Teaching NeuroImages: Eosinophilic infiltration and necrotizing vasculitis on nerve biopsy in Churg-Strauss syndrome

A 57-year-old woman with asthma, nasal polyps, and allergies presented with acute lancinating pain and patchy weakness in the distribution of multiple upper and lower limb peripheral nerves. She had peripheral eosinophilia (2 × 10^9/L). Sural nerve biopsy demonstrated nerve large arteriolar necrotizing vasculitis with eosinophils (figure), consistent with Churg-Strauss syndrome (CSS), renamed eosinophilic granulomatosis with polyangiitis.

CSS is a systemic vasculitis involving small to medium-sized vessels, associated with asthma, chronic rhinosinusitis, and eosinophilia. Peripheral neuropathy occurs in 60%–70% of cases, and nerve biopsy may show intravascular and extravascular granulomas.1

(A) Low power shows many nerve fascicles, a large epineurial arteriole with fibrinoid necrosis and eosinophilia (arrow), and small vessels with transmural inflammation (arrowhead). (B) High power of large arteriole shows fibrinoid necrosis (arrow) with eosinophils surrounding and invading the vessel wall (arrowhead).

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Eosinophilic inflammation in the nerve is rare, occurring in approximately 15% of biopsies.²

**AUTHOR CONTRIBUTIONS**
C.D.K. contributed to the study concept and design and drafting of the manuscript. N.S. contributed to the study concept and design and drafting of the manuscript. E.D.S. contributed to analysis and interpretation of data and critical revision of the manuscript. E.D. contributed to analysis and interpretation of data and critical revision of the manuscript. P.J.B.D. contributed to analysis and interpretation of data and critical revision of the manuscript.

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**REFERENCES**
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