

# The Carpal Tunnel Syndrome: An experience in District and Tertiary Care Hospital Karachi

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## Abstract

**Objective:** To describe the Clinical Presentation and surgical out come in patients, suffering from carpal Tunnel Syndrome.

**Study Design:** Case series observational study.

**Duration:** December 2008 to September 2011.

**Methodology:** This Study includes only female patients with the signs and Symptoms of Carpal Tunnel Syndrome (CTS). The patient diagnosed as case of CTS on the basis of history and Clinical examination was subjected to nerve conduction studies. These patients followed up after 15 days, 3 Months and 6 Months of time period. Patients were advised Physiotherapy & Rehabilitation.

**Result:** In this study a total of 36 female patients ranging in age from 20 to 60yrs, 26 had bilateral and 10 had unilateral disease. The diagnosis confirmed by Nerve Conduction Test. The 09 patients had mild sign and Symptoms, manage conservatively while 05 had moderate and 26 patients had the severe neuropathy with marked wasting of muscle, were operated. Eighty seven % (27 patients) of patients had marked improvement of Symptoms on first follow up.

**Conclusion:** Carpal Tunnel Syndrome is predominantly the disease of middle-aged female. Open surgery is the treatment of choice for severe neuropathy, while mild and moderate types respond to medicine and physiotherapy.

**Keywords:** Carpal tunnel Syndrome (CTS), Nerve Conduction study (NCS) Entrapment Neuropathy, Median Neurolysis.

## Introduction

Symptomatic Carpal Tunnel Syndrome (CTS) accounts for 3% among female and 2% among male population. It is due to ischemia of the median nerve, which results in paresthesia, pain and impaired Conduction<sup>1</sup>.

The ischemia of the Nerve is caused by increase Pressure in Tunnel. Pregnancy, Diabetes mellitus, hyperthyroidism and use of steroids, are Conditions Commonly associated with Carpal Tunnel Syndrome<sup>3, 4</sup>. The forceful Repetitive activities of the hand and wrist are especially associated with Carpal Tunnel Syndrome.<sup>5, 6, 7</sup> Pain, tingling numbness or burning sensation along the distribution of median nerve are the presenting Symptoms. Thinner atrophy<sup>8</sup>, phalen's maneuver and Tinel's sign.<sup>10</sup> are the common sign observed by the physician.

Treatment ranges from wrist splints<sup>11</sup>, NSAIDS, pyridoxine (rit 136); local Corticosteroids injection.<sup>12, 13</sup> to carpal tunnel release Surgery by open procedures. The purpose of the present study was to describe the clinical presentation and outcome after treatment in the various groups of CTS patients depending on the severity of the illness.

## Methodology

This Study included 36 female patients with the signs and Symptoms of Carpal Tunnel Syndrome (CTS). The patient diagnosed as case of CTS on the basis of history and Clinical examination was subjected to nerve conduction studies. The patients admitted were the referred by General physicians and from different OPDs. The period of study was from July 2008 to September 2011. The detail history with special reference life style and occupation of the patients was taken. The relevant clinical signs were recorded. The patients with mild neuropathy on NCS were managed conservatively and those with moderated and severe neuropathy were counseled for surgery. Open surgical release was the procedure performed in the present study. The outcome measures were either "improved" or "not improved" on the basis of patient's history. We

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have followed up after 15 days, 3 Months and 6 Months of time period. Patients were advised Physiotherapy & Rehabilitation.

### Results

This study is based on 36 patients. All were the females ranging from 18 to 60 yrs. Among Them 26 patients had the bilateral while 10 had unilateral disease. The diagnosis of Compartment Tunnel Syndrome was confirmed on median nerve conduction studies, which informed mild, moderate and serve neuropathy shown in table I. Out of 36 patients 22 were operated, who have the mild wasting of thenar muscles as shown in table II. In these pts open surgery (Release of Carpal Tunnel) was performed.

**Table 1:** CTS Diagnosis

Symptoms	No	Percentage
Mild Neuropathy	09	25.0
Moderate Neuropathy	05	13.9
Serve Neuropathy	22	61.1
<b>Total no of pts</b>	<b>36</b>	<b>100</b>

**Table 2:** Treatment of Patients with CTS.

Types	No	Percentage
Conservative	14	38.9
Surgical	22	61.1
<b>Total no of pts</b>	<b>36</b>	<b>100</b>

### Discussion

In this study all the patients were female and came for neurological symptoms. Carpal Tunnel Syndrome is one of the most common entrapments Syndrome<sup>14</sup> and encompasses 45% of non-traumatic nerve lesion<sup>17</sup>. It is more common in female and commonly occurs in age between 20-59 years<sup>16,17</sup>.

Carpal Tunnel Syndrome Prevails in Population exposed to repetitive and force full work<sup>18, 19</sup> and resulted in compensation disputes<sup>20</sup>. In this study all the women's belong lower socioeconomic class, work manually in their homes.

Some diseases like diabetes mellitus, pregnancy<sup>21</sup>& rheumatoid arthritis<sup>22</sup>, hypothyroidism is significant in the co-occurrence of carpal tunnel syndrome and may even cause CTS<sup>23</sup>. As The disease can be reversible in a

period of 3 months if appropriate hormone replacement therapy is not initiated<sup>24</sup>, patient were especially, investigated for clinical features of hypothyroidism. Pain and paresthesia along the territory of median nerve are the common symptoms of presentation<sup>25,26</sup>. Most of the patients presented in this study with pain especially in night. All the patients with sever neuropathy had atrophy of thenar muscles. The diagnosis of CTS is established on clinical finding and NCS<sup>27</sup>, which is the most useful diagnostic technique for NCS in all patients who clinically diagnosed as having CTS.

Twenty-nine patients, in the present study had mild or/to moderate CTS on NCS. As the patients with mild to moderate CTS have quite satisfactory results when treated conservatively<sup>29</sup>, these patients were advocated neutral wrist orthoses (splints) and tendon and nerve gliding exercises<sup>30</sup>. All the patients with severe neuropathy were offered surgery, which was open surgical release procedure, as it is associated with relatively lesser surgical risks<sup>31</sup> easy to perform as an outpatient procedure.

For the patients, the important criteria for judging success of surgery are relief of symptoms, tingling, numbness and sleep disturbance and resumption of important activities<sup>32</sup>. This was the reason, than these criteria were fixed as outcome measures for the patients in present study. The numbness and tingling improved during first follow up (within three weeks), while other symptoms improved on second follow up (three months)<sup>33</sup>.

### Conclusion

Carpal tunnel syndrome is predominantly the disease of females especially of middle age. Open surgery is the treatment of choice for severe neuropathy, while mild and moderate type responds satisfactorily to physiotherapy and medical treatment.

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