Clinical reasoning in traumatic and repetitive microtraumatic hand conditions

Educational article - English edition

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Source article: Grégory Mesplié. Raisonnement clinique dans les pathologies traumatiques et micro-traumatiques de la main. Kinésithérapie la Revue, 2020.

The article presents a modern approach to clinical reasoning in hand therapy. The authors explain that a medical diagnosis alone is insufficient to guide effective rehabilitation. Two patients with the same injury may experience very different pain, functional limitations and recovery. Clinical reasoning therefore seeks to understand the pathophysiological mechanisms responsible for symptoms in order to tailor treatment precisely.

Assessment begins with a detailed history covering previous conditions, occupational and sporting activities, functional goals and psychological factors that may influence pain and recovery. Clinical observation is also essential: it identifies movement compensations, functional non-use, characteristic deformities and trophic changes.

The authors emphasise a comprehensive analysis of symptoms: pain, loss of strength, stiffness, sensory disturbances or clumsiness. Palpation and tissue examination must be precise and systematic to assess anatomical structures, adhesions, instability and inflammatory phenomena. Particular attention is given to oedema and scars, whose biomechanical effects can substantially limit functional recovery.

Movement analysis goes beyond measuring joint range, also considering movement quality, active-passive differences and tissue behaviour. These findings help direct diagnostic reasoning towards a tendinous, capsular, neurological or ligamentous origin. Neuromuscular assessment and specialised clinical tests complement this analysis by examining strength, coordination, stability and structural integrity.

The article also develops modern rehabilitation principles based on neuroplasticity, motor control and proprioception. Treatment progresses from pain management and mobility towards neuromuscular training, co-contraction, automatic reflex control and functional exercises. The authors also emphasise sensorimotor rehabilitation and contemporary approaches to pain, incorporating central sensitisation mechanisms and emotional dimensions.

Ultimately, the article proposes a comprehensive, multidimensional view of rehabilitation of the injured hand, combining biomechanics, pathophysiology, tissue science, neuroplasticity and sensorimotor control to optimise the patient’s functional recovery.