

Ganglion



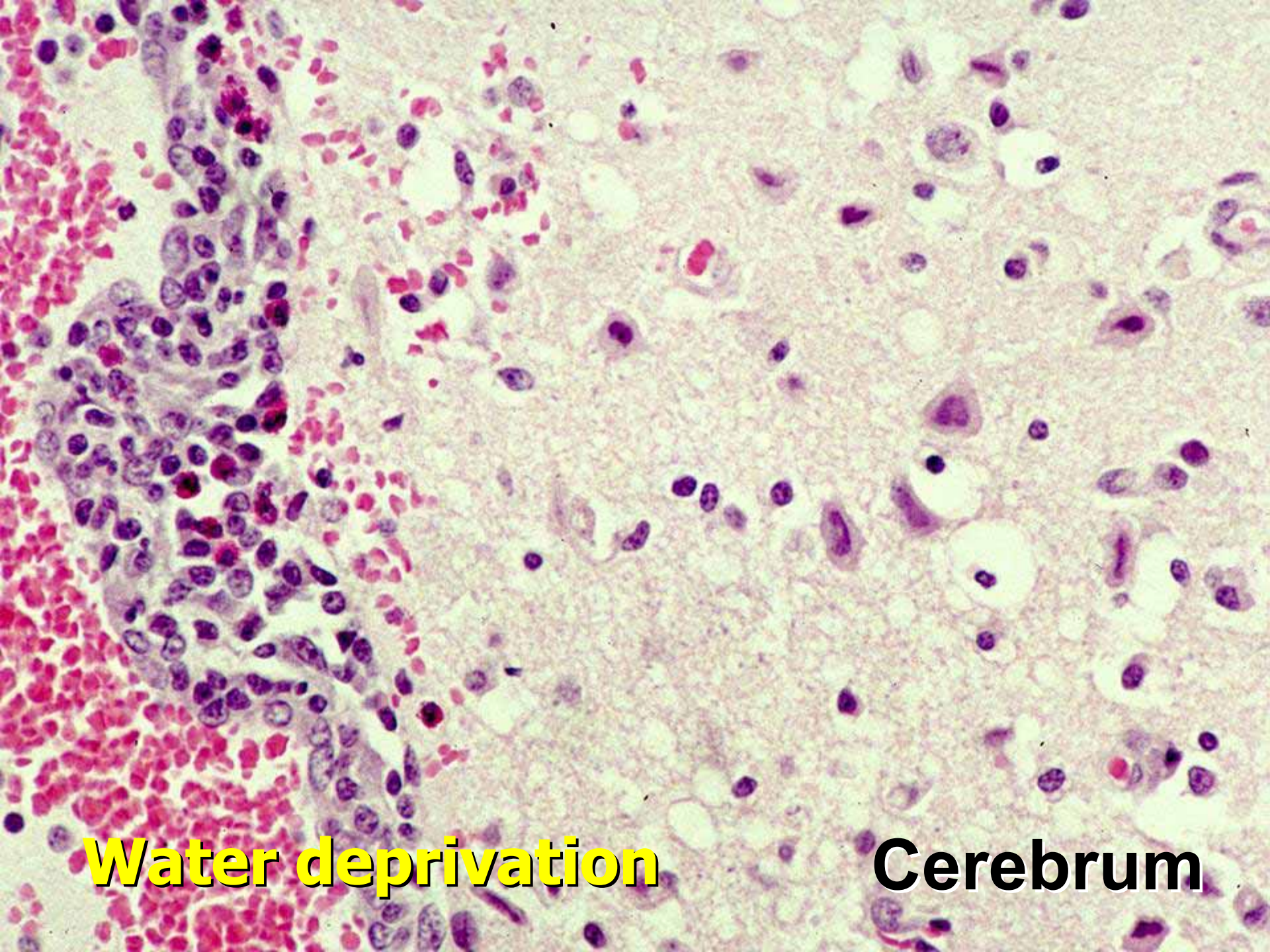
Water deprivation

Cerebrum



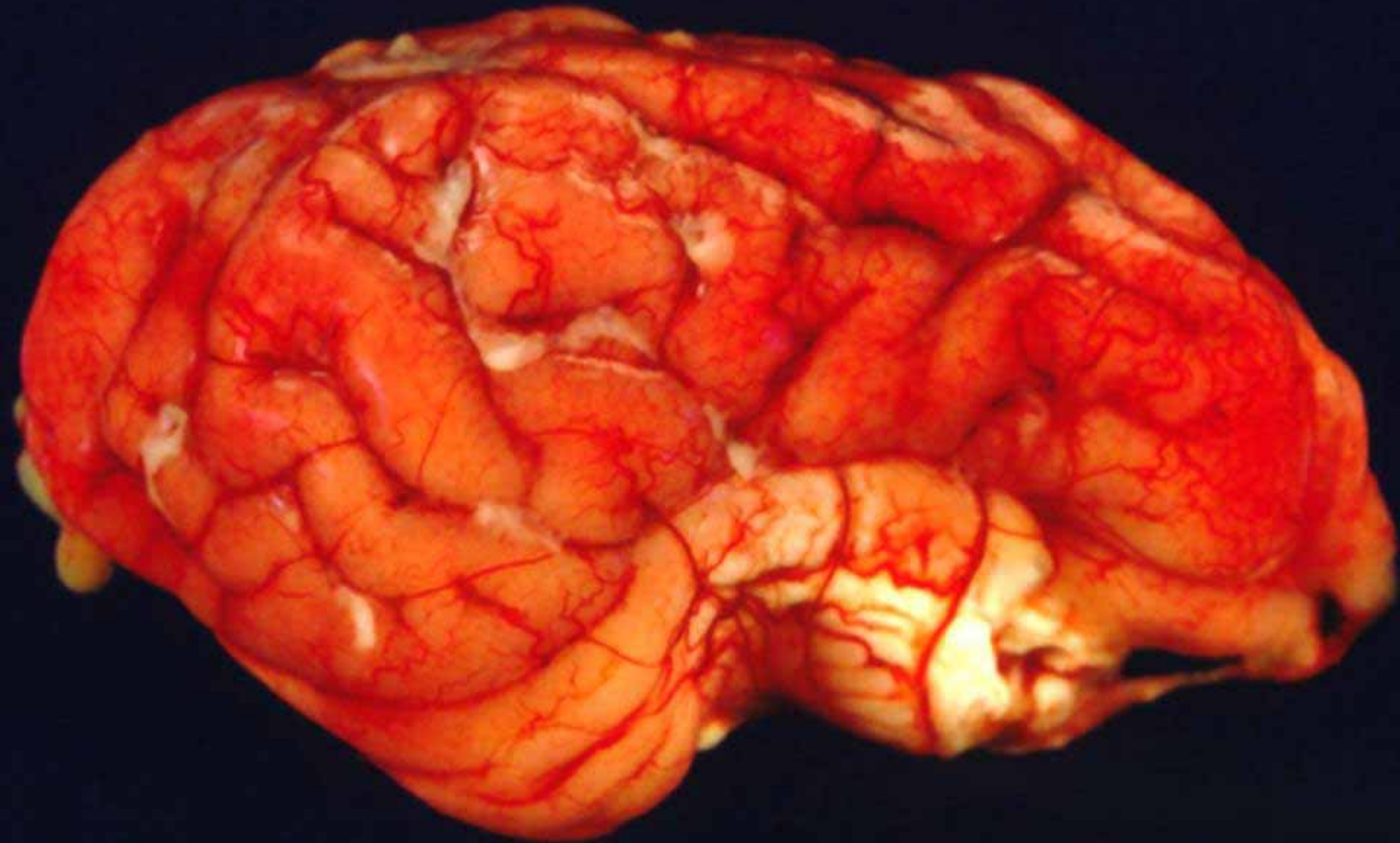
Water deprivation

Cerebrum

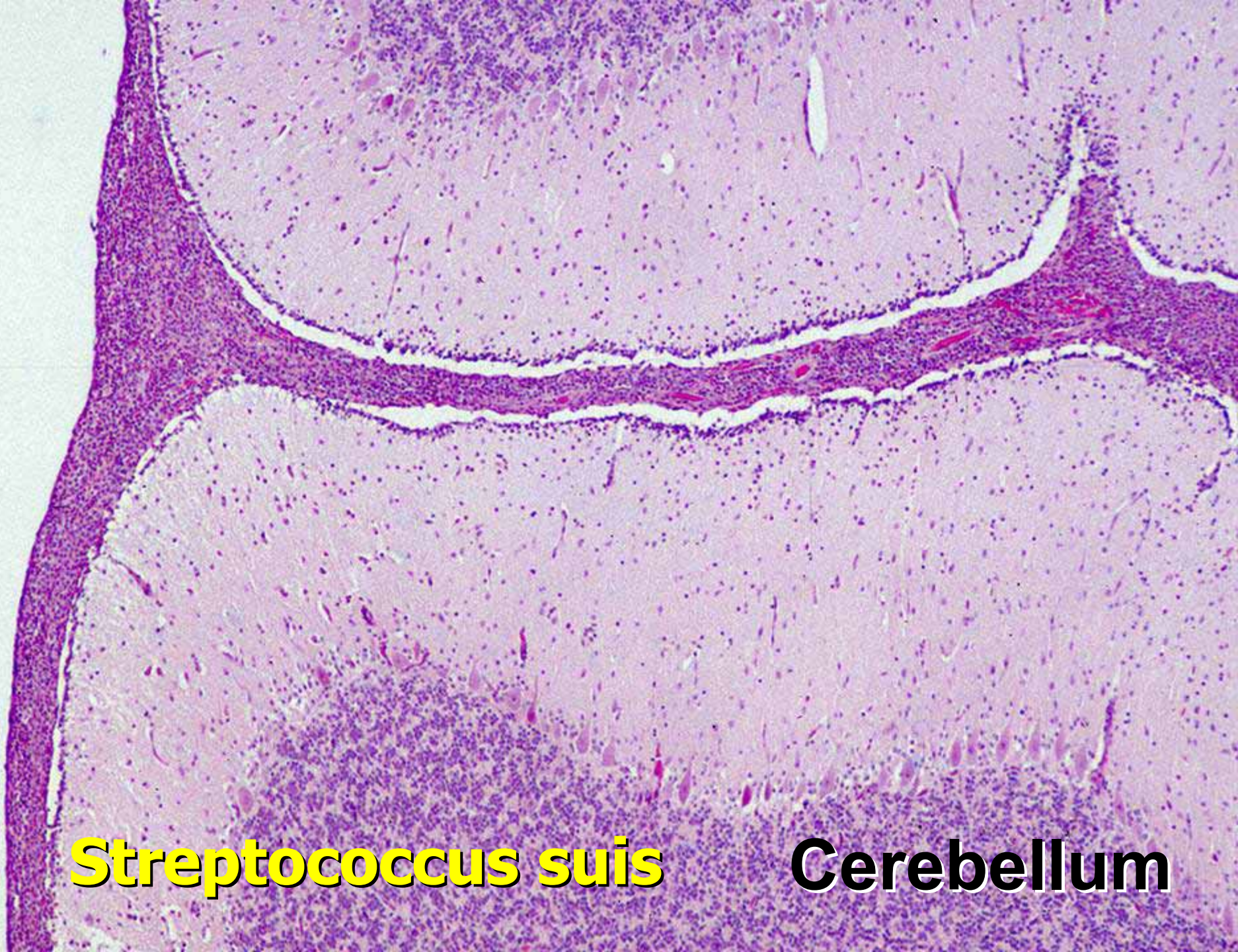


Water deprivation

Cerebrum

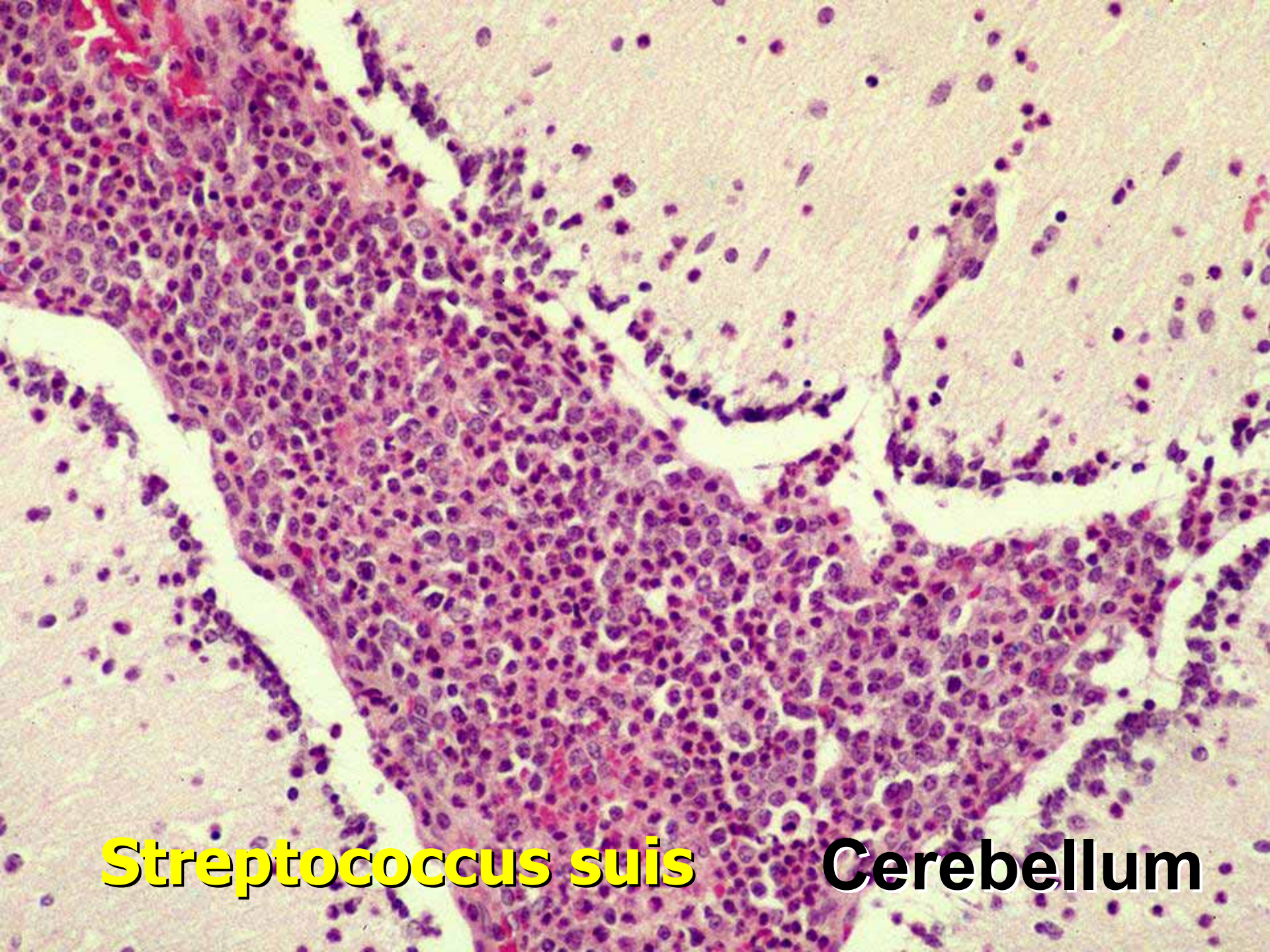


Streptococcus suis



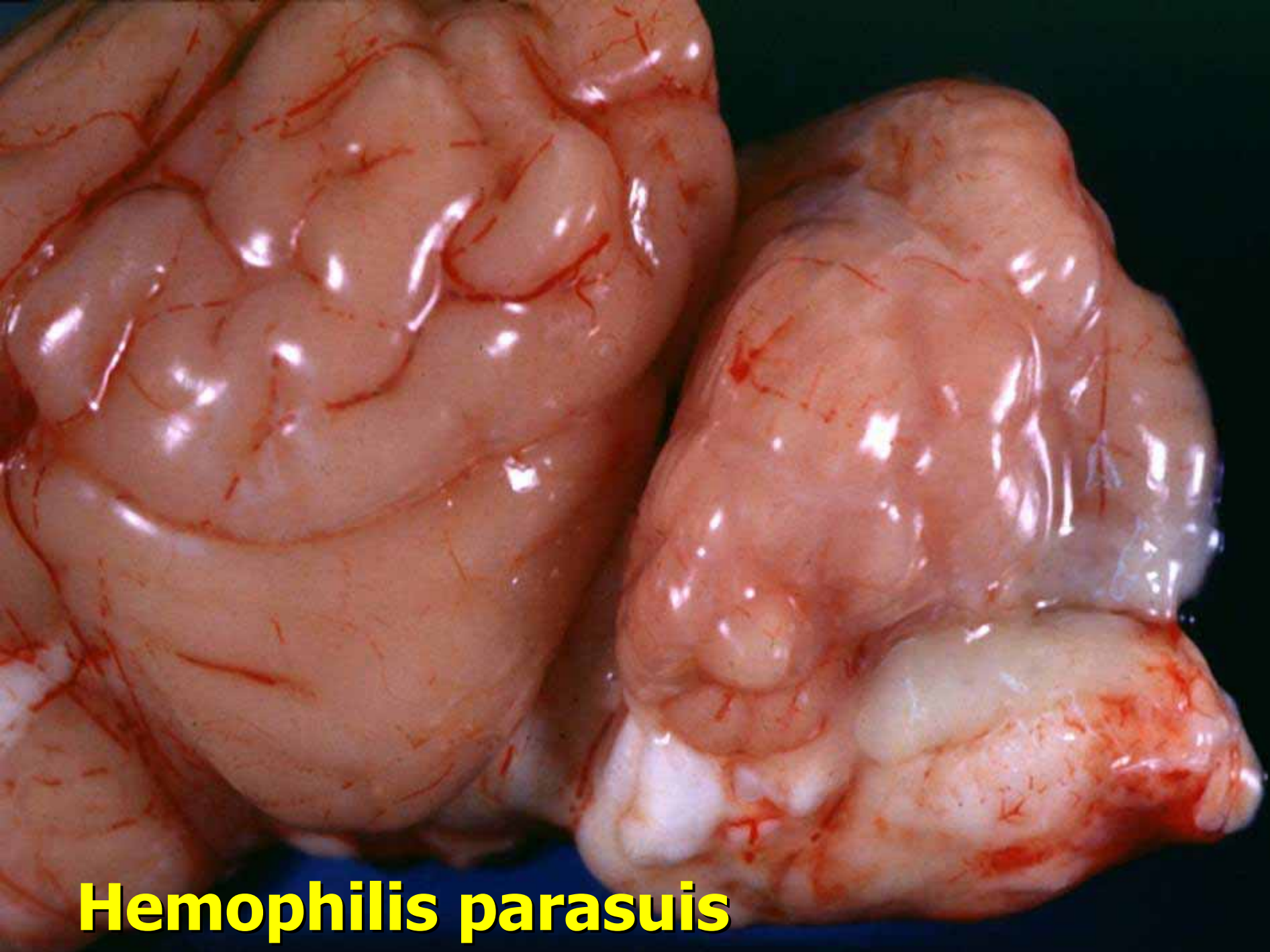
Streptococcus suis

Cerebellum

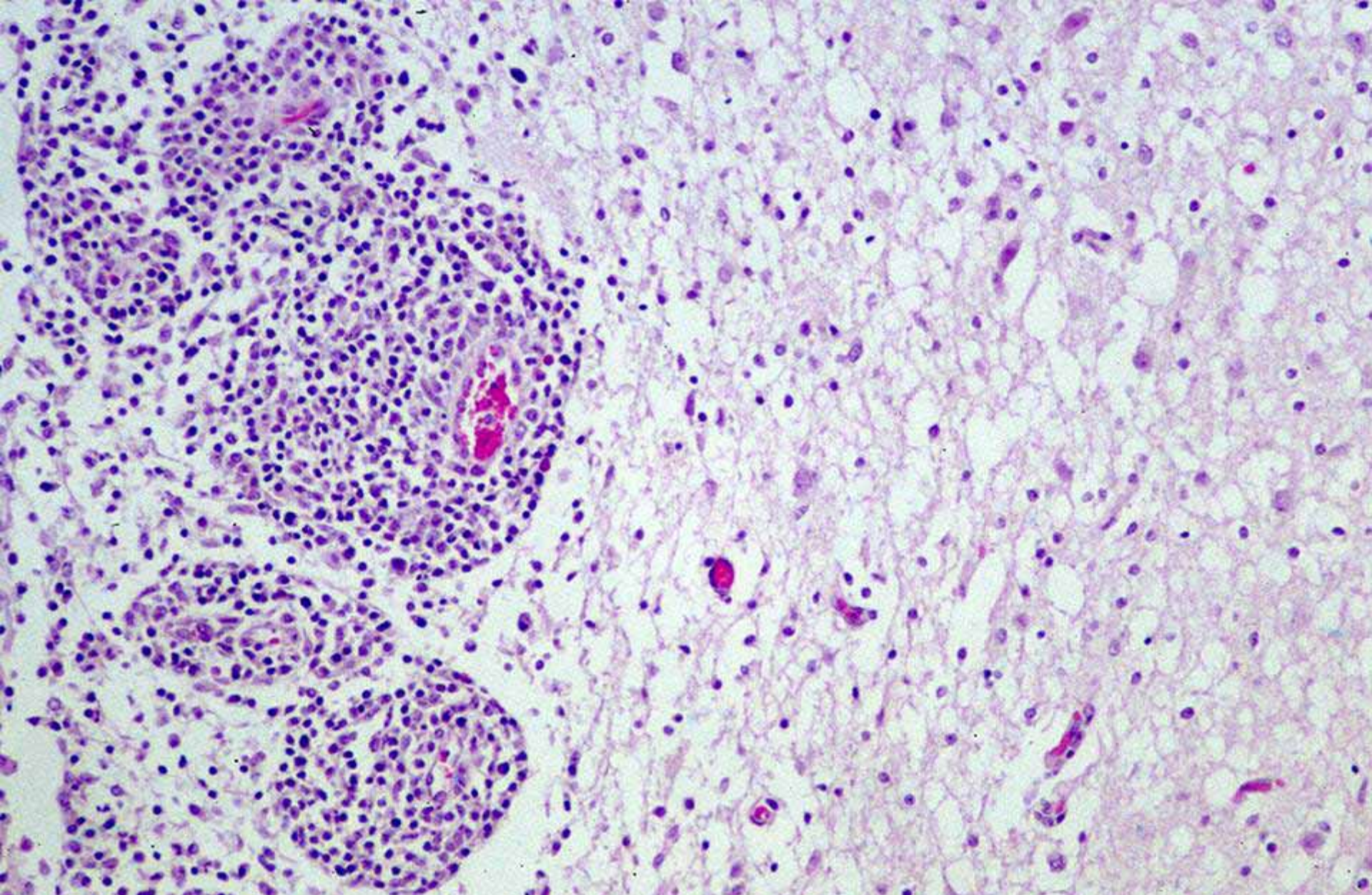


