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Editorial

Recurrent Para Paresis- Lightning Can Strike the Same Place Again

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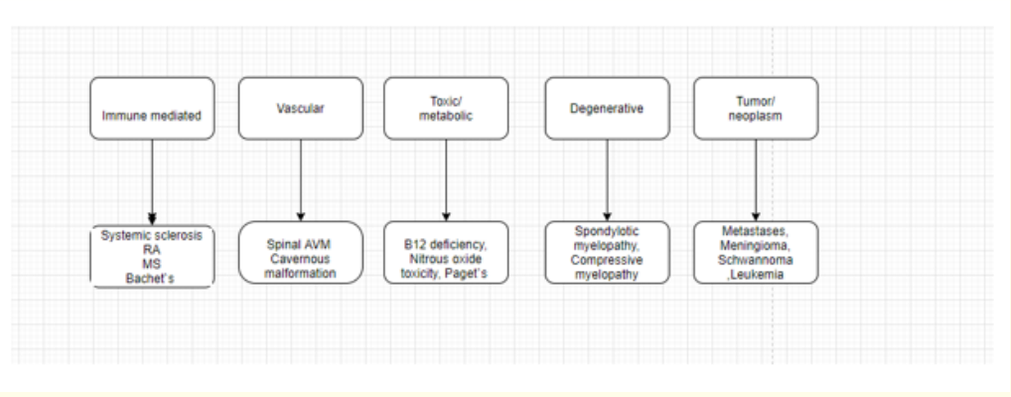
In neurological practice,' recurrent paraparesis' is a special and unusual clinical appearance. It poses a diagnostic challenge and distinguishes treatable triggers from non-treatable ones with serious problems. Since it is a chronic condition an individual is more likely to be overlooked and misdiagnosed. Recurrent paraparesis can occur with demyelinating disorder like Multiple Sclerosis, transverse myelitis, spinal vascular malformations, thyrotoxicosis, spinal hydatid disease, chronic inflammatory demyelinating disorder and herniated intervertebral disc.

Aetiology for recurrent paraparesis

For comprehensive management of Recurrent Paraparesis, it is critical to understand the underline aetiology and specific diagnosis. The early diagnosis and intervention can prevent the progression of the paraparesis and can improve the outcome of patients.



Immune mediated

Recurring episodes of paraparesis are usually associated with multiple sclerosis. Multiple sclerosis typically presents with multiple characteristic lesions in the cord and brain. However, solitary lesions in the cord can be radiographically and pathologically indistinguishable from an MS lesion and cause progressive myelopathy, a condition labelled 'solitary sclerosis'. Immune-mediated neurological disorders that may affect the spinal cord - Systemic Lupus Erythematous, Behcet's Disease and sarcoidosis is usually present with acute transverse myelitis, but sometimes follows a recurrent progressive path. Myelopathy may be the initial manifestation of SLE and may be associated with antiphospholipid antibodies. Focal speckle-like intramedullary lesions are the most common MRI findings, but longitudinal extensive lesions affecting more than 4 spinal segments have also been identified. The other condition which can present with similar MRI feature and Optic Neuritis is Neuro Myelitis Optica (NMO) and diagnosis cab be confirm by Aquaporin 4 antibodies in the serum.

Vascular

The presence of large serpentine flow voids in the thecal bag on the T2WI MRI indicates the most common arteriovenous malformation (AVM), If the volume of the shunt is small, the vessels can only be seen after the contrast MRI as T2-weighted coiled vascular structures may be more readily appreciable sequences, such as positive steady state interference [CISS], or Imaging with steady state [FIESTA] or 3D turbo [3D-TSE] spin echo. These sequences help to differentiate between the real flow and the emptiness of the pulsation artifact. Flux voids are typically associated with substantial intramedullary T2W signal change in the mid-thoracic cord. Spinal angiogram is the golden norm for the diagnosis of AVF as the fistulas may be positioned in a place far from the cord and therefore spinal angiogram should be done by an experienced interventionist to avoid false negative outcomes.

