DSS 2016- Case #6

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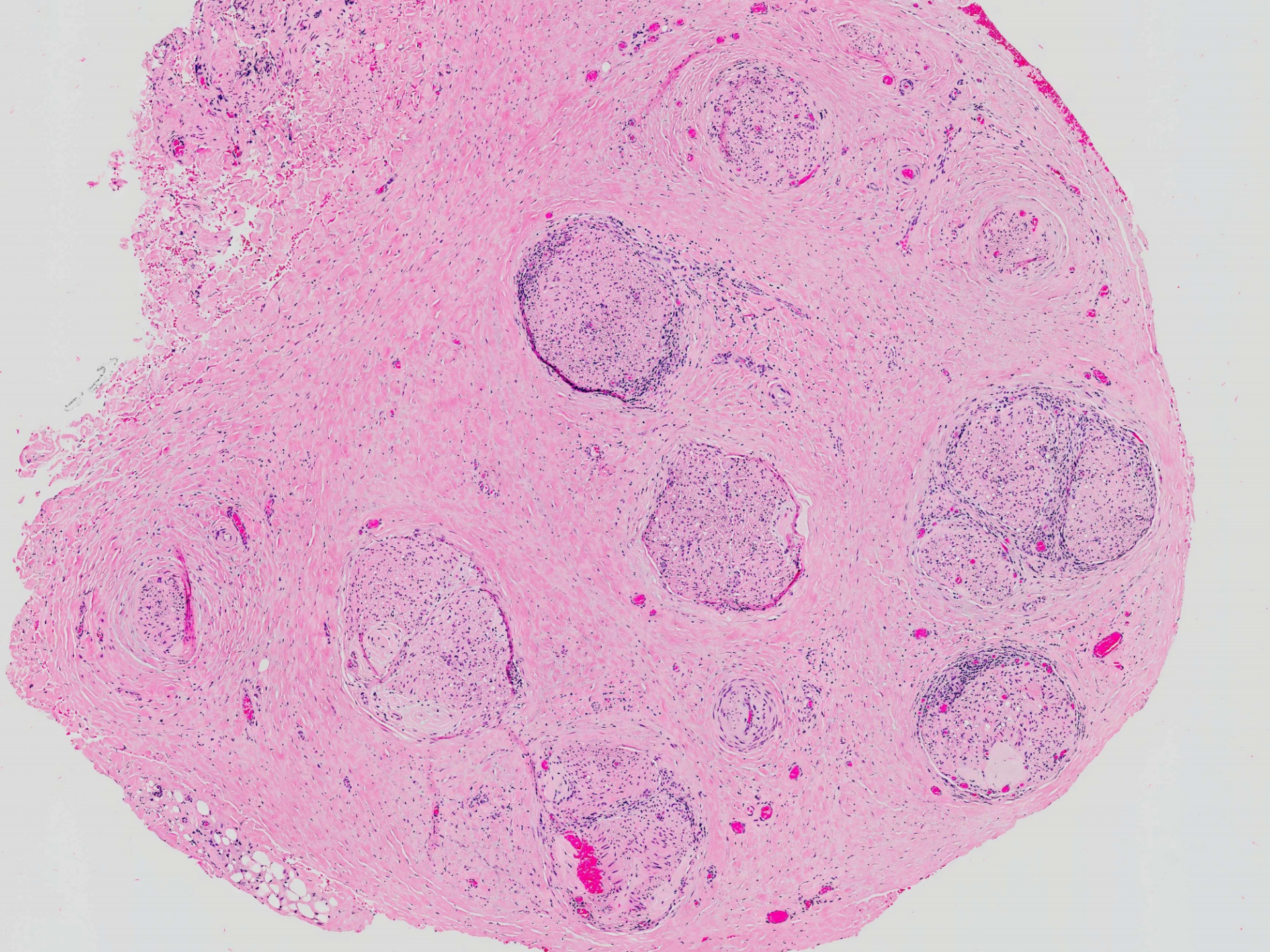
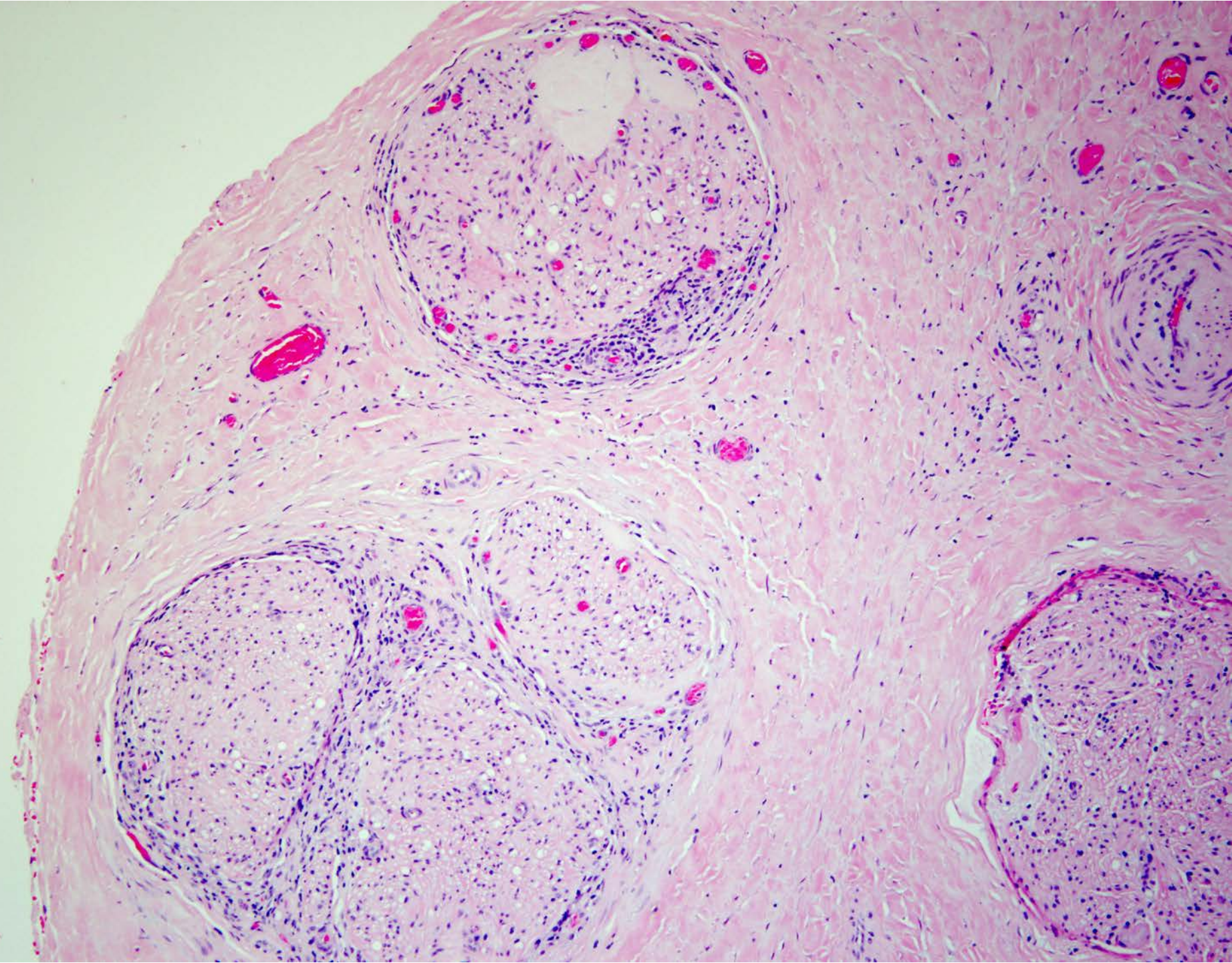
We have no financial relationships to disclose.

