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Daily activities which affected symptoms of Thai patients with carpal tunnel syndrome

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Problem/ Background : *Since carpal tunnel syndrome (CTS) is the most common entrapment neuropathy of upper extremity even in Thailand, history taking is the important part in its diagnosis, as there are many daily activities related to this syndrome. Therefore, we try to find the relationships between daily activities of Thai people and symptoms of CTS.*

Objective : *Study on the relationships between daily activities in Thai CTS patients and their symptoms of CTS.*

Design : *Descriptive study*

Setting : *Department of Orthopaedics, Faculty of Medicine, Chulalongkorn University*

Materials and Methods : *Eighty-four patients with CTS, who presented at the Out-patient Department of King Chulalongkorn Memorial Hospital from August 2000 to July 2001, were interviewed about their daily activities related to their symptoms.*

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Results : *Most of daily activities of the Thai people aggravated the symptoms of CTS especially bag carrying, and production of symptoms from wrist flexion was more common than wrist extension.*

Conclusions : *This study demonstrates that most of daily activities produced symptoms of CTS and the data from our study may be useful for history taking in patients with CTS in Thailand.*

Keywords : *Carpal tunnel syndrome (CTS), Daily activity.*

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เหตุผลของการทำวิจัย : *โรคพังผืดรัดเส้นประสาทที่โพรงข้อมือ (Carpal tunnel syndrome (CTS) เป็นโรคของการกดทับเส้นประสาทส่วนปลายที่พบมากที่สุด รวมถึงในประเทศไทยด้วย โดยการซักประวัติเป็นส่วนสำคัญในการวินิจฉัยโรคได้ และพบว่าการประกอบกิจวัตรประจำวันก็มีส่วนในการทำให้อาการของโรคแย่ลง*

วัตถุประสงค์ : *เพื่อศึกษาดูว่ากิจวัตรประจำวันในคนไทยมีผลทำให้ผู้ป่วย CTS มีอาการแย่ลงมากน้อยเพียงใด*

รูปแบบการวิจัย : *การศึกษาเชิงพรรณนา*

สถานที่ทำการศึกษา : *ภาควิชาออร์โธปิดิกส์ คณะแพทยศาสตร์ จุฬาลงกรณ์มหาวิทยาลัย*

ตัวอย่างและวิธีการการศึกษา : *ทำการสัมภาษณ์ผู้ป่วย CTS ที่มาตรวจที่แผนกผู้ป่วยนอกโรงพยาบาลจุฬาลงกรณ์ เกี่ยวกับกิจวัตรประจำวันในคนไทยที่กำหนด มีผลทำให้อาการของโรคแย่ลงหรือไม่แล้วเติมลงในตารางลงผล*

ผลการศึกษา : *จากการศึกษาพบว่ากิจวัตรประจำวันของคนไทยส่วนมากทำให้อาการของโรคแย่ลง โดยเฉพาะการหิ้วของและยังพบว่ากิจกรรมที่ข้อมืออยู่ในท่างอ มีผลมากกว่ากิจกรรมในท่าข้อมือเหยียด*

สรุป : *กิจวัตรประจำวันในคนไทยส่วนมากมีผลต่อการเกิดอาการของโรคและอาจจะช่วยในการซักประวัติคนไข้เหล่านี้*

คำสำคัญ : *โรคพังผืดรัดเส้นประสาทโพรงข้อมือ (Carpal tunnel syndrome), กิจวัตรประจำวัน*

Carpal tunnel syndrome (CTS) is the most frequent encountered nerve entrapment of the upper extremity, caused by median nerve compression in the wrist.[1] It occurs most often in patients between 30 and 60 years old and more common in women than in men. Any condition that reduces the capacity of the carpal tunnel may initiate the symptoms; a malaligned Colles fracture and edema from infection or trauma, and tumors or tumorous conditions such as ganglion, lipoma or xanthoma are among the more common. Systemic conditions such as obesity, diabetes mellitus, and thyroid dysfunction are sometimes associated with the syndrome. Laborers using vibrating machinery are at risk, as are office workers, especially typists and clerks, if they spend long hours with the wrists flexed. The syndrome consists predominantly of tingling and numbness in the typical median nerve distribution in the radial three and one-half digits (thumb, index, long, radial side of ring finger). Patients may describe aching and pain in the thenar eminence, and in severe case may present thenar atrophy. History taking is the important part for the diagnosis of this syndrome. Extreme flexion and extension of the wrist can aggravate the symptoms in the patients.[2-4] Some daily activities worsen the symptoms; these activities may differ from one country to another.

We studied some daily activities that may be specific only to Thai people and differ from other countries.[3] The findings of the study may be useful as a guideline for history taking in the patients with CTS.

Materials and Methods

From August 2000 to July 2001, we studied the patients who were diagnosed carpal tunnel syndrome (CTS) from history of pain and numbness along median nerve distribution of the hand, physical examinations were performed by Tinel's sign and Phalen test, and finally the diagnosis was confirmed by electrophysiological study in all the patients. There were 84 patients (76 female, 8 male). Their average age was 50 years old (ranged 24 to 70). Fifty-one had bilateral and 33 had unilateral hand involvement. Of these 33 with unilateral symptom, 27 had symptom on their dominant hand and six on non-dominant hand. Patient summary data are shown in table1.

Table 1. Patient summary data.