Streptococcus suis

Cerebellum



Hemophilis parasuis



Hemophilis parasuis

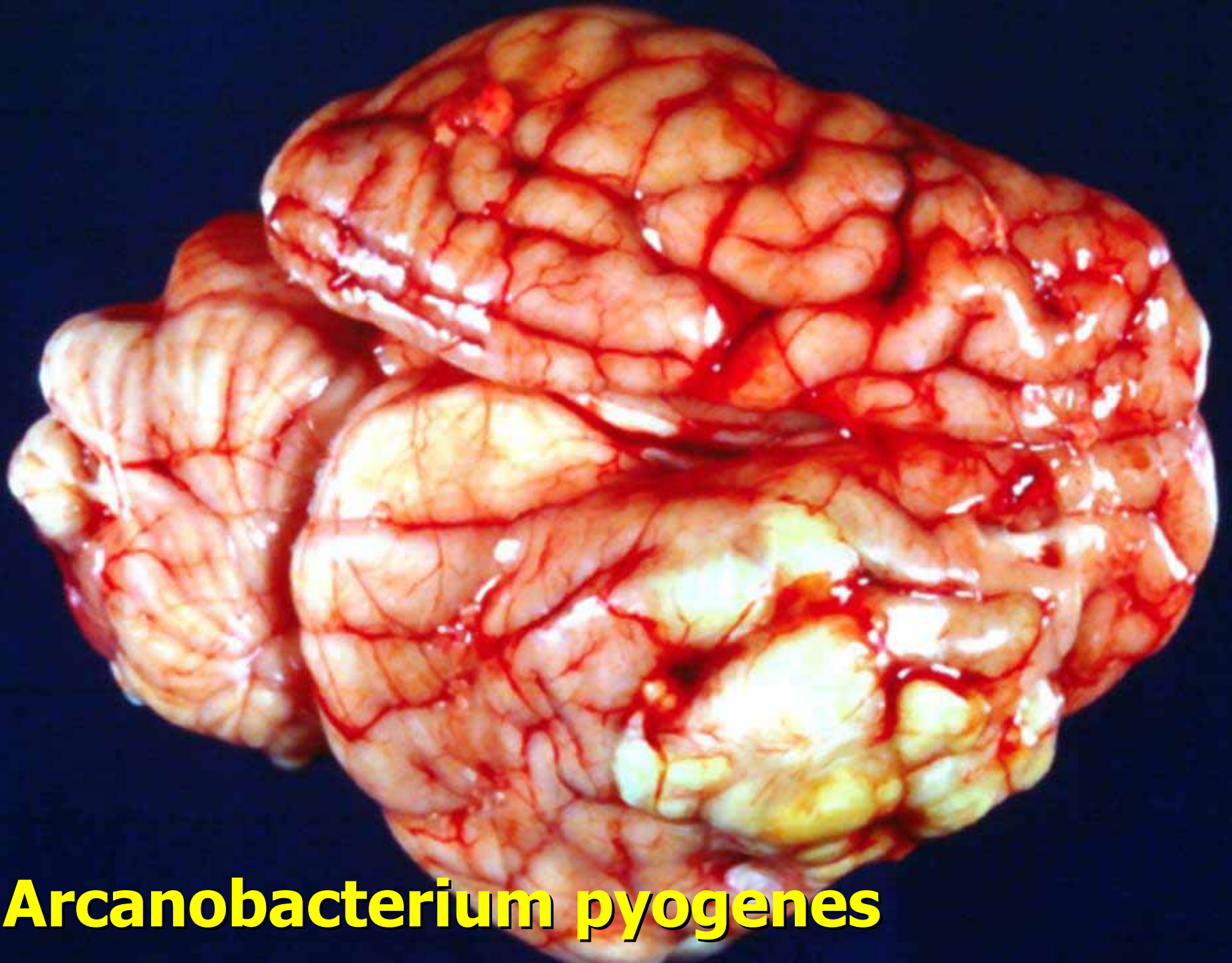
Brainstem

COMMON CAUSES OF BRAIN LESIONS IN SWINE

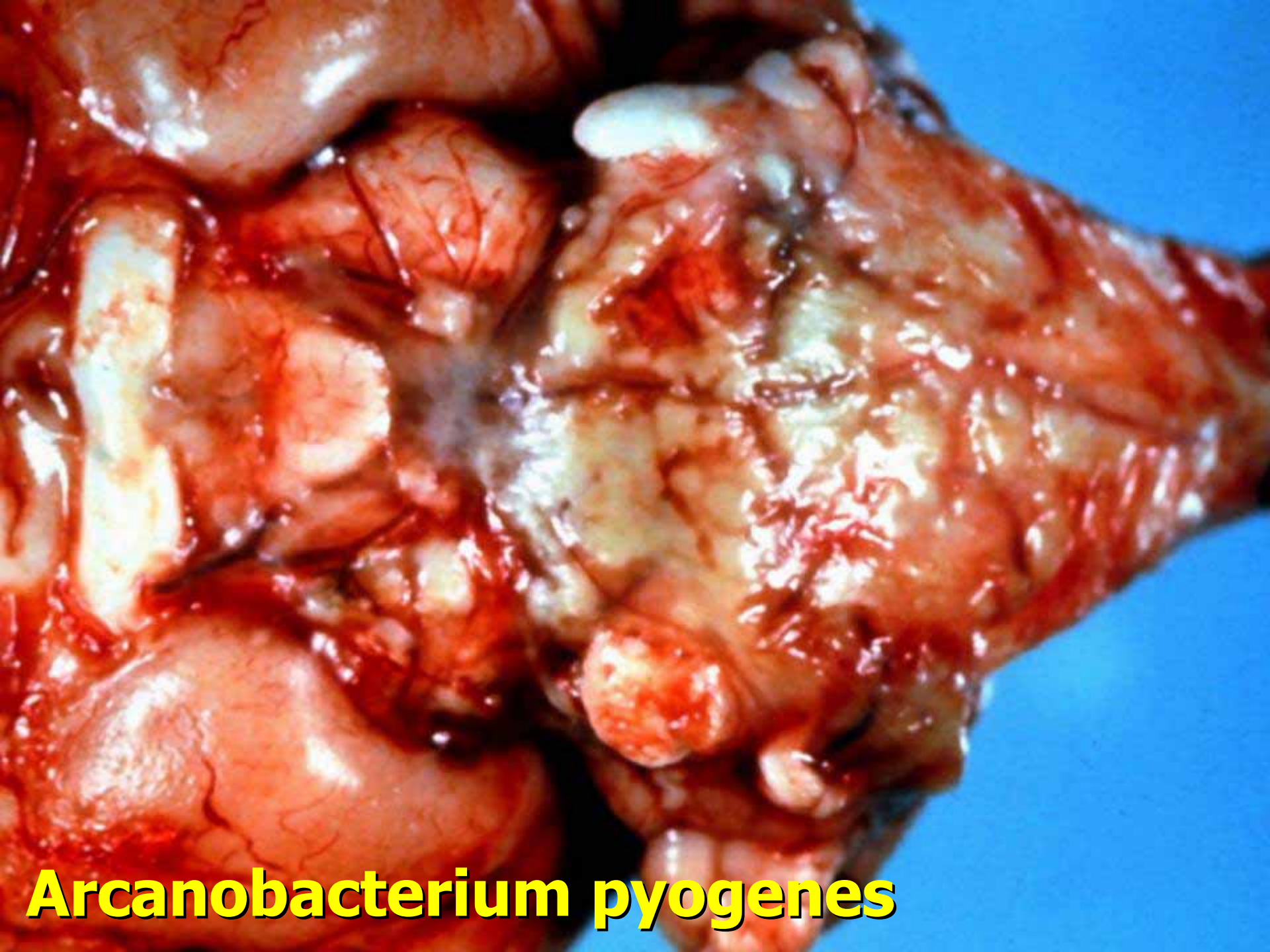
Cause	Lesion	Ages Commonly Affected	Spinal Cord Affected?
Streptococcus suis	Fibrinosuppurative leptomeningitis	3 – 10 weeks	No
Haemophilus parasuis	Fibrinosuppurative leptomeningitis	3 – 10 weeks	No
