



Carpal Tunnel Release with Non Endoscopic Very Small Incision

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Abstract

Compression neuropathies are frequently encountered. Carpal tunnel syndrome is a very common clinical entity. Refractory cases require surgical release with quite long incision. Endoscopic release has advantages of small incision, but not available at all places and not popular. I have developed CTS release with very small incision of about 1.5-2 cm only.

Total 32 patients in prospective study included for this in last five years. Comparison was done in Group A i.e. conventional large incision 6-8 cm and Group B i.e. small incision 1.5-2 cm. Patients were followed up to 9-12 months or so.

Keywords: *Carpal tunnel syndrome, median nerve compression, small incision.*

Introduction

Chronic nerve entrapment syndromes in upper limb are common. Comorbid conditions like diabetes mellitus, thyroid disorders, obesity, ageing are precipitating factors. Among these Carpal Tunnel Syndrome

(CTS) is the most commonly occurring nerve entrapment neuropathy. It occurs due to chronic or acute compression on median nerve in tight space. The carpal tunnel is a tight space bounded by flexor retinaculum on volar aspect which span from hamate and triquetrum to scaphoid and trapezium and carpal bones on dorsal aspect.

In this median nerve shares this space with nine long flexors to thumb and fingers. Most narrow part of the carpal tunnel is 1 cm distal to the proximal margin of the transverse carpal ligament.

Material and Method

In last five yrs. 32 patients were operated for CTS release with female preponderance (27:5), more common on dominant right side, average duration of symptoms were around 18 months (9-42 months).

Pre operative counseling was done for all patients. Nerve conduction velocity and EMG study were done in all cases for evidence and to know any associated disorder.

Initially I used to operate under full anesthesia but now under local tumescence infiltration anesthesia with 1 % Lidocaine with 1:100000 adrenaline.

All cases in group B were initially operated with small incision (1.5 -2 cm) and median nerve is inspected. If there is any evidence of other pathology and chronic compression then incision is enlarged to sufficient size for complete release of CTS but not more than 3.5 cm in all cases.

Even with small incision flexor retinaculum is cut with strong blunt tip curved scissors till there is typical give way feeling. A narrow spatula is used to protect underlying deep structures mainly median nerve and deep palmar arterial arch. It is easy to confirm complete release by pushing scissors tip palmar side and palpated subcutaneously in proximal mid palm.

Longer incision was used in earlier days so in Group A 10 cases are included.

Closure was done in single layer with 4-0 Prolene interrupted sutures.

Average surgical time was 20 min. in uncomplicated cases.

First dressing is done with good padding without splint. Hand elevation in post operative period. Hand and wrist mobilization encouraged as early as possible.

Small incision well protects motor and sensory branches of median nerve which are prone for injury.

Results

In group A (10 pts.) and in group B (22pts.) were operated with routine large and very small incision respectively. The age group from 24 yrs. to 60 yrs. with mean age of 36 yrs. almost same for both groups.

But natural all symptoms were much less with fast recovery with minimum to nil scar in group B.

It is interpreted that small incisions were always better if conditions allow.

Fig: 1A. Routine Large incision



Fig: 2A. Non endoscopic very small incision



Discussion

CTS is a common clinical entity with incidence 1-2 per 1000 and prevalence of 3-4 per 1000 population. In spite of modern diagnostic facilities still a good clinical examination is the important for its diagnosis. Pain in radial digits is the early symptom. Numbness comes late with fluctuating nature. Then numbness becomes permanent with loss of two point discrimination.

Etiology

Causes of CTS may be ganglion cyst, persistent median artery along the median nerve, lipoma, hemangioma, proximal origin of first lumbrical, lunate dislocation, trauma, etc.

Some systemic conditions like renal failure, thyroid disorders, rheumatoid arthritis, diabetes mellitus, etc. to name a few. During pregnancy CTS is common but usually relieved after delivery. Among professional hazards handling of vibratory tools and typing are related to CTS.

History

Proper history has to be taken, time duration, nocturnal pain, numbness- tingling in thumb and index in early stages. Bilateral symptoms are commonly present more so in dominant hand. There is clear female preponderance. Similar proximal symptoms in upper limb are not uncommon.

Double crush syndrome should always be kept in mind.

Clinical examination

In atypical presentations muscle testing, Scratch Collapse Test and specific pain point localization are important to rule out proximal nerve entrapment and Double Crush Syndrome.

In cases of associated unexplained unrelated symptoms and signs other mimicking conditions should be considered.

Electrodiagnostic tests, USG and MRI further add in diagnosis of CTS but are not confirmatory.

Good history and proper clinical examination by an experienced hand surgeon is the main corner stone in diagnosis of CTS.

In refractory cases of CTS surgical decompression is the only answer for this problem. Type of anesthesia depends mainly upon Surgeon's skill, varying from General anesthesia to Local anesthesia. I operate in LA exclusively without tourniquet. But most surgeons use GA and tourniquet. It is a day care surgery. Recovery is fast with small incision. Early mobilization and proper physiotherapy is encouraged.

Postoperatively pain relief is earlier than numbness. Muscle power is gained with exercises. In India as patients remain reluctant for surgical interventions so complete relief in symptoms are not very good.

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