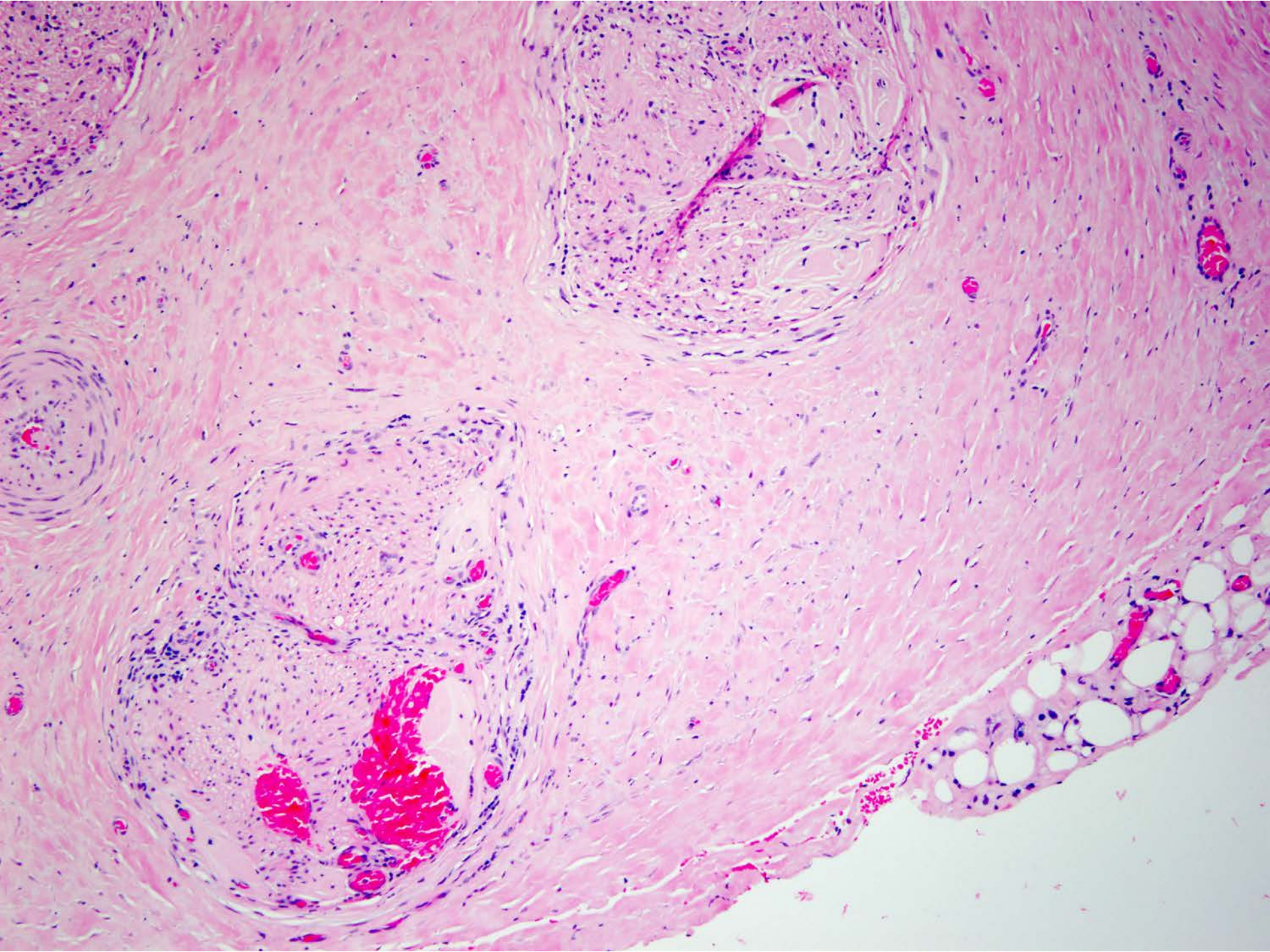
CLINICAL HISTORY REVIEW

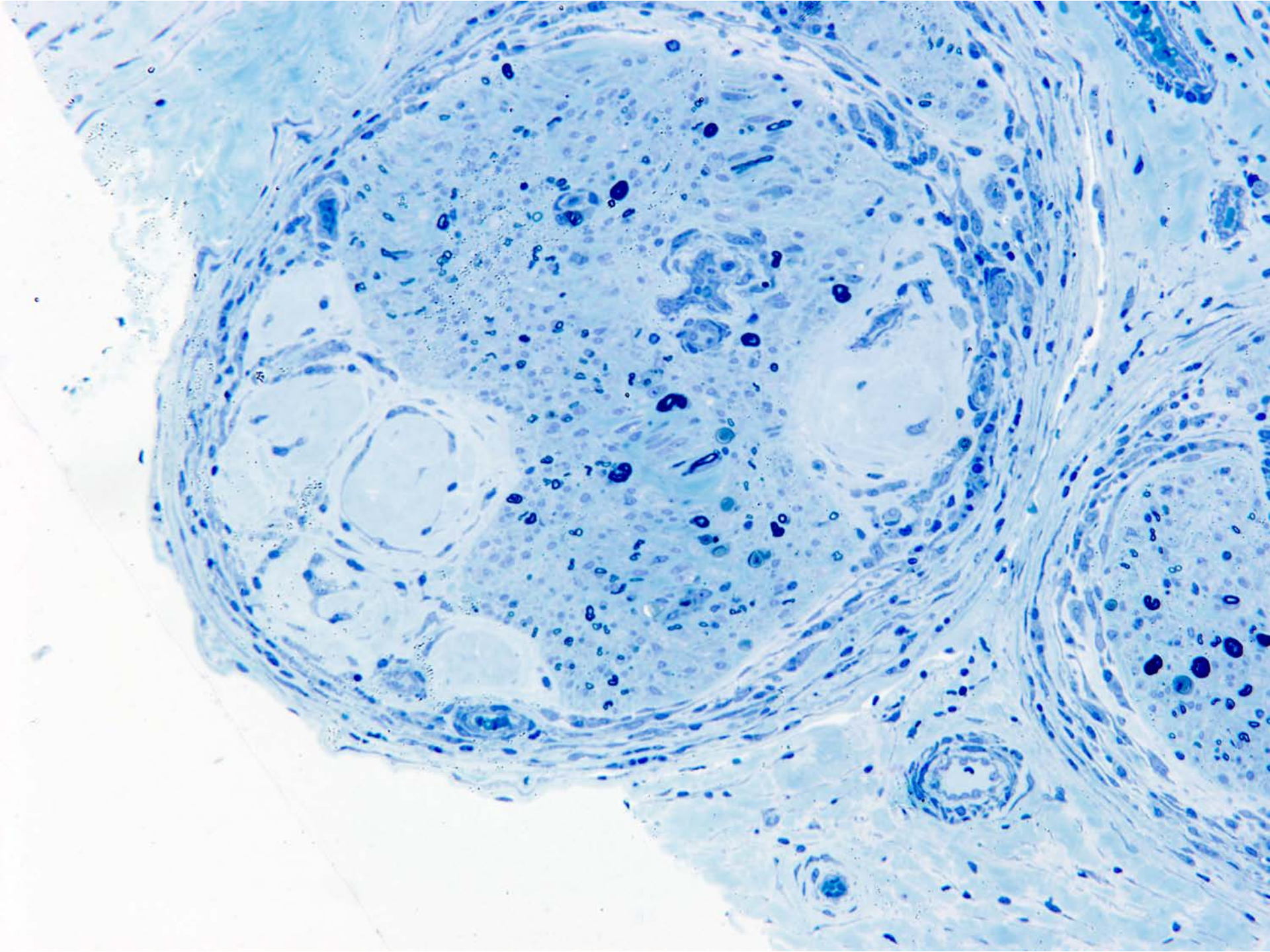
42 yo HIV+ M p/w:

- 4-5 months of weakness and atrophy of bilateral lower extremity muscles (no mvmt below knees)
- loss of sensation in hands and feet
- PMH- HIV, bipolar disorder, prior episodes of atrial fibrillation
- EMG/NCS- Sensorimotor polyneuropathy with axonal > demyelinating features

