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Brain of a puppy

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Swine Pathology

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Contributor

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Signalment

5-month-old female Labrador retriever puppy (*Canis familiaris*)

History

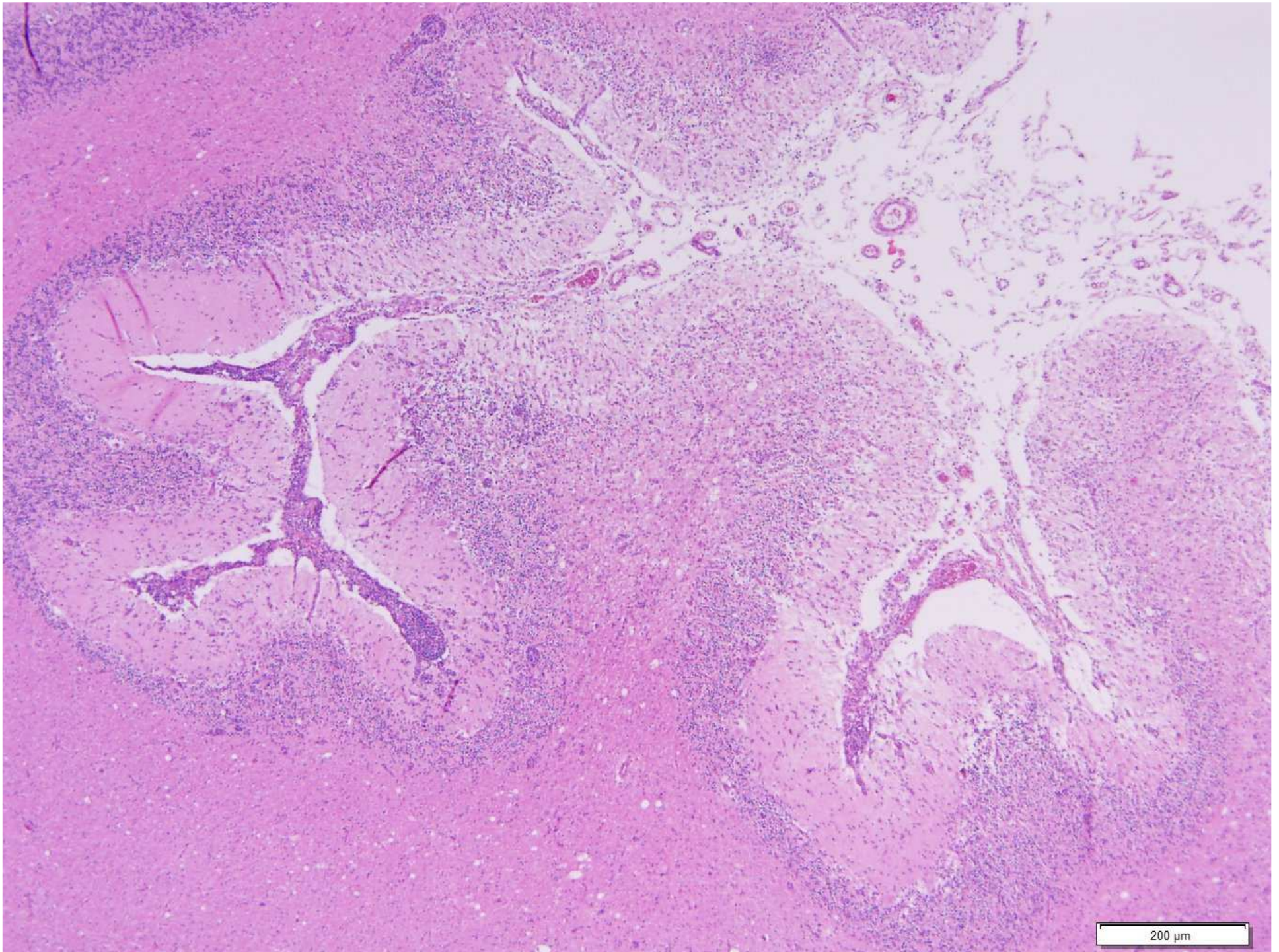
Progressive abnormal gait and ataxia (3 m), mild to moderate tetra paresis, mild proprioceptive ataxia in the pelvic limbs, reduced flexion all limbs, bilateral reduction of patellar reflex, Cerebellar atrophy by MRI