Water deprivation	Laminar cortical necrosis and eosinophilic leptomeningitis	Any age	No
E. coli – Edema Disease	Segmental vasculopathy and vasculitis with multifocal necrosis	3 – 10 weeks	No
Aujeszky’s virus	Nonsuppurative encephalomyelitis	All ages *	Yes
Enterovirus – Teschen virus	Nonsuppurative encephalomyelitis	All ages	Yes
Classical swine fever virus	Segmental vasculitis and nonsuppurative encephalomyelitis	All ages	Yes

COMMON CAUSES OF ONLY SPINAL CORD LESIONS IN SWINE

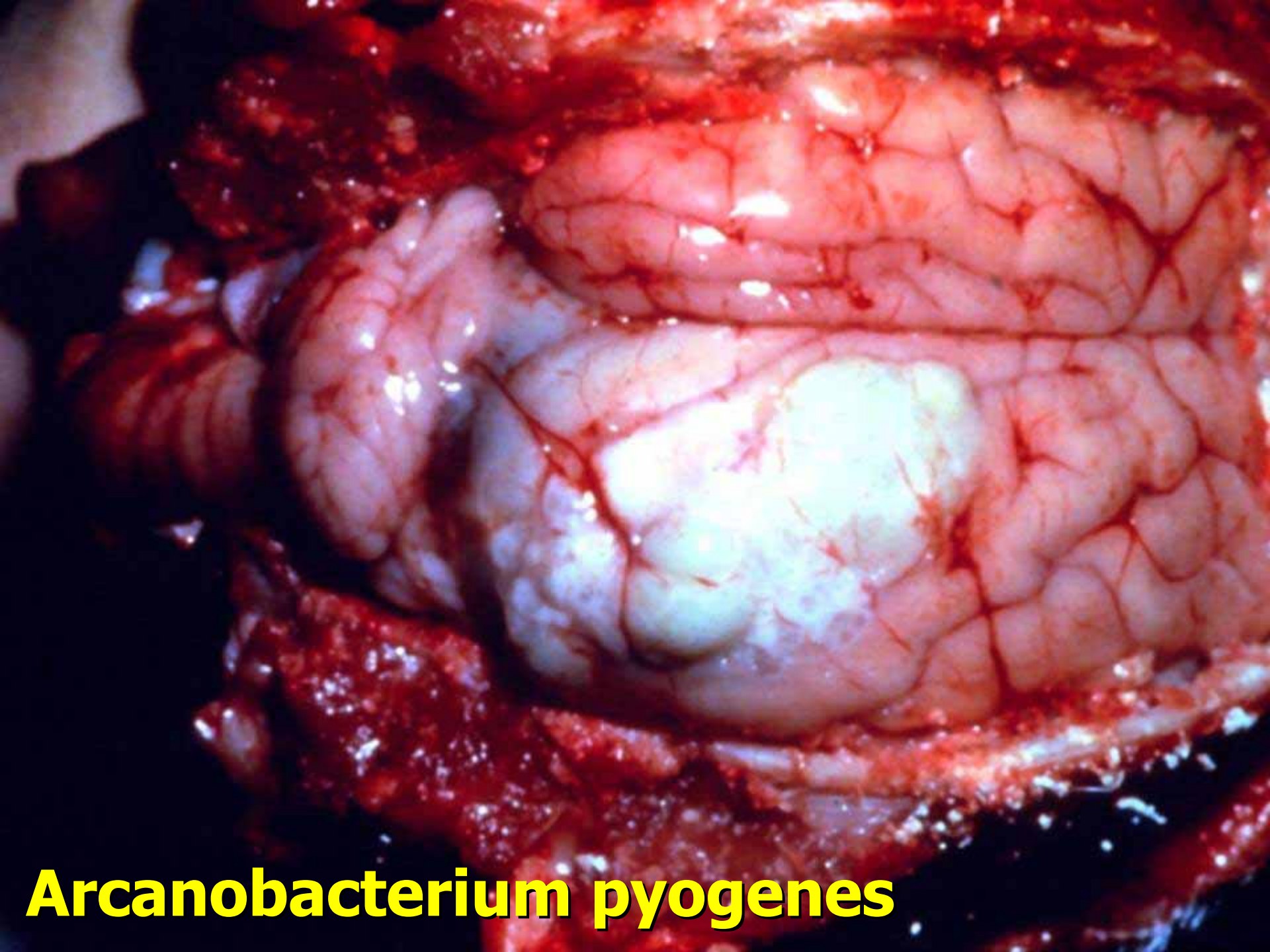
Cause	Lesion	Ages Commonly Affected
Selenium intoxication	Poliomyelomalacia	Weaned or older
Enteroviruses – Talfan virus	Nonsuppurative poliomyelitis	2 – 5 months
Vertebral and cord abscesses	Focal suppurative myelitis	Any age