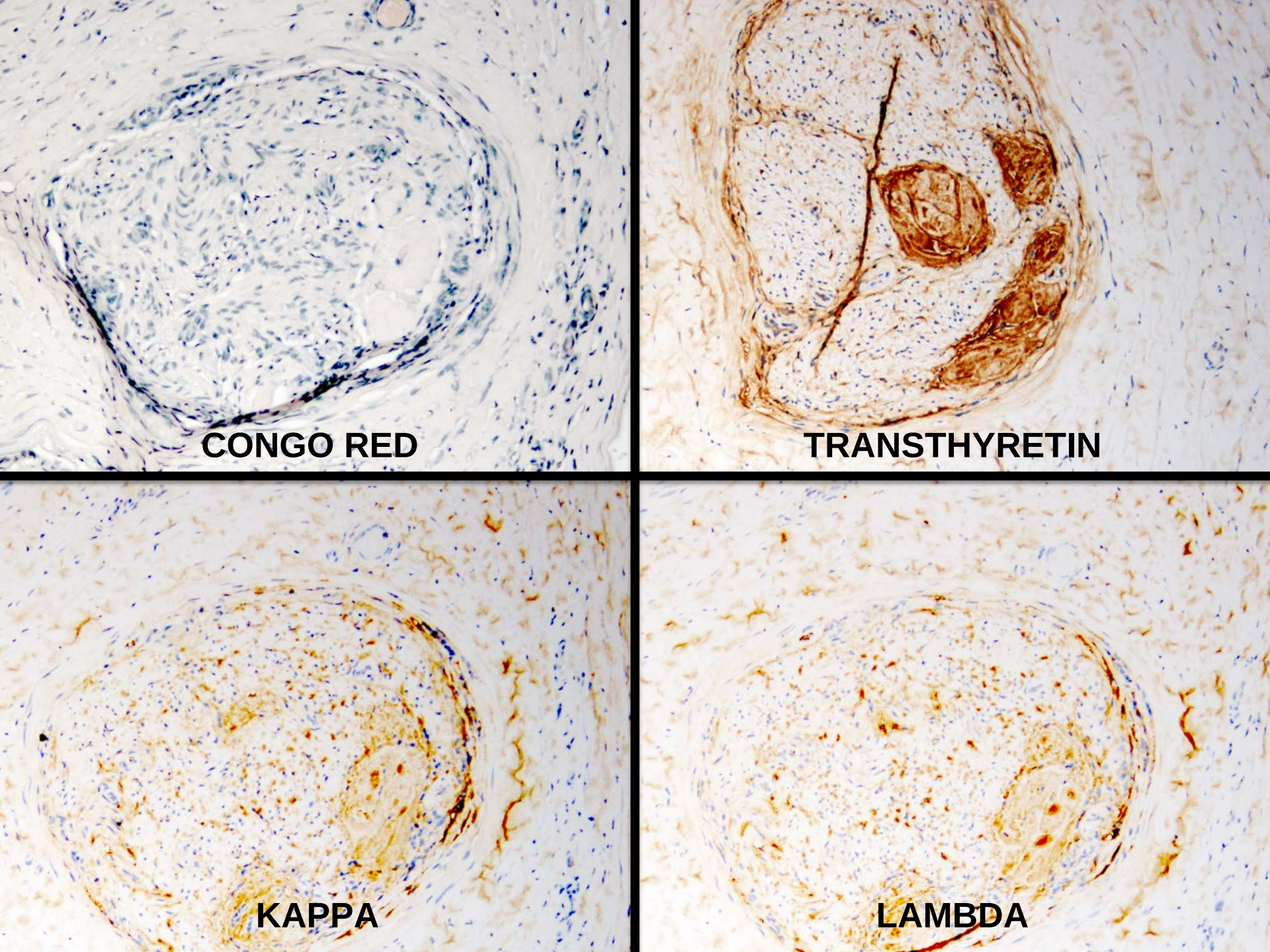


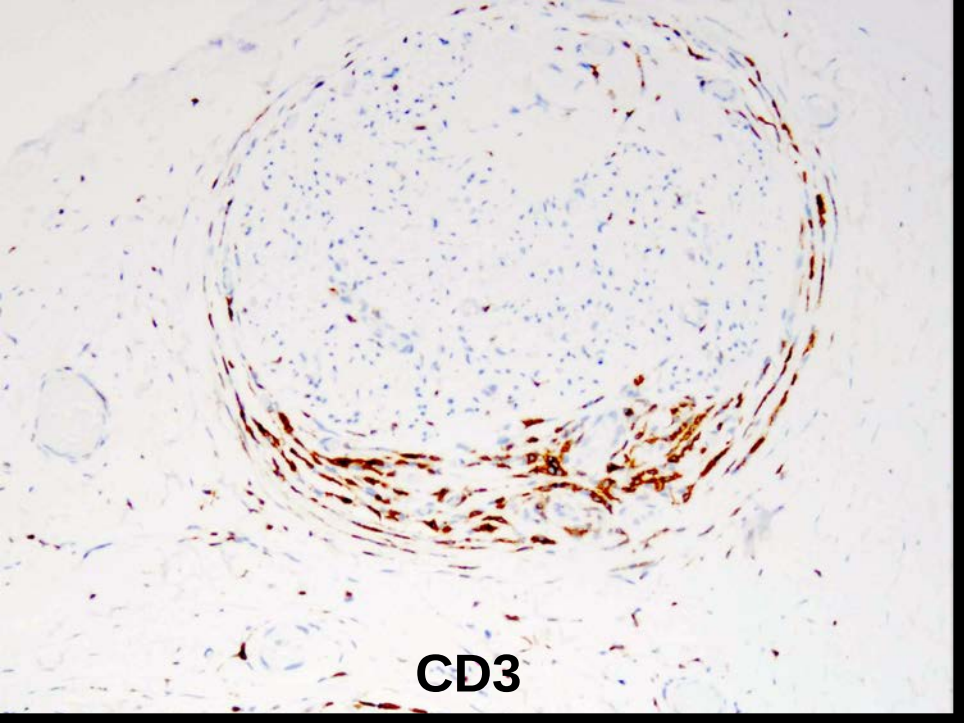






1. Diagnosis?
2. Differential diagnosis and ancillary testing.


CONGO RED
TRANSTHYRETIN