Gross Pathology

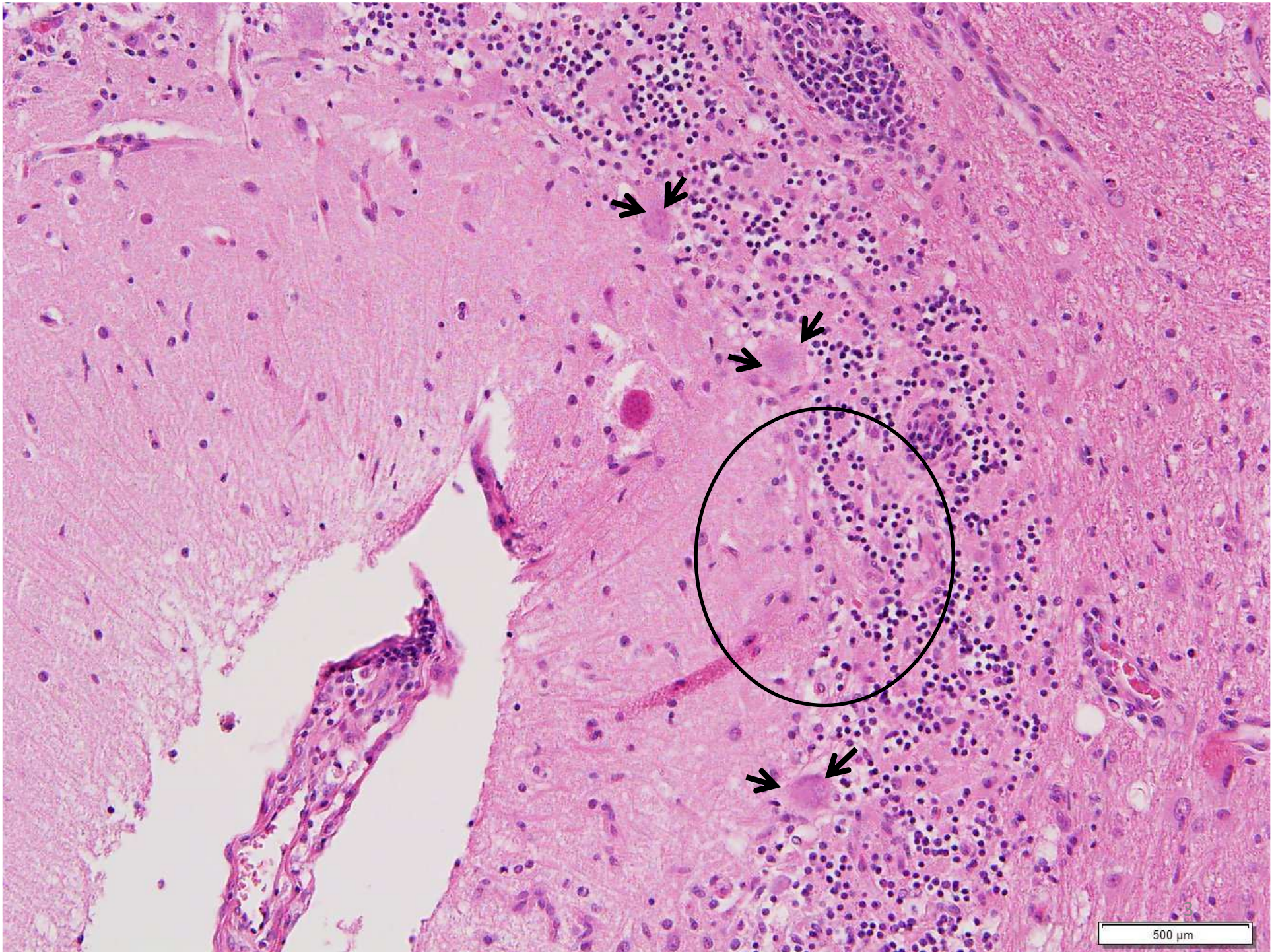
mildly increased amount of clear CSF around brain, relatively small cerebellum, caudal aspect of fourth ventricle extending beyond caudal margin of vermis, diffusely thin folia, widened sulci, moderate congestion of meninges

