

Recognition and Management of Neurological Complications Associated with Epicondylitis

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ABOUT THE STUDY

Epicondylitis, commonly known as tennis elbow or golfer's elbow, is a prevalent musculoskeletal condition characterized by pain and tenderness around the elbow joint. While the primary symptoms are localized to the tendons and muscles of the forearm, neurological complications associated with epicondylitis can occur, posing diagnostic and management challenges for healthcare professionals.

Neurological complications of epicondylitis

Radial Tunnel Syndrome (RTS): RTS is a compressive neuropathy caused by entrapment or irritation of the radial nerve within the radial tunnel, which runs deep to the extensor muscles of the forearm. Patients may present with symptoms such as deep aching pain in the lateral forearm, weakness in wrist extension, and paresthesia along the dorsal aspect of the hand and thumb. Differential diagnosis includes lateral epicondylitis (tennis elbow) due to overlapping symptoms. However, specific provocative tests like the resisted supination test can help differentiate between the two conditions.

Cubital Tunnel Syndrome (CuTS): CuTS results from compression or traction injury to the ulnar nerve as it passes through the cubital tunnel, located posterior to the medial epicondyle of the humerus. Symptoms include numbness and tingling in the ring and little fingers, weakness in grip strength, and pain along the medial aspect of the elbow. Differentiation from medial epicondylitis (golfer's elbow) is crucial, and nerve conduction studies may be required for definitive diagnosis.

Double Crush Syndrome (DCS): DCS occurs when a nerve is compressed at multiple sites along its course, leading to amplified symptoms. In the context of epicondylitis, DCS can involve compression of the radial or ulnar nerve at the elbow in conjunction with compression elsewhere along the nerve's pathway. Recognition of DCS requires a comprehensive clinical assessment to identify multiple sites of nerve compression and distinguish between primary and secondary entrapment points.

Reflex Sympathetic Dystrophy (RSD) or Complex Regional Pain Syndrome (CRPS): RSD/CRPS is a chronic pain condition characterized by regional sensory, motor, and autonomic disturbances following trauma or injury. While the pathogenesis remains unclear, it is hypothesized that nociceptive input from the affected limb triggers an exaggerated sympathetic response. Epicondylitis-associated RSD/CRPS can manifest with severe pain, swelling, changes in skin color and temperature, and abnormal sweating patterns. Early recognition and intervention are essential to prevent progression to irreversible tissue changes and disability.

Recognition and diagnosis

Thorough history and physical examination: A detailed history should include the onset, duration, and progression of symptoms, as well as exacerbating and relieving factors. Physical examination should assess for tenderness over the epicondyles, range of motion of the elbow joint, muscle strength, and neurological deficits. Provocative tests such as the Cozen's test (for lateral epicondylitis) and Tinel's sign (for nerve compression) aid in diagnosis.

Imaging studies: Radiographic imaging, including X-rays and ultrasound, may be utilized to rule out other causes of elbow pain and assess for structural abnormalities. Magnetic Resonance Imaging (MRI) can provide detailed visualization of soft tissue structures and aid in identifying nerve compression or inflammation.

Nerve Conduction Studies (NCS) and Electromyography (EMG): NCS/EMG are valuable diagnostic tools for assessing nerve function and identifying sites of nerve compression or injury. Abnormal findings suggestive of nerve entrapment or dysfunction may prompt further evaluation and management.

Management strategies

Conservative management: Initial treatment focuses on symptom relief and functional improvement through rest, activity modification, and physical therapy. Nonsteroidal Anti-Inflammatory Drugs (NSAIDs), corticosteroid injections, and

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orthotic devices may be utilized to alleviate pain and inflammation. Occupational or physical therapy programs targeting strengthening, stretching, and ergonomic modifications can improve muscle function and joint stability.

Pharmacological interventions: Pharmacotherapy options include analgesics for pain management, muscle relaxants to alleviate muscle spasm, and neuropathic medications for neuropathic pain. In cases of severe pain or inflammation refractory to conservative measures, short-term oral corticosteroids or local corticosteroid injections may be considered.

Surgical intervention: Surgical release or decompression of the affected nerve may be indicated in refractory cases or those with progressive neurological deficits. Procedures such as radial tunnel release or ulnar nerve decompression aim to relieve pressure on the compressed nerve and restore normal nerve function. Close postoperative monitoring and rehabilitation are essential to optimize outcomes and prevent recurrence.

Multidisciplinary approach: Collaboration with specialists such as neurologists, orthopedic surgeons, pain management physicians, and physical therapists may be necessary for comprehensive management. Multimodal treatment approaches combining pharmacotherapy, interventional procedures, and rehabilitative interventions offer the best chance for symptom control and functional recovery.

Neurological complications associated with epicondylitis pose diagnostic and therapeutic challenges for healthcare providers. Recognition of these complications requires a thorough clinical evaluation, including a detailed history, physical examination, and appropriate diagnostic studies. Management strategies encompass conservative measures, pharmacological interventions, surgical options, and a multidisciplinary approach tailored to individual patient needs. Early recognition and prompt intervention are crucial to optimize outcomes and improve the quality of life for patients affected by epicondylitis-related neurological complications.