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Role of Physiotherapy Management in Post-Fracture RSD Complications: A Case Study

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ABSTRACT

Reflex Sympathetic Dystrophy (RSD) is a neuropathic pain disorder characterised by ongoing pain disproportionate to the degree of tissue injury and persists beyond the usual expected time for tissue healing. Pain is accompanied by sensory, motor, trophic, and autonomic abnormalities. Pain does not follow a particular dermatome or myotome but is rather regional. This disabling condition often develops after a trauma, fracture, or surgery. Three stages are recognised, with clinical and radiographic features are- Stage 1: Acute which is up to 6 months with burning pain; Stage 2: Dystrophic which is from 6-12 months with continuing pain, atrophy of the skin and tissues and contracture of the joint; Stage 3: Atrophic which is after 1 year and the pain is less prominent, and as there is little active movement, the pain is most marked during passive movement. The objectives of physiotherapy management in RSD post-fracture complications include managing pain, reducing swelling, and restoring mobility. The goal is to improve function, prevent complications, and enhance the patient's overall quality of life. This case study involved a 62 years female with a history of a right-hand metacarpal fracture that healed in a malunion position, leading to refl ex sympathetic dystrophy at grade 1. The pain was burning and chronic, and exacerbated during physical activity and Inability to initiate movement of the right hand due to stiffness and reduced range of motion, dystonia and tremors. The patient reported the pain scale of 9 on Numeric Pain Rating Scale (NPRS) with, 30° wrist flexion; 20° wrist extension; 25° MCP flexion; 30° MCP extension. The physiotherapeutic intervention included moist heat therapy and gripping exercises to reduce the swelling and to increase the joint range of motion. Compression gloves were advised to control the oedema and for progression active range of exercises with joint mobilization techniques to improve the mobility. The treatment continued for 2.5 months and the patient responded well and the symptoms for RSD were not seen. The patient progressed with the treatment and started regaining her mobility. The range of motion was improved signifi cantly with continued precision exercises and strengthening. The pain score was also reduced to 6 on NPRS and no signs of visible swelling and oedema were seen. In conclusion, this case highlights the difficulties faced by a 62-year-old woman living with RSD caused by a poorly healed metacarpal fracture. The persistent pain, hypersensitivity, swelling, and limited movement have deeply affected her daily life and independence. Her recovery journey requires a thoughtful, personalized approach, focusing on pain relief, restoring movement, building strength, and regaining her ability to perform everyday tasks. Considering her age and emotional well-being is just as crucial as physical treatment. With ongoing physiotherapy, guidance, and emotional support, the aim is to help her reclaim her functionality and improve her quality of life.

Keywords: Metacarpal, Numerical pain rating scale, Range of motion

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