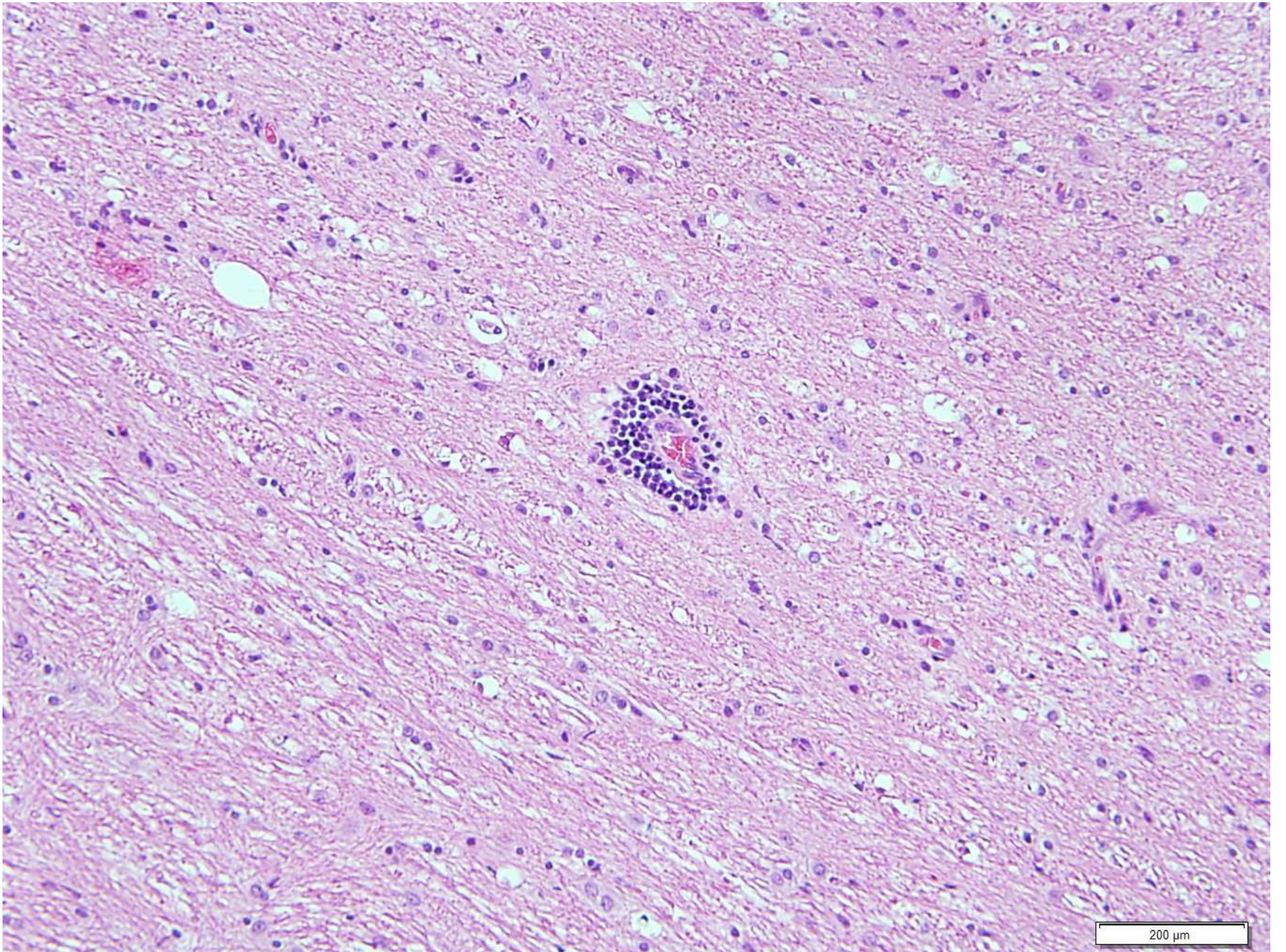
Laboratory Results

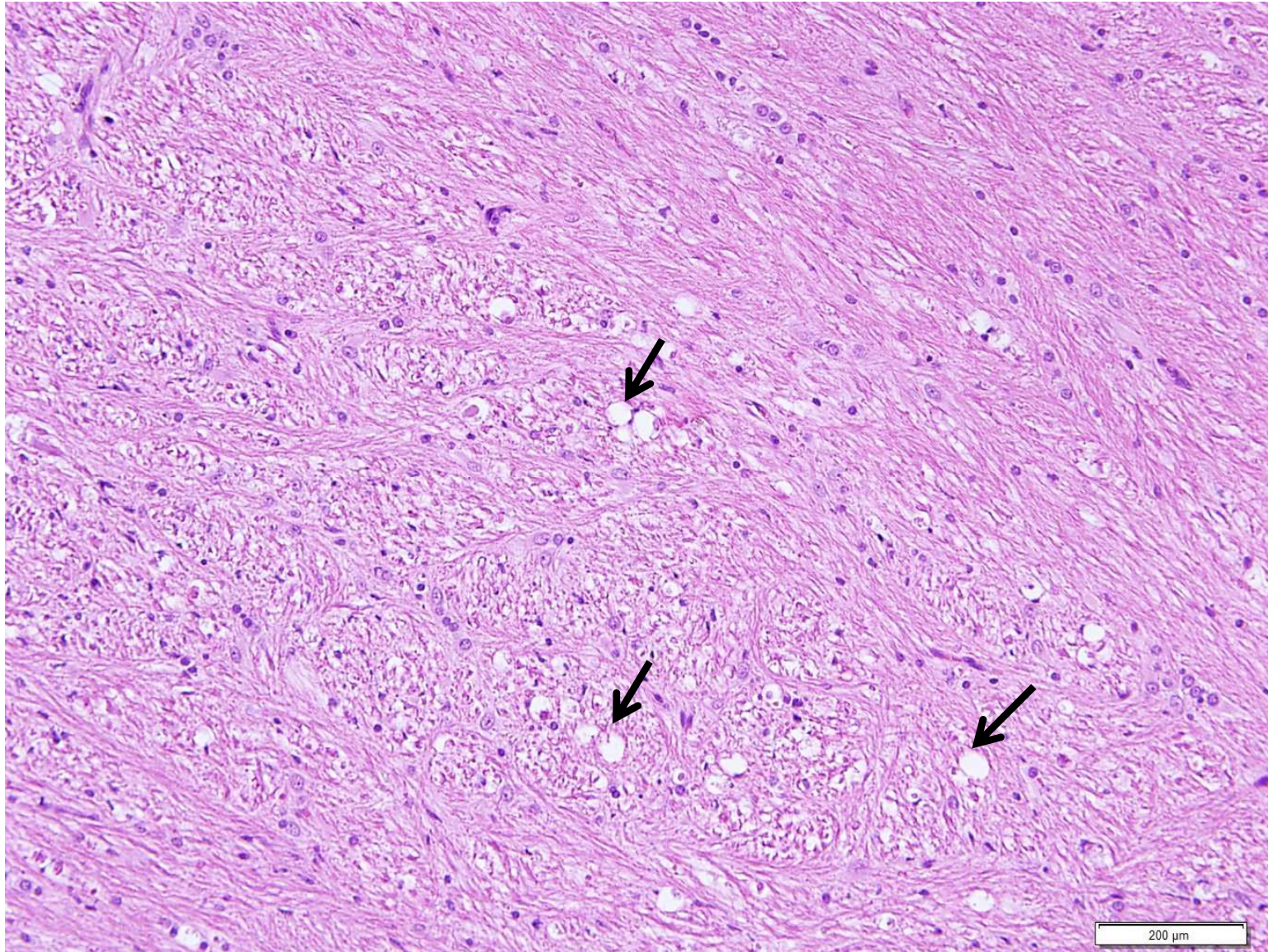
moderate mixed pleocytosis in Cerebrospinal fluid
PCR positive for *Neospora caninum*