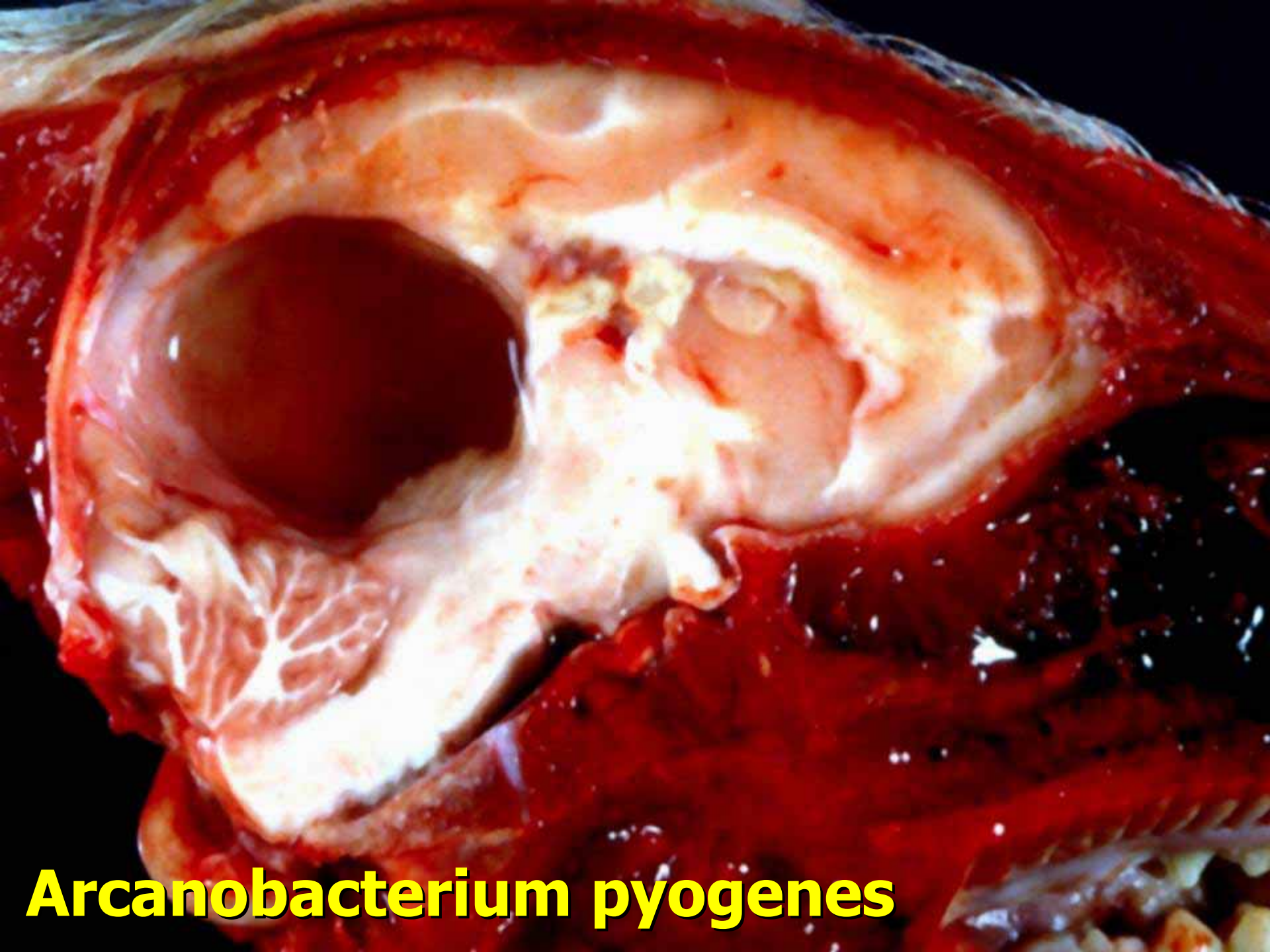
Arcanobacterium pyogenes



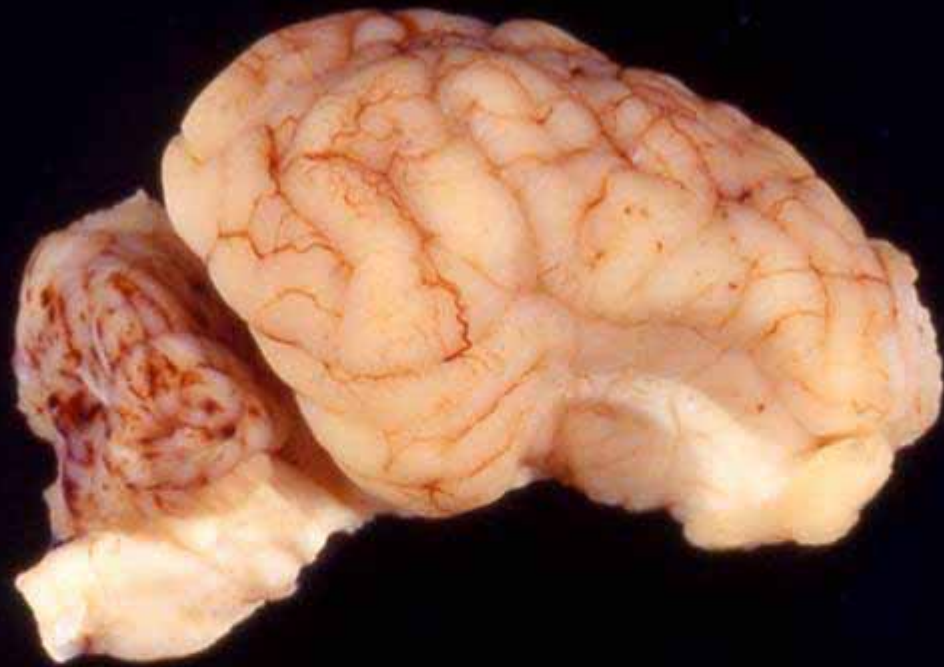
Arcanobacterium pyogenes



Arcanobacterium pyogenes



Arcanobacterium pyogenes



Actinobacillus suis



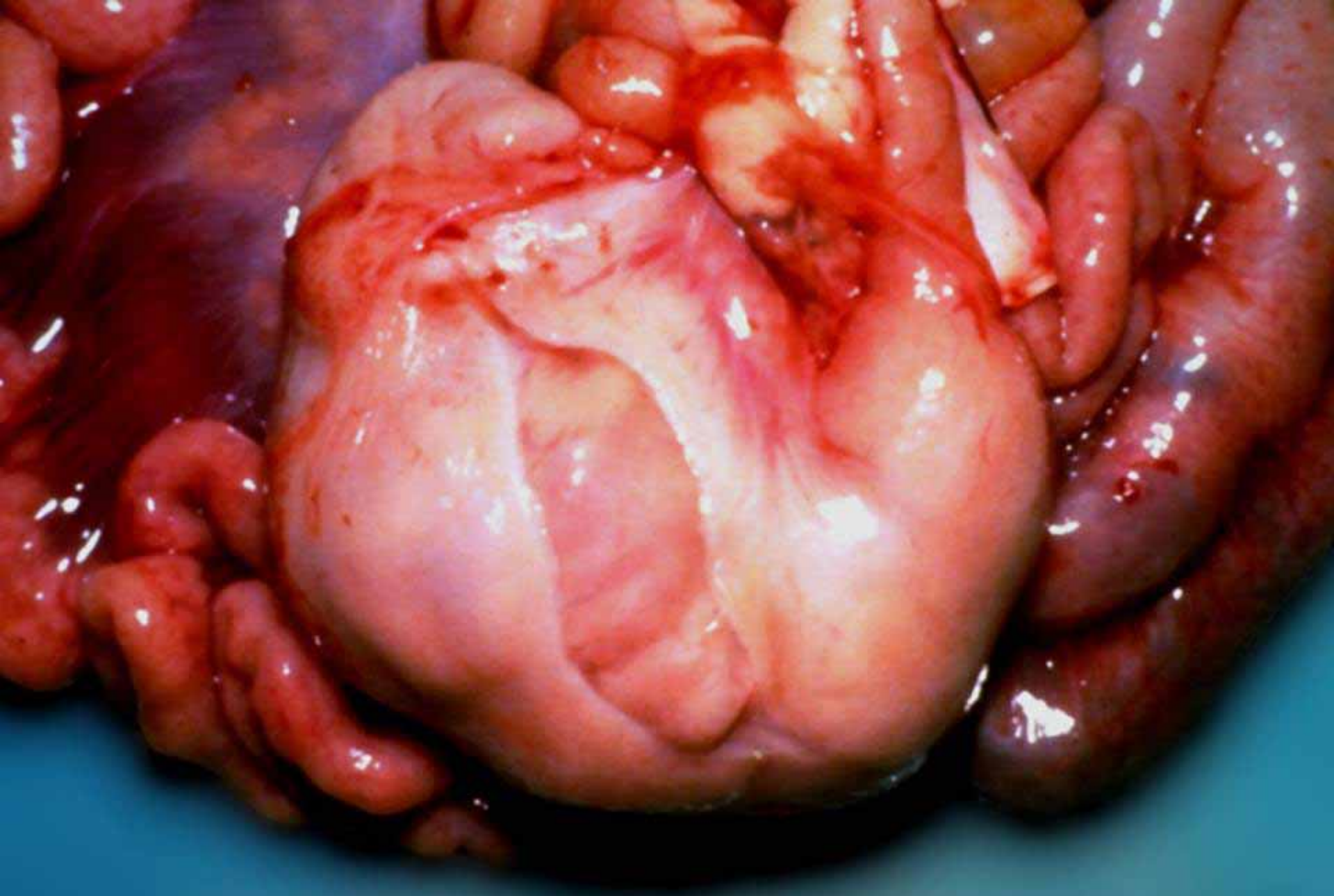
Mycoplasma hyorhinis

ETEEC: Edema Disease

- **Post-weaning, sporadic epizootics**
- **Hemolytic; O138, O139, O141**
- **F18ab (F107) fimbria, S.I. Only**
- **SLTv induces angiopathy, +/- Sta, STb**
- **Delay between colonization and clinical disease of 7-9 days**
- **Edema: eyelids, subcutis of face, mesocolon, gastric wall, brain**



