

ntal allergic neuritis in

Lewis rats.

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Abstract:

An experimental chronic relapsing demyelinating neuropathy was produced by immunizing adult Lewis rats with bovine myelin in low (2.5 mg) and high (5 mg) doses, with and without *Mycobacterium tuberculosis* in the adjuvant. Each regime produced a similar disease course: acute severe hind limb weakness was followed by apparent recovery and then reappearance of mild neurological deficit with occasional spontaneous exacerbations. The partially recovered animals were relatively resistant to reimmunization with myelin. Immunization of four-week-old rats with myelin in complete adjuvant produced disease with a similar course. Subsequent immunization of these juvenile rats with adjuvant alone precipitated exacerbations. In the late stages, the prominent changes in peripheral nerves and nerve roots were axon loss, axonal regeneration and remyelination while inflammatory cell infiltration was confined to occasional foci. Onion bulb formation was extremely common in the dorsal root ganglia and affected in particular the nerve fibres close to the dorsal root ganglion cells. The cells forming the onion bulbs resembled the satellite cells surrounding the axon hillocks. Onion bulb formation also occurred in the portion of the ventral roots adjacent to the dorsal root ganglion but was rare elsewhere. Immunocytochemistry revealed only occasional lymphocyte infiltration but there was increased Class I and Class II MHC antigen expression throughout the peripheral nervous system. The results are relevant to the interpretation of biopsies from patients with chronic demyelinating neuropathy of possible inflammatory or autoimmune origin.