KAPPA
LAMBDA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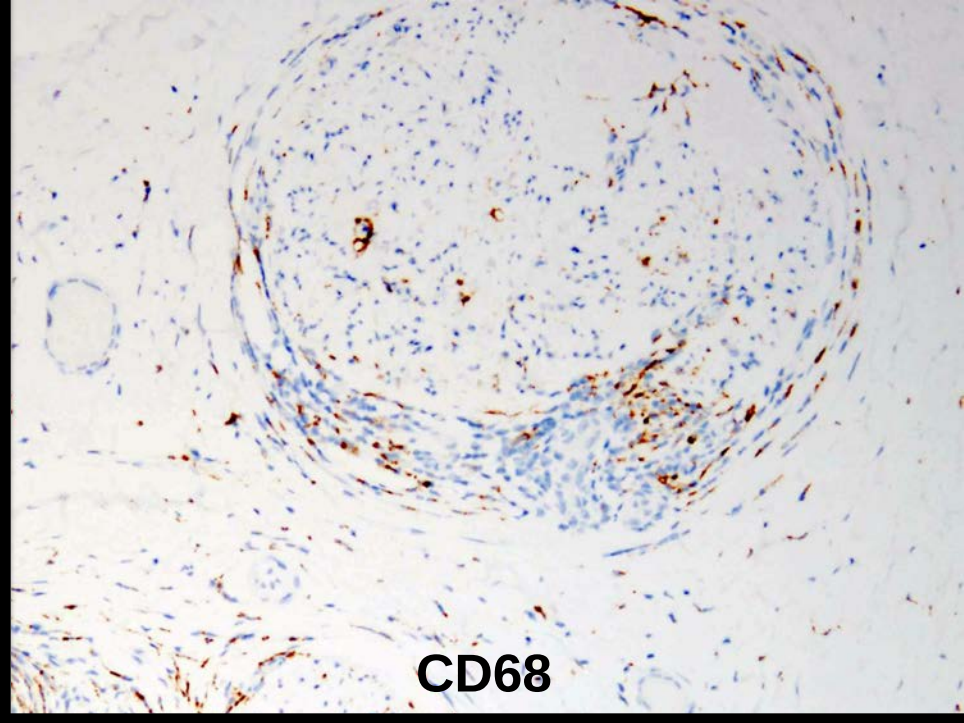
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