Acute aortic dissection

There have been rare reports of transient paraplegia or paraparesis due to painless AAD. These critical complications are due to ischemia of the anterior spinal artery.

The large anterior radiculomedullary artery, or artery of Adamkiewicz, provides blood to the anterior spinal artery in the thoracolumbar region, which perfuses the anterior two-thirds of the spinal cord. However, due to its small diameter, branching variation, and possible complications during angiography, the artery of Adamkiewicz can be difficult to evaluate using conventional selective intercostal or lumbar angiography. The mechanism of painless AAD remains unclear. Several hypotheses have been suggested, which mention the speed of dissection, lack of perception of pain due to cerebral ischemic complications, and neuropathy blockage of normal pain perception due to previous spinal ischemia.

Toxic/Metabolic

Vitamin B12 deficiency, which causes subacute mixed degeneration syndrome, first described in 1884. Folate, zinc and vitamin E deficiency and intake of high levels of fluoride have all been found to cause myelopathy.

Some myelopathies stem from geography-independent poisons, including nitrous oxide and heroin. Nitrous oxide causes vitamin B12 deficiency and resulting subacute combined degeneration because it inactivates vitamin B12 by oxidizing methylcobalamin, the active source of intracellular B12. The cause for heroin myelopathy is not well known, although there are some hypotheses. The most promising hypothesis is an immune-mediated hypersensitivity reaction since most cases of heroin myelopathy occur after a single application of heroin after a duration of abstinence. Other myelopathies are the result of toxins that have a geographical choice, such as lathyrism. Ingestion of poisonous amino acid in the grass (chicken) pea.

Paget's disease

Paget's disease with various presentations, including patients who presented with chronic paraparesis, was identified in one Indian study from the Post Graduate Institute, Chandigarh.

Café-au-lait masculin, fibrous dysplasia and multiple endocrinopathies are linked with McCune Albright syndrome. In this study, 26 patients with fibrous dysplasia reported their encounters, 9 of whom had McCune Albright syndrome. In McCune Albright syndrome, fibrous dysplasia is treated with bisphosphonates and intralesional zoledronic acid has been shown to be very novel. Hypophosphatemic osteomalacia, specifically tumor-induced osteomalacia (TIO), is quite unusual and our experience has been identified in 17 hypophosphatemic osteomalacia patients, of whom 3 had TIO.

Thyroid disorders

Thyrotoxic periodic paralysis (TPP), a disorder most commonly seen in Asian men, is characterized by abrupt onset of hypokalemia and paralysis. The condition primarily affects the lower extremities and is secondary to thyrotoxicosis. The underlying hyperthyroidism is often subtle causing difficulty in early diagnosis. Episodes can be prevented by achieving a euthyroid state. Treatment with low-dose potassium supplements and nonselective beta-blockers should be initiated upon diagnosis, and the serum potassium level should be frequently monitored to prevent rebound hyperkalemia.

Tumor/Neoplasm extradural/Intradural

Tumor/neoplasms are the known risk factors for the recurrent paraparesis. Metastases are most commonly extradural neoplastic lesions that induce progressive myelopathy, but can also be attributed to cancers that occur in the spine, such as multiple myeloma. Multiple myeloma spine MRI usually shows bone damage with contrast-enhancing lesions in one or more vertebrae, but extraosseous epidural lesions have also been recorded without vertebral body destruction. A complete spine MRI examination can show lesions in other vertebrae or osteolytic lesions on a CT scan. Extramedullary leukemic cell aggregates may also develop compressive mass lesions in the epidural space that are homogeneously amplified. Important clues to the diagnosis of extramedullary myeloid tumors are leukocytosis, eosinophilia, or blast crisis [1-6].

Summary

Rapid diagnosis and early treatment of recurrent paraparesis is crucial determinants of prognosis. In many cases, this can prevent the development of an irreversible paraplegia, especially if the patient presents with incipient symptoms. As of now very limited evidence are present on the recurrent paraparesis. The optimum use of MRI and Angiography can provide the insightful information for differential diagnosis. It is indeed needed to generate the evidence and share the experiences to bring the positive impact on the patients life who are suffering from recurrent paraparesis.

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