Edema Disease



Edema Disease



Edema Disease



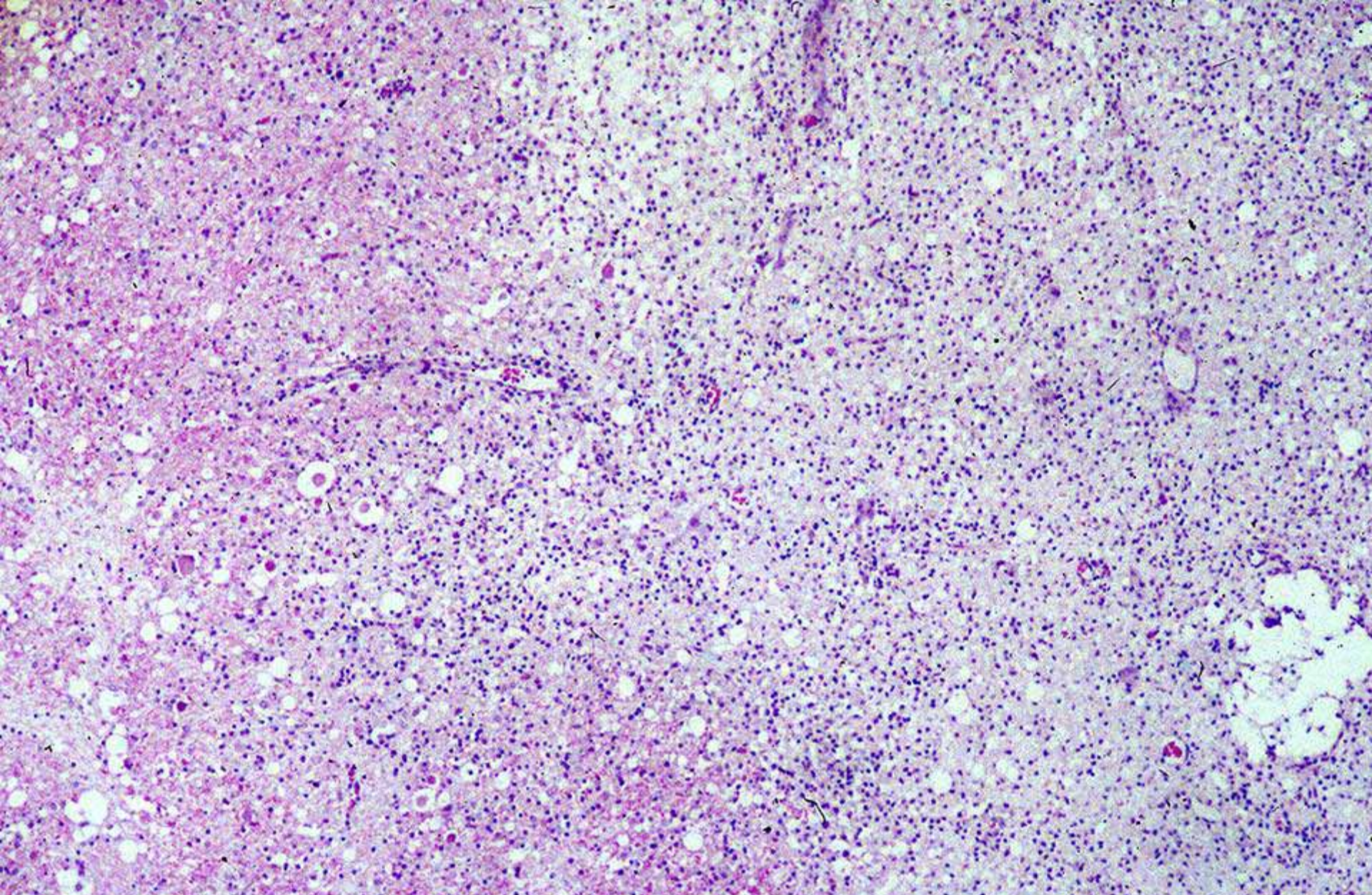
Edema Disease



Edema Disease

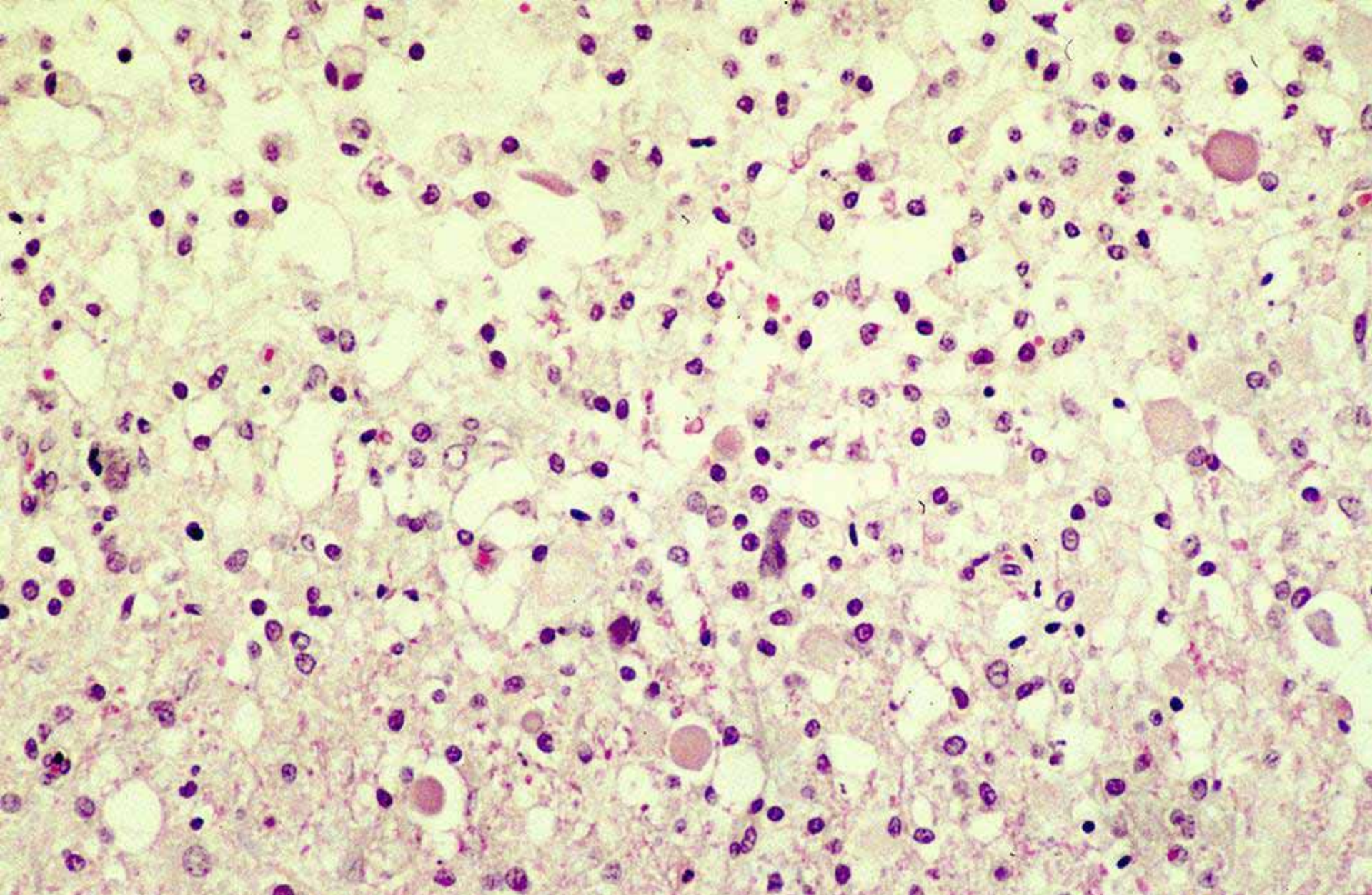


Edema Disease



