A study of 124 with cases carpal tunnel syndrome

Ali K. AL-Shalchy *

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Summary

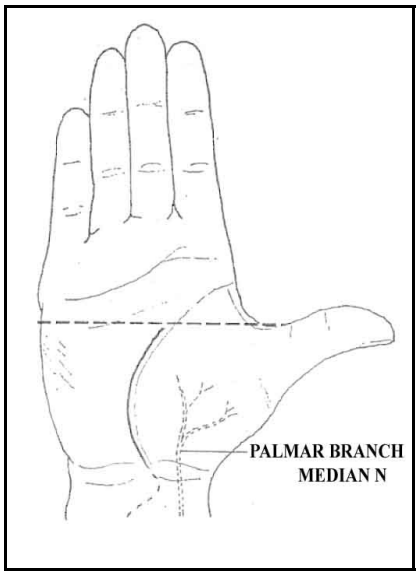
Background: carpal tunnel syndrome (CTS) a relatively common disease affecting ♀ more than ♂, usually at the age between 40 -60 , diagnosed by EMG & NCS, treated when moderate to severe by surgical decompression of the median nerve.
Objective: To study the role of surgery in the management of CTS.
Patients & method: 124 patients collected from the neuro-surgical departments of the specialized surgical hospital from August 2001 till March 2007, all patients studied thoroughly regarding age, sex, associated diseases, clinical features, EMG studies, surgery & out come & follow up for at least one year.
Results & discussion: there was around 2:1 ♀:♂ **,** with age predomena between 40-60 years. All the patients had pain (aching) & most of them numbness, & tingling and only 1/3 had atrophy of muscle of the hand all diagnosed by EMG & NCS, treated surgically results were good compared with other studies regarding complications & final out come.
Conclusion: surgery for CTS is safe & successful surgery under meticulus procedure & appropriate choice of patients.
Keywords: Carpal tunnel syndrome (CTS), Median n. surgical decompression.

Introduction :

CTS is entrapment of the median n. in the flexor retinaculum.(1)
the carpal tunnel is a fibro – osseous tunnel in the palmer aspect of the wrist. It extends from the wrist flexion crease to the distal boarder of the thenar eminence.

The contents of the tunnel are the median n. and the tendons of the flexon digitorum superficialis, flexor digitorum profunds & flexor polticis longus the tendon of the palmaris longus is continous with the palmer aponeurosis.(2)
CTS is more common in ♀, usually at ages of 40-60 the cardinal symptoms are aching, burning, tingling & numbness in the hand which is usually in the radial side of the hand and the lateral 3 digits.2 important signs are Tinel's sign elicted by lightly tapping on the median n. & phalen test by flexon of the wrost. (3,4)
there is high associated of CTS with pregnancy, lactation, contraceptive pills, Menapause, pyridoxine deficiency, toxic shock syndrome. Maintenance haemodialysis. Rhematoid arithritis, obesity, amyloidosis, mucolipidoses, myxedema, acromegally, colle's fractures, Burns at the wrist. (5)
The condition is diagnosed depending on clinical features plus EMG & NCS. (6)

Surgical management: conservative treatment only used in mild short symptoms or if there is a possibility of a reversible cause, but the usual management is surgery skin incision used in the section of the transverse carpal ligament. An incision directly in the volar crease should be avoided, and the palmar cutaneous branch of the median n. should be preserved. Placement of the incision on the ulnar side of the volar crease tends to avoid the motor branch of the median n. (7,8)



**Ass. Professor college of Medicine / Baghdad university Neurosurgeon in the specialized surgical hospital Medical city*

Patients & method

124 patients collected from the specialized surgical hospital neurosurgical department from August 2001 till March 2007. All patients studies thoroughly including age, Gender, clinical features, associated diseases diagnosis, surgical Management, complications, outcome after at least 1 year follow up.

