

Sacral Neurofibroma

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A 26-year-old woman presented with low back pain. MR imaging showed a left S1 nerve root mass enlarging the neural foramen and extending extradurally into the presacral soft tissues. The mass had intermediate signal intensity on T1-weighted MR images and bright intensity on T2-weighted MR images, with slight enhancement after IV administration of gadopentetate dimeglumine. Postmyelography CT scans showed the mass to be noncalcified, with no invasion of bone at the enlarged neural foramen (Fig. 1). Subsequently, a well-circumscribed soft-tissue mass that contained Schwann cells, fibroblasts, and nerve fibers was resected. The final pathologic diagnosis was neurofibroma.

Neurofibromas are benign fibroblastic neoplasms of peripheral nerves whose consistency and histologic appearance vary from myxoid to fibrous according to the differentiation of the neoplastic elements [1]. The bulk of the tumor volume consists of intercellular collagen fibrils in a nonorganized myxoid matrix. The imaging characteristics depend on the relative amounts of fibrous and myxoid material. Of nerve sheath origin, they occur as a fusiform rather than eccentric enlargement of the nerve, and neural fibers are dispersed within the lesion. Neurofibromas are slow growing and non-invasive, and their soft and elastic consistency permits them to be shaped by the adjacent bone structures; the bone reacts by remodeling around the lesions. They rarely calcify, and frequently have a bilobed "dumbbell" appearance. On MR

imaging, neurofibromas tend to be isointense with muscle on T1-weighted images and show marked brightening on T2-weighted images. They may be inhomogeneous [2].

Although small cutaneous neurofibromas may be solitary, when multiple or deep, neurofibromas occur as a manifestation of neurofibromatosis. They are the most common masses of the spinal canal, accounting for 16–30% of such lesions, and are typically intradural and extramedullary [3]. The most common signs and symptoms are pain and radiculopathy due to compression of the affected nerve root. The primary treatment for neurofibromas is surgical resection. The neurologic outcome is related to the tumor bulk and to whether the adjacent nerve root can be spared [4, 5]. Malignant degeneration to neurofibrosarcoma occurs in 4–11% of patients with neurofibromatosis [3].

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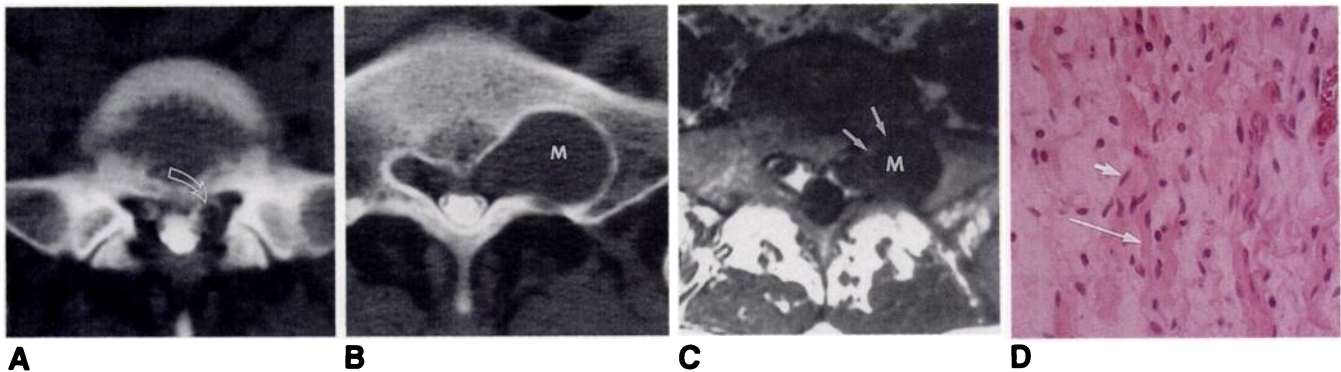


Fig. 1.—Sacral neurofibroma.

A and B, Postmyelography CT scans show intradural left S1 nerve root mass (curved arrow, M) expanding neural foramen but preserving bony cortex. C, On T1-weighted MR image, mass (M) is isointense with opposite nerve root and extends into soft tissues (arrows). D, Photomicrograph shows wirelike bundles of collagen (long arrow) and spindle cells (short arrow) with abundant intercellular myxoid matrix (H and E, high power).

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