Edema Disease

Brainstem

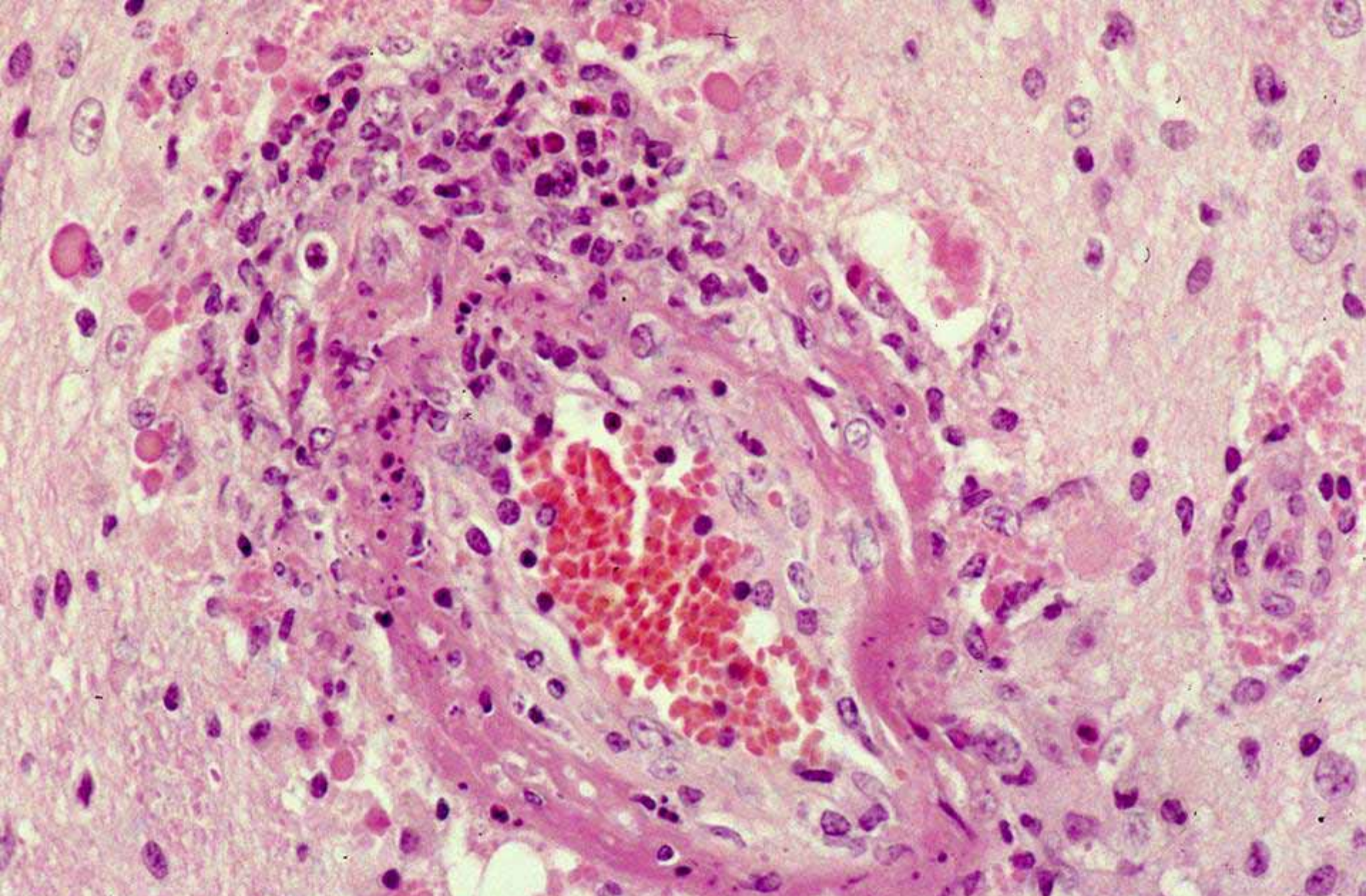


Edema Disease

Brainstem

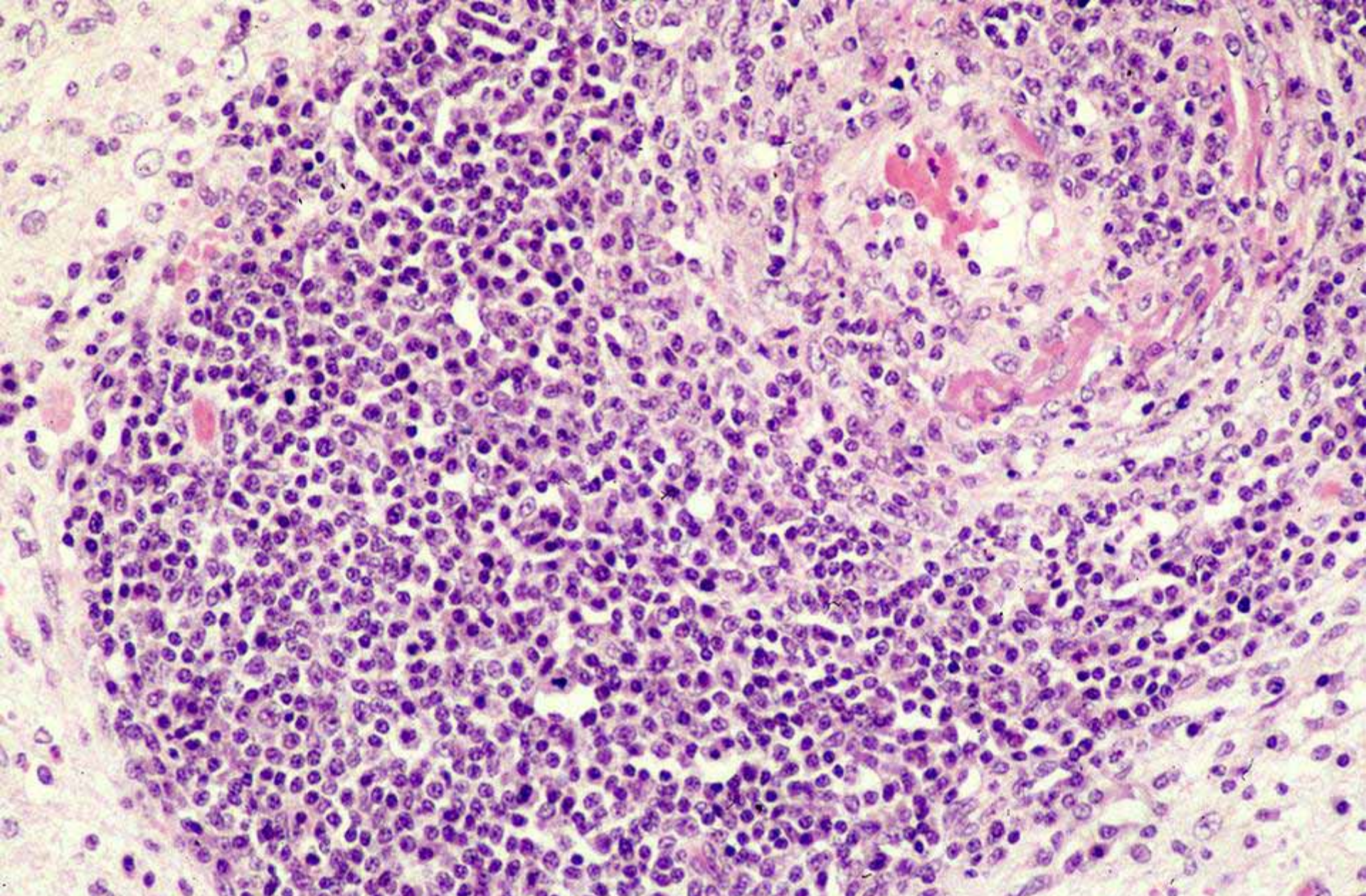


Edema Disease



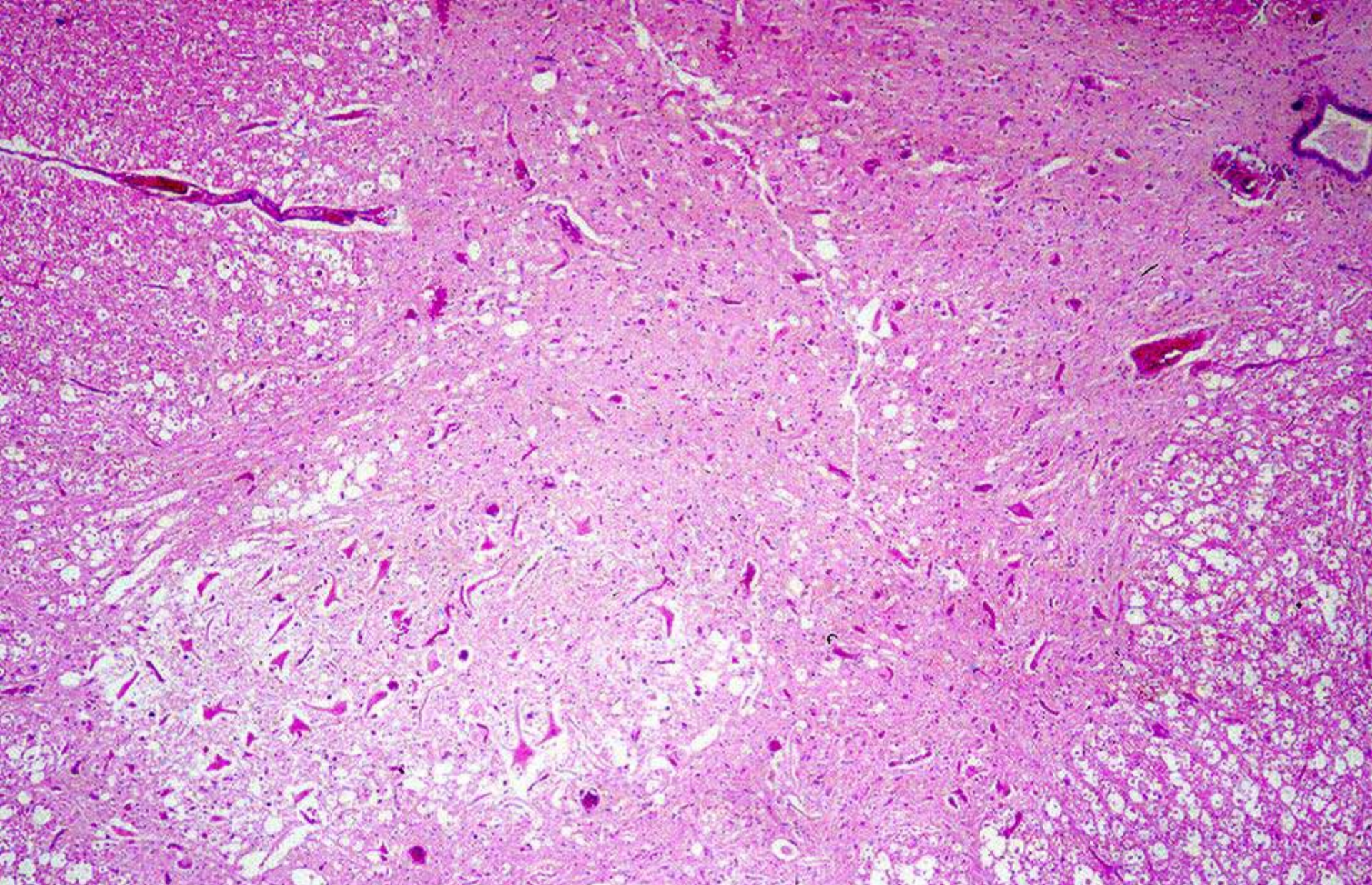
