



Spinal Cord Vascular Disease

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The spinal cord is subject to many of the same vascular diseases that involve the brain, but its anatomy and embryology render it susceptible to some syndromes that do not have intracranial counterparts. The embryonic arterial supply to the spinal cord derives from intradural vessels that enter at each spinal level and divide to follow the dorsal and ventral roots.

SPINAL CORD ISCHEMIA: The midthoracic levels of the spinal cord are traditionally considered to be the most vulnerable to compromise from hypoperfusion, but more recent evidence suggests that the lower thoracic cord is at greater risk. The actual prevalence of spinal cord infarction is unknown, but is generally cited as representing 1% to 2% of all central neurovascular events and 5% to 8% of all acute myelopathies.

Weakness (100%), sensory loss (89%), back pain at onset (82%), and urinary complaints requiring catheterization (75%) were the most common symptoms of cord ischemia at the time of presentation. Weakness most commonly affects both legs. Examination typically reveals flaccid paresis accompanied by diminished superficial and tendon reflexes below the level of the lesion. Preservation of strength and reflexes suggests the rare syndrome of posterior spinal artery territory infarction. Weakness most commonly affects both legs. Examination typically reveals flaccid paresis accompanied by diminished superficial and tendon reflexes below the level of the lesion. Preservation of strength and reflexes suggests the rare syndrome of posterior spinal artery territory infarction.

Aortic pathologies with regional hemodynamic compromise are the most common cause of spinal cord infarction, accounting for 30% to 40% of cases. The medical management of spinal cord ischemia is generally supportive and focused on reducing risk for recurrence.

SPINAL VASCULAR MALFORMATIONS: Spinal vascular malformations consist of normal-sized to enlarged arteries and enlarged, tortuous veins without an intervening capillary network. A commonly accepted classification system categorizes spinal vascular malformations into four types:

Type I—dural arteriovenous fistula (AVF); subtypes IA (single feeding artery) and IB (multiple feeding arteries).

Type II—intramedullary glomus-type arteriovenous malformation (AVM).

Type III—intramedullary juvenile-type AVM, which is more extensive than a glomus-type AVM, frequently having an extramedullary component and sometimes an extradural component.

Type IV—intradural, extramedullary (perimedullary) AVF: subtypes IVA, IVB, and IVC correspond to lesions with progressively increased arteriovenous shunting manifested as increased number, size, and tortuosity of feeding arteries.

Spinal vascular malformations, especially dural AVFs, are frequently misdiagnosed. The onset of manifestations can be acute or insidious, and the course may include remissions and relapses. The most common complaints at onset are pain, weakness, and sensory symptoms.

Key words: spinal Cord, vascular diseases



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