Male	8
Female	76
Age	Average 50 (range 24 – 70 years)
Right hand dominant	76
Left hand dominant	8
Unilateral involve	33
- in dominant hand	27
- in non-dominant hand	6
Bilateral involve	51

We interviewed all the patients about certain daily activities whether they aggravate the symptoms of CTS or not.

Results

From the study we found that the most common activity that causes the symptoms of the patients with CTS worse was bag carrying, the second one was cleaning the house. (Table 2)

Table 2. Number of the patients and % who worse, not worse, and never do the activities.

Daily activity	Worse n (%)	Not worse n (%)	Never do this activity n (%)
Wrist flexion			
1. Brushing teeth	49 (58.33)	30 (35.71)	5 (5.95)
2. Cleaning the house	67 (79.76)	12 (14.29)	5 (5.95)
3. Cooking	51 (60.71)	16 (19.05)	17 (20.24)
4. Bag carrying	75 (89.29)	4 (4.76)	5 (5.95)
5. Griping handle while standing on the bus	52 (61.90)	4 (4.76)	28 (33.33)
Wrist extension			
1. Washing cloth by hand	53 (63.09)	13 (15.47)	18 (21.43)
2. Holding the newspaper while reading	44 (52.38)	23 (27.38)	17 (20.23)
3. Writing	47 (55.95)	13 (15.47)	24 (28.57)
4. Hand holding in prayer	47 (55.95)	19 (22.62)	18 (21.43)

We excluded some patients who never performed the activities and they are showed in table 3, still the same bag carrying was appears as number one that worsen the symptoms. The next one was griping handle while standing on the bus. Activities worsen the patients' symptoms from the most to the least are shown in table 4.

Table 3. Number of the patients and % when exclude patients who never do each activity.

Activity	Worse n (%)	Not worse n (%)	All (n)
Wrist flexion			
1. Brushing teeth	49 (62.03)	30 (37.97)	79
2. Cleaning the house	67 (84.81)	12 (15.19)	79
3. Cooking	51 (76.12)	16 (23.88)	67
4. Bag carrying	75 (94.94)	4 (5.06)	79
5. Griping handle while standing on the bus	52 (92.86)	4 (7.14)	56
Wrist extension			
1. Washing cloth by hand	53 (80.3)	13 (19.70)	66
2. Holding the newspaper while reading	44 (65.67)	23 (34.33)	67
3. Writing	47 (78.33)	13 (21.67)	60
4. Hand holding in prayer	47 (71.21)	19 (28.79)	66

Table 4. Activity worsen patients from the most to the least.

Activity	(%)
Bag carrying	94.94
Griping handle while standing on the bus	92.86
Cleaning the house	84.81
Washing cloth by hand	80.3
Writing	78.33
Cooking	76.12
Hand holding in prayer	71.21
Holding the newspaper while reading	65.67
Brushing teeth	62.03

Discussion

Carpal tunnel syndrome (CTS) is the most common entrapment neuropathy of the upper extremity,[1] caused by compression of the median nerve in the carpal tunnel. Pain, paresthesias and weakness are frequent complaints of the patients. Women are much more frequently affected than men; 78 percent were between 40 and 70 years of age according to Phalen's series.[2] Most patients with CTS can be diagnosed by history taking and physical examination (Tinel's sign, Phalen test), and electrodiagnosis is the gold standard for the diagnosis.[5] In this study electromyography (EMG) was done in every cases to confirm the diagnosis.

In 1981, Reinstein [6] found that most patients had bilateral symptoms, and the dominant hand was more affected than the non-dominant hand on unilateral case; the finding was similar to our study. In 1947, Brain, Wright and Wilkerson[3] proposed relationships between symptoms of patients with CTS and wrist extension position. On the other hand Tanzer[4] in 1959 found that occupations and activities of the patients with wrist flexion is more significant in the production of the symptoms than extension. Example of occupations recorded in his series included milking cows on dairy farm, gardening and ladling soup. In 1981,Gelberman et al.[7] measured intracarpal canal pressure in fifteen patients with CTS, and found that the mean pressure in the carpal canal was elevated significantly from thirty-two millimeters of mercury in neutral position to ninety-four millimeters of mercury with 90 degrees of wrist flexion, while with 90 degrees of wrist extension the mean pressure was 110 millimeters of mercury. The marked elevation of pressure that was noted in the patients when the wrist flexed was not significantly different from that obtained when the wrist extended.

Some daily activities are perhaps specific to Thai people and are the activities with wrist flexion such as carrying a shopping bag, griping handle while standing on the bus and cleaning the house. On the other hand there are some activities that performed with wrist extension such as washing cloth by hand and hand holding in prayer. We found that daily activities of Thai made the patients with CTS worse especially for carrying a shopping bag and griping handle while standing on the bus, and observed that wrist flexion activity made a number of patients worse compared to wrist extension same as previous study of Tanzer[4].

We concluded from the study that most of daily activities in Thai people produced symptoms in patients with CTS. The patient should avoid or modify them if they can such as avoid carrying a heavy bag. Data from our study may be useful as a guideline for history taking in Thai patients suspected of CTS.

Conclusions

Most daily activities in Thai people worsen symptoms of the patients with CTS, and the data from our study can be used as a guideline for history taking in the CTS patients. The patients with CTS should know and modify their daily activities; don't carry a heavy bag, put on the wrist splint while cleaning or cooking, and don't hold the newspaper but place it on table while reading.

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