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Case Studies in Peripheral Neuropathy

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Case Studies in Peripheral Neuropathy

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I. INTRODUCTION

Peripheral neuropathies are common problems for which patients seek medical attention. However, evaluation of these conditions may seem complex because of diverse clinical presentations and large numbers of possible etiologies. In patients with suspected peripheral neuropathy, the physician should develop an organized approach to evaluation, which should include characterizing the neuropathy, determining the underlying cause, providing a prognosis, and choosing appropriate treatment, while avoiding an excessive use of resources and time.

Peripheral neuropathies can be divided into 3 broad classifications: mononeuropathy, mononeuropathy multiplex, and polyneuropathy.

Mononeuropathy is a functional disturbance of a single nerve. Often this condition is caused by entrapment and produces a range of clinical symptoms (**Table 1**).¹ Entrapment neuropathies usually present as slowly developing lesions characterized by variable amounts of pain, weakness, and sensory loss. Nerve conduction studies are abnormal at the site of entrapment, demonstrating slowed conduction velocities or a decrease in the amplitude of the response. Treatment may be conservative or may involve surgical release, depending on the syndrome and its severity. Mononeuropathies may also result from nerve infarctions. Onset is painful and abrupt; weakness and atrophy typically follow. Electrodiagnostic tests reveal axon loss. Recovery from

nerve infarction depends on the extent of axon loss and on the site (proximal versus distal) of the lesion.

Mononeuropathy multiplex involves the stepwise, sequential dysfunction of several nerves. This condition most commonly occurs as a result of infarction from vasculitis (often in association with an underlying connective tissue disease), the presentation of which is sudden and painful. Painless mononeuropathy multiplex can result from segmental demyelination. These and other causes of mononeuropathy multiplex are listed in **Table 2**.^{2,3}

Polyneuropathies make up a large and varied group of peripheral nerve disorders with multiple nerve involvement. This review focuses primarily on polyneuropathies, but some of the other peripheral neuropathies are discussed in association with diabetes.

II. DIABETIC NEUROPATHY

CASE PATIENT 1 PRESENTATION

Patient 1 is a 45-year-old man who presents with a 2-year history of foot discomfort. His symptoms began as a tingling in the toes, which has spread bilaterally up to the ankles in a symmetric fashion. He describes burning in the feet with intermittent shock-like sensations, which are particularly severe at night. Despite the discomfort, patient 1 describes his feet as numb because he has trouble feeling the temperature of the cool bathroom floor when he walks barefoot. He recalls a time