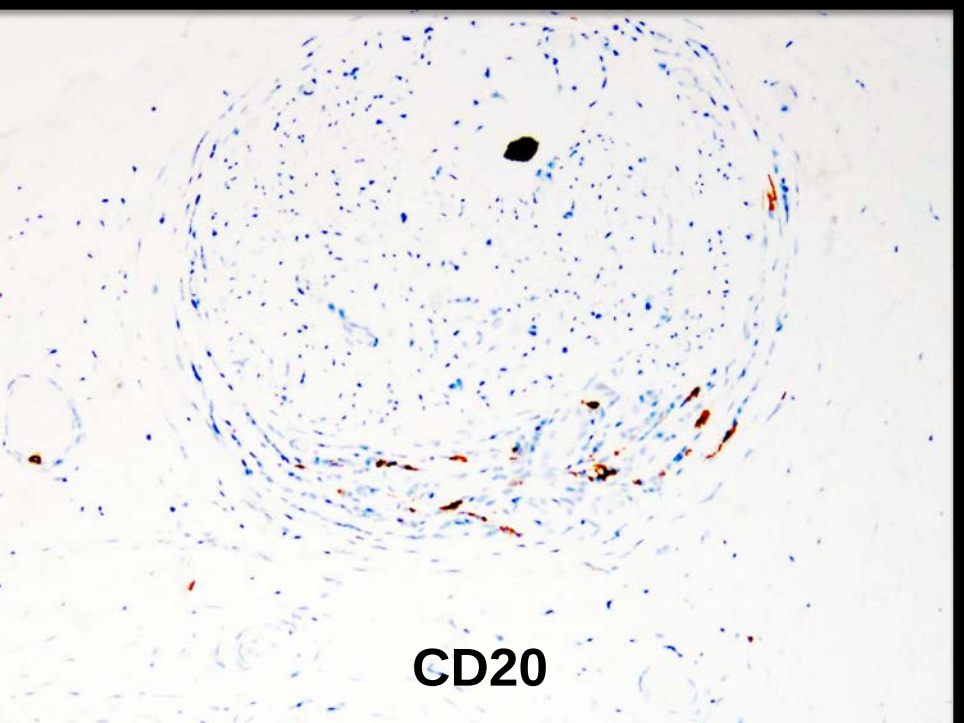
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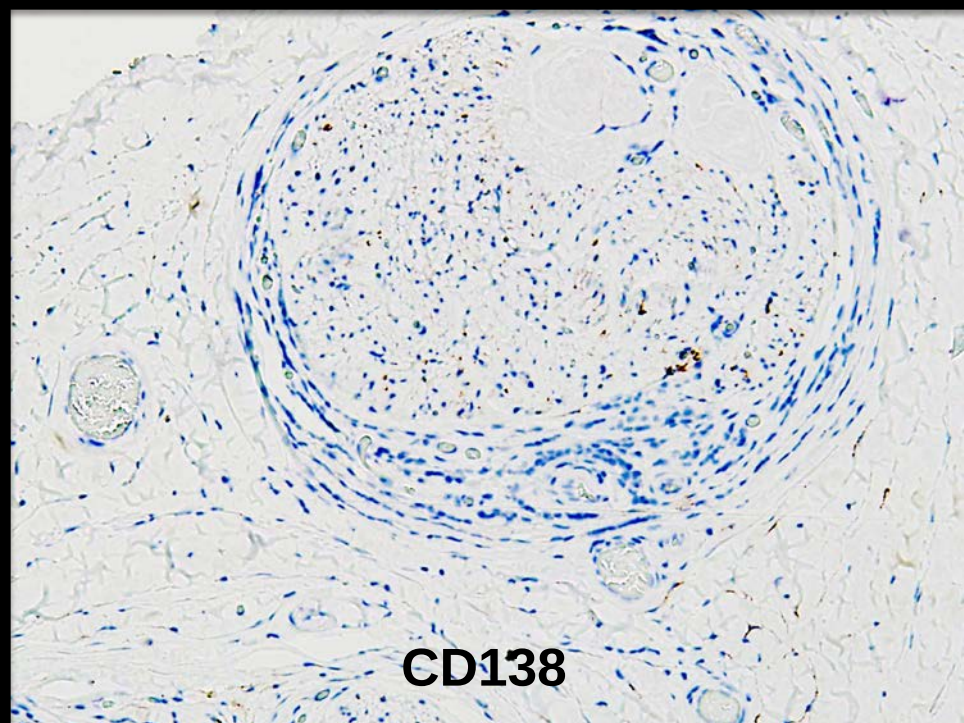
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