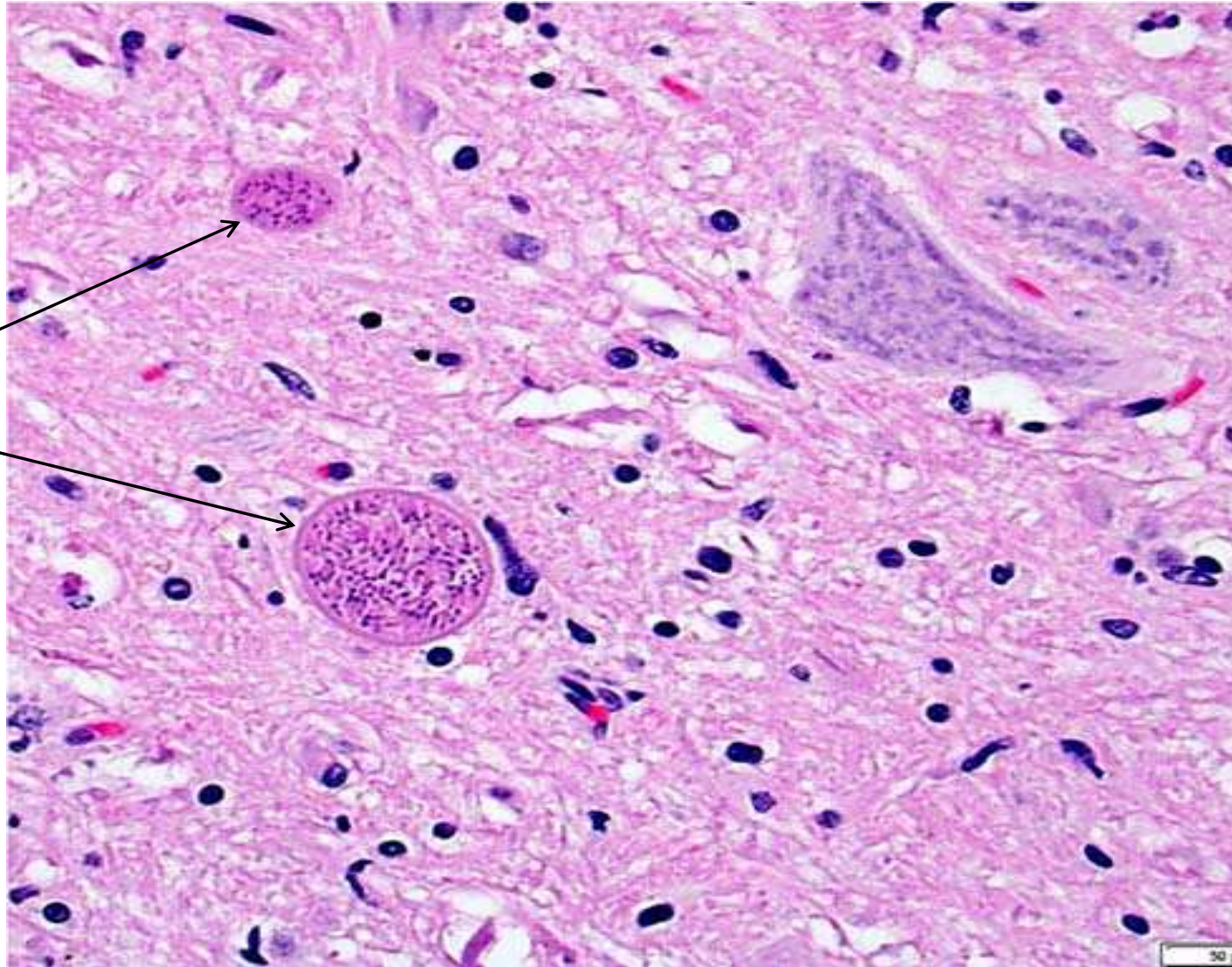
200 μ m

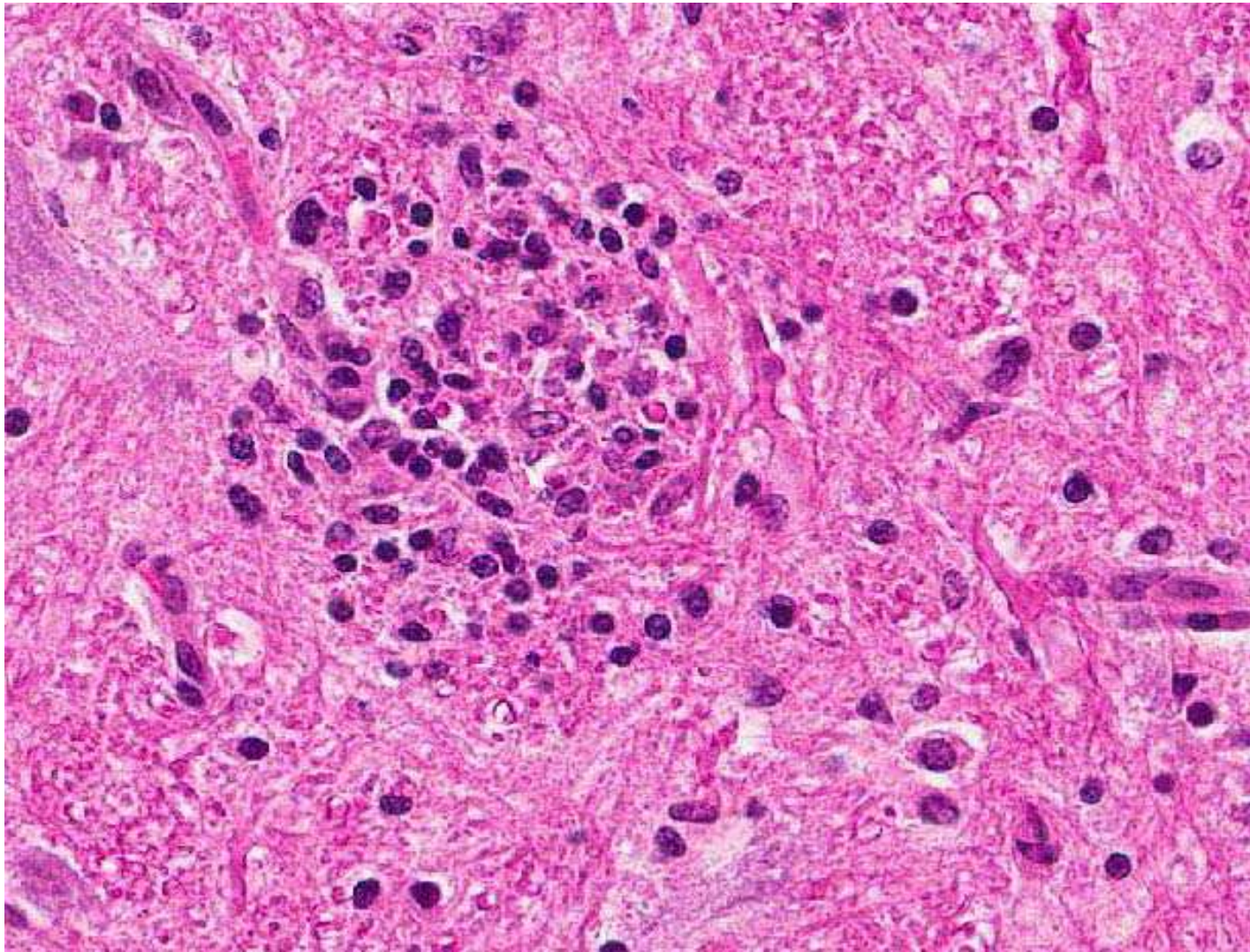






cysts of *Neospora caninum*





Contributor's morphologic diagnosis

Meningoencephalitis, lymphoplasmacytic, histiocytic, necrotizing, subacute to chronic, multifocal, moderate to marked with protozoal tissue cysts

(consistent with *Neospora caninum*)

JPC diagnosis

Necrotizing polioencephalitis, subacute, multifocal to coalescing, moderate with lymphocytic and neutrophilic meningitis and apicomplexan schizonts

Contributor's comments

- Histological findings and PCR results - confirm etiologic diagnosis of *Neospora encephalitis* for the progressive ataxia
- Neosporosis - Serious neuromuscular and polysystemic disease in dogs
- Can be fatal in dogs of any age
- **Puppies** - most severe less than 6 months of age
congenitally infected
clinical signs - over 4 weeks of age
lesions - skeletal muscles, spinal nerve roots, Central NS,
lung, heart, liver, ascending paralysis,
- **Adult dogs** - polymyositis, polysystemic infection, necrotizing cerebellitis and cerebellar atrophy
- Unique case - **necrotizing cerebellar lesions were found in a puppy**

Conference comment

- CNS changes due to *Neospora* infection were profound
- Protozoal schizonts often found in less affected areas
- Prominent histopathological lesions in cerebellum
 - Necrosis
 - Loss of cerebellar grey matter extending into the adjacent white matter
 - Reduced thickness in molecular and granular layers
 - Loss of Purkinje cells
 - Glial nodules
 - Mononuclear (lymphocytes, plasma cells) inflammatory infiltrate