SHROPSHIRE HOSPITALS

HAND THERAPISTS

REHABILITATION GUIDELINES

CARPAL TUNNEL SYNDROME

Definition:

Carpal tunnel syndrome is idiopathic median neuropathy at the carpal tunnel. The pathophysiology is not completely understood but can be considered compression of the median nerve travelling through the carpal tunnel.

Diagnosis:

Diagnosis is based largely on clinical findings but may be supported by neurophysiological examination.

Classification:

- Mild)
- Moderate) see pathway for definition
- Severe – Objective Signs = APB wasting)

Signs/Symptoms:

- Intermittent numbness and paraesthesia in the median nerve distribution of the hand
- Numbness/paraesthesia worse at night with patient often waking to shake hand to obtain relief
- Pain may radiate up to forearm, occasionally to the shoulder
- Frequently bilateral
- Weakness and atrophy of the thenar muscles may occur
- Functional difficulties e.g. fastening buttons, dropping items

Aetiology:

Carpal tunnel syndrome is the most common compression neuropathy – 7-16% in U.K. However neck examination needs to be considered to eliminate any nerve root compression or a double crush.

Risk factors include:

- Female sex (3 times more common)
- Obesity
- Pregnancy
- Hypothyroidism
- Rheumatoid Arthritis
- Activities with high hand/wrist repetition rate

Diagnosis:

Clinical assessment by history taking and physical examination can support a diagnosis of carpal tunnel syndrome. Provocative tests include:

- Phalen's manoeuvre
- Tinels sign
- Durkan test/carpal compression test

Nerve conduction studies are recommended if diagnosis is equivocal

Aims:

- Minimize any swelling
- Maintain full AROM
- Minimize symptoms numbness/paraethesia
- Ensure glide of median nerve and flexor tendons through carpal tunnel
- Upper limb neural gliding
- Maximize functional use
- Education

Treatment – Conservative

Consider:

- Wrist splintage (neutral) = at night and if necessary during the day during activity which aggravates symptoms
- Nerve and tendon gliding exercises/upper limb neural gliding exercises
- Activity modification
- Oedema management
- Education (ARC leaflet, BSSH leaflet)

Localised corticosteroid injection can be effective for transient relief of symptoms (80% of which 22% remain symptom free for 1 year). Injection may also be of diagnostic value. Failure of conservative treatment will lead to surgery

Surgery:

- Open Carpal Tunnel Release
- Endoscopic Carpal Tunnel Release

Treatment – Post Operative

Consider:

- Oedema management
- Nerve and tendon gliding exercises to prevent adhesions
- AROM – Hand and Wrist
- Scar Management
- Sensory work
- Strengthening/work hardening

Return to light work is recommended once the wound has healed. This is longer for heavy manual work as power will be reduced post-operatively.

Complications:

- Haematoma
- Infection
- Adhesions
- Non-Recovery
- Scar Sensitivity
- Pillar pain/Thenar pain – 18%
- CRPS
- Recurrence (rare)

Outcomes:

Levine – C T Questionnaire
Katz Hand Diagram
MSK – HQ

References:

Commissioning Guide: Treatment of Carpal Tunnel Syndrome (2017) Royal College of Surgeons

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NICE Guidelines – Carpal Tunnel Syndrome https://cks.nice.org.uk/carpal-tunnel-syndrome

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The British Society for Surgery of the Hand (BSSH) https://www.bssh.ac.uk

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