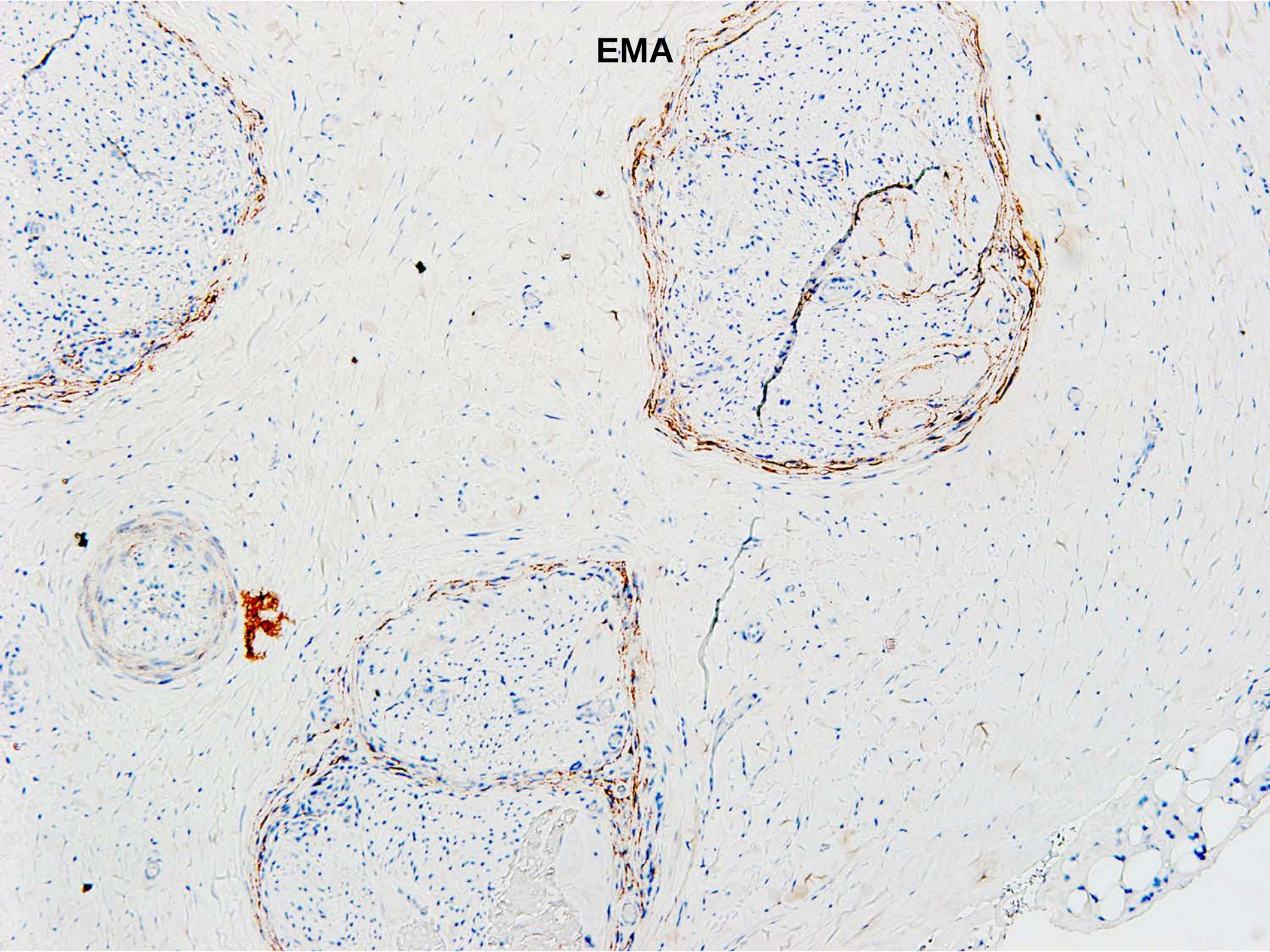
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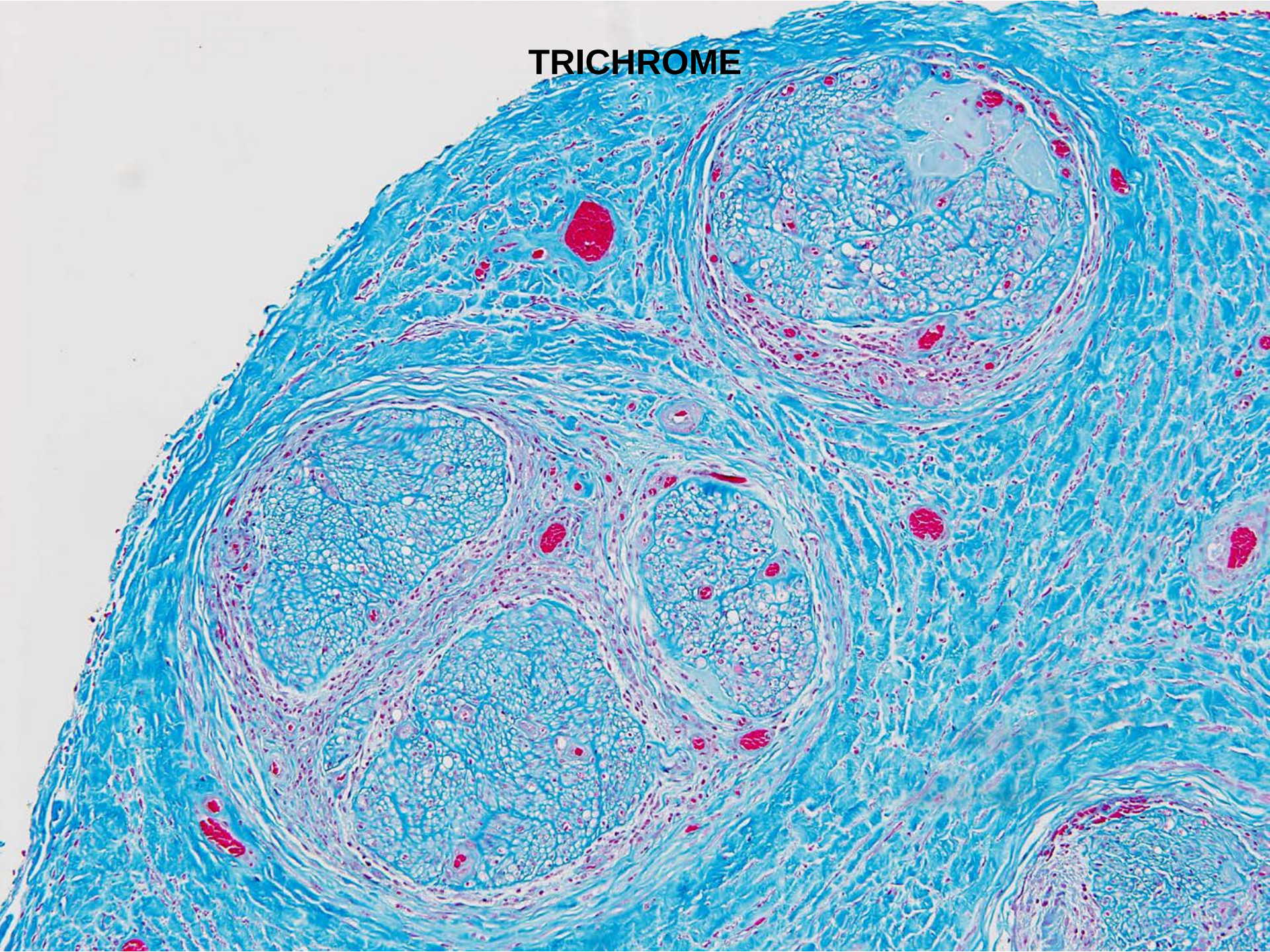
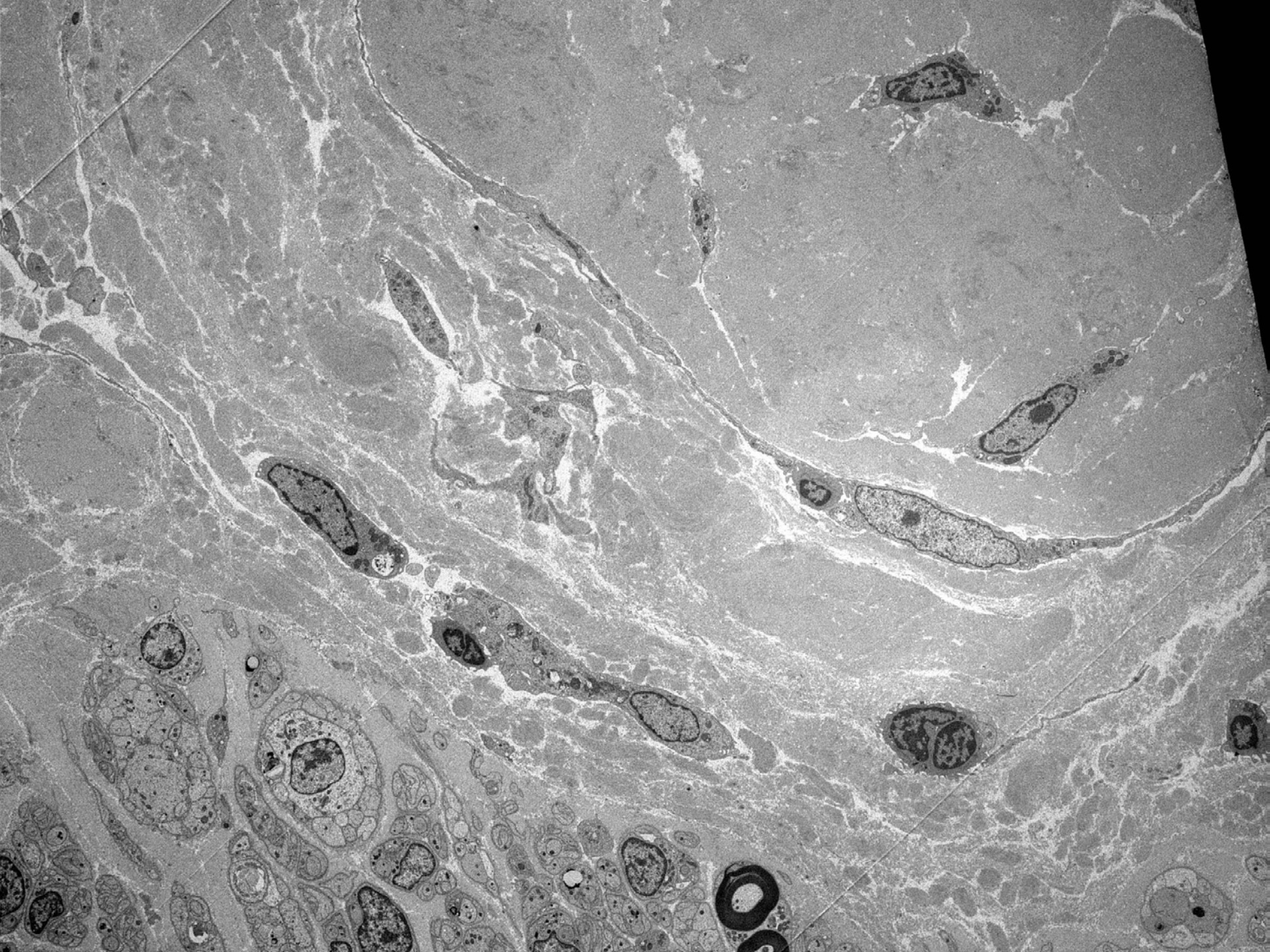