Table 1:

Age	No.	%
0-10	0	0
11-20	0	0
21-30	0	0
31-40	12	9.6%
41-50	73	85.8%
51-60	35	28.2%
Above 60	4	3.2%

Table 2:

Gender	No.	%
♀	85	68.5%
♂	39	31.5%

Table 3: side:

Side	No.	%
RT side	58	46.8%
Lt. side	46	37.1%
Bilatiral	20	16.1%

Table 4: clinical features

Symptoms & signs	No.	%
Aching in the hand (pain)	124	100%
Aching in the hand (pain) more at night	82	66.1%
Numbness	88	70.1%
Tingling	86	69.3%
Tinel's sign	68	54.8%
Phalen test positive	72	58%
Atrophy of the thenar area	45	34.6%

Table (5): Associated disease

Disease	No.	%
Pregnancy	20	16%
Diabetes	18	14.5%
Rhemtoid arithritis	8	6.5%
Acromegally	8	6.5%
None	70	56.5%

Table (6) Investigations

Investigations	No.	%
EMG & NCS	124	100%
Cervical MRI	24	19.3%
Cervical CT scan	6	4.8%
Cervical X-ray	18	14.5%
Blood testes	38	30.6%

Table (7): Management

Management	No.	%
Conservative+surgical	63	50.3%
Surgical	61	49.2%

Table (8): complications of surgery

Complications	No.	%
Wound infection	6	4.8%
Ugly scar	8	6.4%
Pain	4	3.2%
Reccurrane need 2nd surgery	4	3.2%
n. injury (median n. or palmar branch)	0	0

Table (9): final out come after at least 1 year follow up:

Prognosis		
Good	114	92%
Fair	8	6.4%
Poor	2	1.6%

Results & discussion:

There is an obvious ♀ predominance which goes with most studies in the field [3,4], & around 85% of the patients are between age of 40-60 which also goes with most studies [3,4]

The Rt. hand affected slightly more than the left which is explained by the Rt. handed using the Rt hand more & more liability of trauma.

The clinical presentation, all the patients had pain (aching) in nature in the hand & 82% had the typical diurnal variation that the pain is more at night, numbness typically in the lateral side of the hand 88% tingling 86%, 34% had clinical atrophy of the thenar muscles, tinels sign in 55%, phalen test positive. in 58%, & this also goes with most studies in the field [5].

More than half of the cases were idiopathic which also goes with most studies in the field [5].

All the patients the final diagnosis was made by EMG & NCS although some times we needed MRI or CT or plain x.ray. of cervical spine to exlude other pathologics for the symptoms of the patients.

Regarding the management about half of the patients were given a chance for conservative treatments by analgesics and muscle relaxant & physiotherapy & the other half with severe or acute symptoms treated by surgery immediately with no chance for conservative treatment, those who refuse surgery were excluded from the study.

The complications of surgery were wound infection in 4.8% and ugly scar 6.4%, pain (residual) 3.2% , 3.2% require another surgery for reccurrance, & there was not a single injury to the median n. or it's palmer branch.

There results are good compared with other studies as canon & love from mayoclinic, with very close results, [9], & the well known study of phalen [10] & scoggin et al at 1992[11]

The final out come 92%, show good results wether by one or two surgeries 6.4% with mild residnual pain.and only 1.6% did not have relief of their symptoms, these are good results compared wild cannon & love [9] & phalen's study, [10] & scoggi et al [11].

Conclusion: surgery for CTS is a safe successful surgery under meticulous procedures & appropriate choice of patients.

References:

1- Wikins Neurosurgery 2nd edition vol.3 P.3074 – 3075.

2- Grays Anatomy 4th edition vol.5 P. 180-181.

3- Dekel S papainonu T. Rush worth G et al. Idiopathic CtS caused by carpal sterosis Br Med J. 1980 280 1297-1299.

4- Gelber man RH Hergeroeder PT Hargus AR et al. the CTS J bone Joint surg. (Am) 2004.53.A120-124.

5- Ellis J.M. folters kleoy M. et al Responce of vit B_6 defiency and the CTS to pyrodoxine. Proc Natl Acad Sci USA 1982. 79:7494-7498.

6- Gay J R. Love JG., Diagnosis and treatment of CTS. J bone joint surg. 2004. 12,225-230.

7- pit falls in the management of CTS orth. Rev. 1989.18.36-44.

8- Manske PR. Johanston R. pruit et al median nn. decmpression clin orthope. 2002. 103, 98-102.

9- Canon & love, surgical outcome of CTS orth Rev. 1996. 53.120-122.

10- Phalens GS Reflections on 21 years experience with CTS JAMA. 1970.212.1365-1367.

11- Scoggin JF whipple TL.A a potential complication of endoscopic CTS release arthroscopy 1992:8:363-35.