Edema Disease

Brainstem



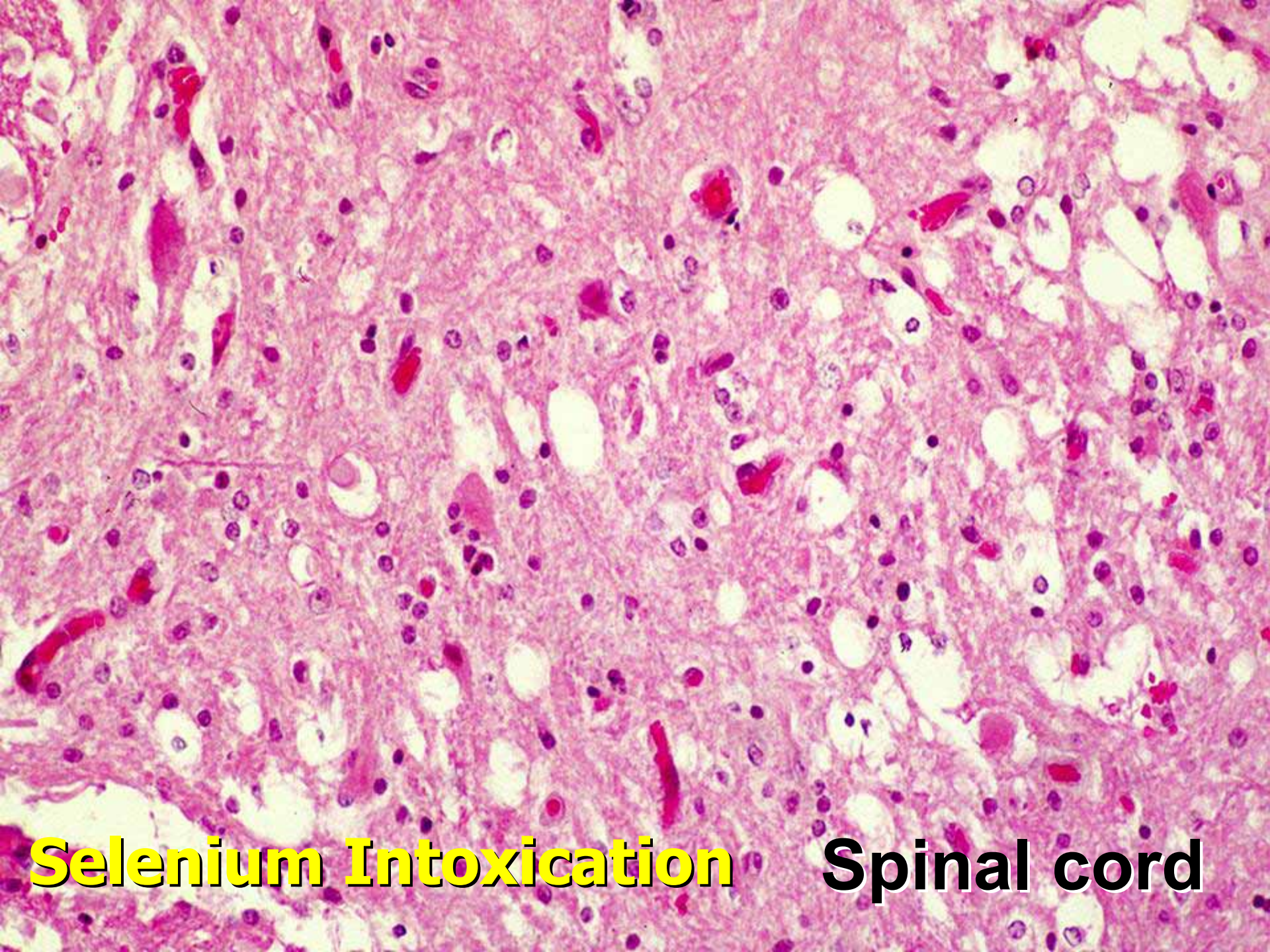
Edema Disease

Brainstem



Selenium Intoxication

Spinal cord



Selenium Intoxication

Spinal cord