TRICHROME



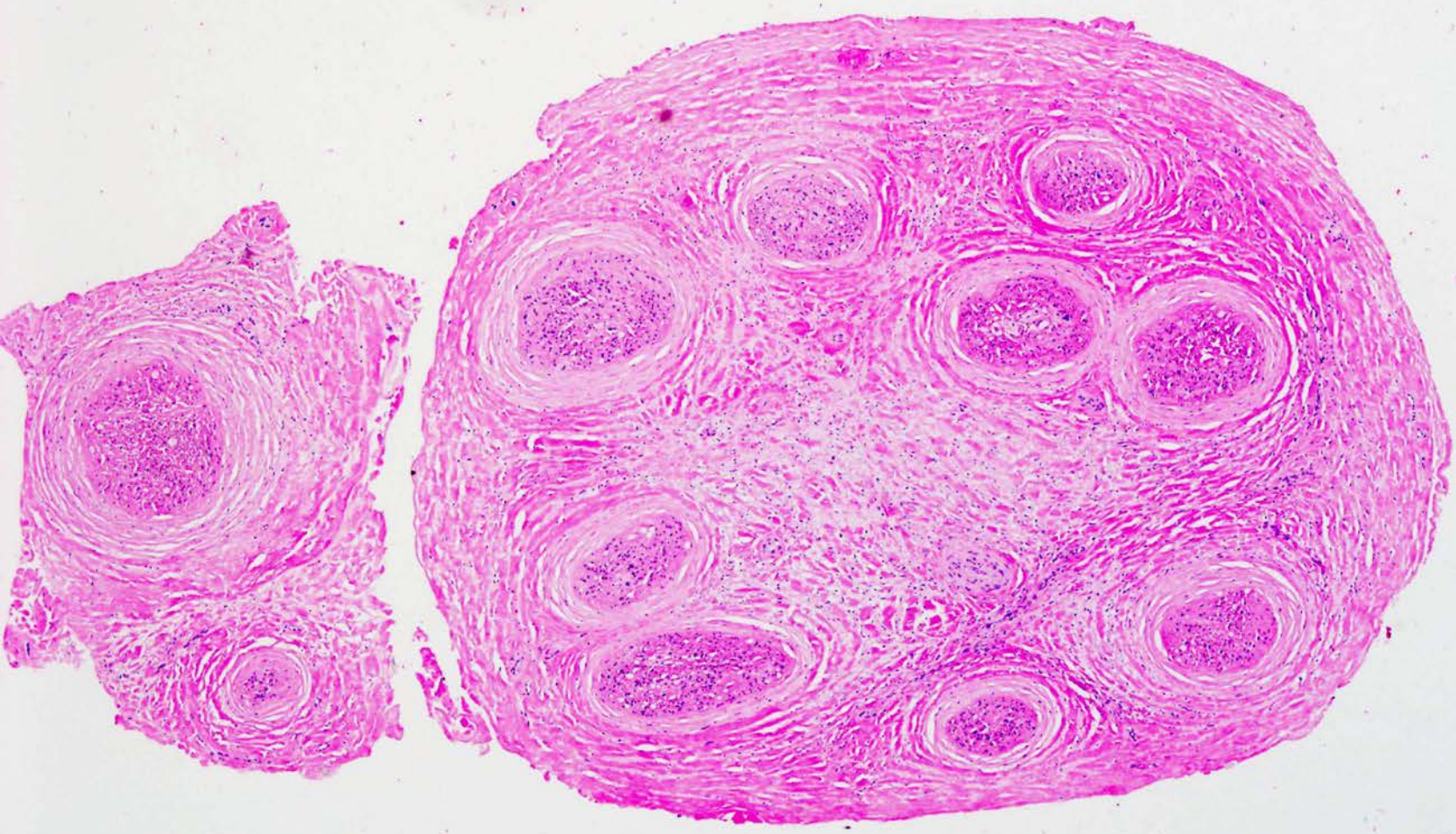
Initial Diagnosis:

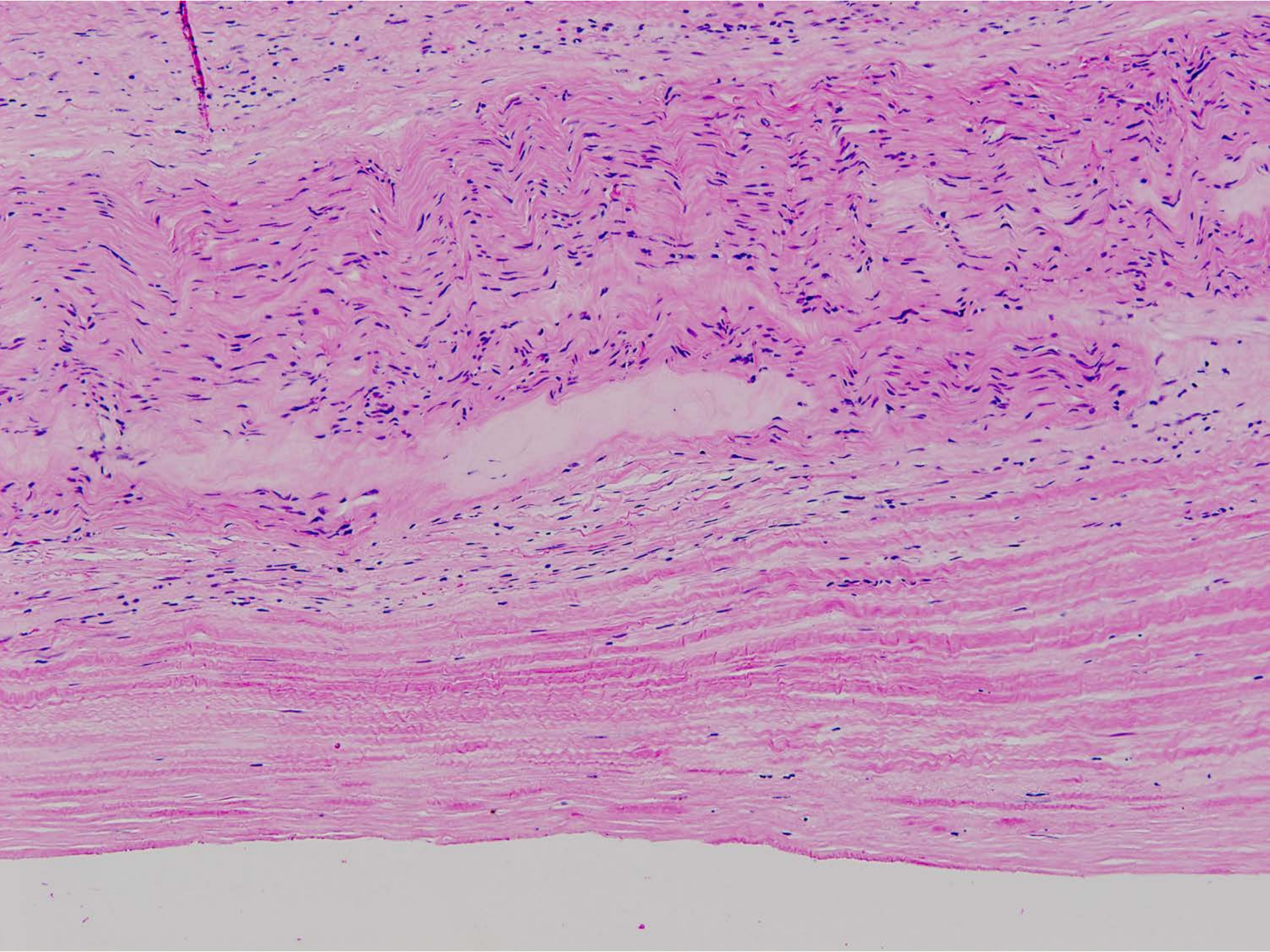
Transthyretin amyloidosis.

Moderate to severe axonal neuropathy.

Follow up after biopsy

- Fat pad and multiple GI biopsies- **NO** evidence of amyloid
- Genetic testing- **BENIGN** polymorphism (TTR:c.1607 G>A)
- Mass spectrometry on nerve biopsy deposits at Mayo Clinic-
  - MIXTURE of apolipoprotein A1, IgG heavy chain, kappa light chains, lambda light chains, serum amyloid P component, IgA
  - **NO deposition of transthyretin**, apolipoprotein E and A4 proteins





DIFFERENTIAL DIAGNOSIS #2

Idiopathic perineuritis

Infection

Amyloidosis ?

Classic features of amyloidosis in nerve biopsy

- 86-100% sensitivity for detecting primary amyloidosis
- Early stages show preferential loss of small nerve fibers
- Congo Red stain
  - can be sensitive to prolonged formalin fixation
  - if large deposits, would be unusual to be completely negative
- Electron microscopy
  - Unbranched fibrils, 7-10 nm, disorganized or random orientation
- Only mild chronic inflammation and usually no associated fibrosis

Infections associated with perineurial inflammation

- Lepromatous and borderline leprosy- prominent perineurial fibrosis, inflammation, and macrophage infiltrate (AFB is negative)

- Lyme disease- perineurial inflammation, but also has perivascular inflammation

- CMV- necrotizing endoneurial and epineurial vasculitis with neutrophils

LE JOURNAL CANADIEN DES SCIENCES NEUROLOGIQUES

Sensorimotor Perineuritis - An Autoimmune Disease?

Christopher N. Bourque, Brian A. Anderson,

C. Martin del Campo, Anders A. F. Sima*

ABSTRACT: The literature contains a single description of sensory perineuritis (Asbury et al 1972). These patients demonstrated a painful, distal, sensory neuropathy, and examination of peripheral nerve biopsies revealed focal thickening and inflammatory infiltrates of the perineurium. We report a patient with sensorimotor peripheral nerve dysfunction, accompanied by progressive slowing of nerve conduction velocity. Examination of a sural nerve biopsy demonstrated focal thickening of the perineurium, inflammatory infiltrates, and necrosis of perineurial cells. Immunohistology revealed a patchy precipitation of IgG and IgM on perineurial cells. Ultrastructurally, mononuclear cells were found adjacent to perineurial cells undergoing necrosis. The patient showed gradual improvement partially coinciding with a course of steroid therapy. We suggest that this neuropathy is caused by damage to the perineurial barrier possibly by an immune-mediated destruction of perineurial cells and subsequent compression of the endoneurial content by perineurial scarring.

Final Diagnosis:

Perineuritis associated with severe axonal neuropathy and acellular protein deposits.

Idiopathic Perineuritis

- CLINICAL ONSET- often prominent sensory symptoms such as pain, paresthesia, hypersensitivity, but MOTOR also usually present
- PATHOLOGY- Inflammation and fibrosis of the perineurium
- ASSOCIATIONS-
  - states of immune dysregulation such as lymphoma and ulcerative colitis
  - ? HIV association unknown

References

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Thank you!