

Effect of Physiotherapy Rehabilitation after Tendon Grafting in Hand: A Case Study

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ABSTRACT

Flexor tendon injuries of Zone II are among the most challenging hand injuries due to the complex anatomical relationship between flexor tendons and pulley systems. Delayed diagnosis and inappropriate initial management can lead to significant functional impairment, flexion deformities, pain, and restriction in Activities of Daily Living (ADLs). Early surgical intervention followed by structured physiotherapy rehabilitation is essential for optimal functional recovery. A 43-year-old female sustained a glass-cut injury to the left hand 1 year back, which was initially managed with a dressing by a nurse without assessment of tendon integrity. Over time, the patient developed progressive pain, difficulty in performing household activities, and a visible flexion deformity of the left middle finger. Clinical evaluation revealed a Zone II flexor tendon injury involving the Flexor Digitorum Profundus (FDP) tendon of the left middle finger. Surgical management involved exploration and flexor tendon reconstruction using a Palmaris longus tendon graft. Postoperatively, the hand was immobilised in a static splint for 20

days, followed by controlled active mobilisation. The patient was then referred for physiotherapy rehabilitation. Physiotherapy interventions included paraffin wax therapy, wrist flexor and extensor stretching, lumbrical strengthening exercises, soft tissue and scar mobilisation, therapeutic ultrasound over the surgical scar, and progressive grip-strengthening exercises, along with a structured home exercise programme. Pain intensity measured using the Visual Analogue Scale (VAS) reduced from 8/10 pre-physiotherapy to 2/10 after 1.5 months of physiotherapy management. Significant improvement was observed in MCP joint flexion deformity and overall functional hand use. This case highlights the importance of early diagnosis and appropriate surgical management in Zone II flexor tendon injuries. A comprehensive and structured physiotherapy rehabilitation programme following tendon reconstruction is effective in reducing pain, correcting deformity, and restoring functional independence of the hand.

Keywords: Activities of daily living, Flexor Tendon Zone II injury, Hand rehabilitation.

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