



## **De quervain's tenosynovitis: Age, gender, side affected and occupation incidence in South Indian population: A prospective study**

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### **Abstract**

**Objective:** This study aims to study demographic data such as age, gender, side affected & occupation in our patients with De Quervain's Tenosynovitis.

**Methods:** This prospective study was conducted in a tertiary care hospital in South India. A total of fifty patients were included in the study after getting clearance from the research and ethical committee. We catalogued data such as age, affected side, gender & occupation in all of our patients.

**Results:** Among 50 patients in our study, 48 were female and 2 were male. The mean age of all the patients is 41.4 years and the mean follow-up was for 1 year. In our study, 86% of patients had right-sided affiliation, 14% of patients had left-sided affiliation & the maximum number of patients (78%) affected were housewives.

**Conclusion:** The mean age of patients was 41.4 years with the female gender commonly involved compared to the male gender. The right-hand side was most commonly affected & the housewives were the most commonly affected occupation

**Keywords:** De quervain's tenosynovitis, occupation incidence, South Indian population

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### **Introduction**

Stenosing tenosynovitis/tenovaginitis of the Abductor pollicis longus and extensor pollicis brevis of the first Extensor compartment of the wrist is referred to as DEQUERVAIN'S DISEASE <sup>1</sup>. In 1895, a Swiss surgeon named Fritz de Quervain originally described it at Kocher's Clinic in Berne, Switzerland. This condition is most common in people who perform skilled work that requires an extended thumb and

wrist in ulnar deviation in female housewives. The severely incapacitating handicap brought on by this illness limits daily activities. Our research sought to understand several demographics, including the distribution of age and gender, occupations, and side of hand afflicted in the south Indian population.

### **Material and Methods**

**Sample size:** This was a prospective comparative study conducted in a tertiary care hospital from September 2018 to September 2020. Fifty patients were included in the study after getting clearance from the research and ethical committee.

**Patient & public involvement:** Inclusion criteria were age group between 20-70 years with pain more than 6 months or pain interfering with daily activities of living. The exclusion criteria include patients having a bleeding disorder, local arthritis, previous surgeries or comorbidities such as diabetes mellitus, hypothyroidism & rheumatoid arthritis.

### **Allocation & Implementation**

The collection of data from patients is as follows.

- a. History by verbal communication.
- b. Comorbidity history.
- c. Local examination of the wrist for local arthritis, skin lesions & previous surgeries.
- d. Clinical examinations-Finkelstein test <sup>[2, 3, 4]</sup> & Extensor pollicis brevis (EPB) entrapment test <sup>5</sup>.

### **Interventions**

Following interventions were done

- a. Age, gender, the side affected & occupation details of the patients.
- b. Blood investigations to investigate comorbidity.
- c. Radiological examination: X-ray wrist PA view <sup>6</sup> & USG <sup>7</sup>

### **Outcome measures**

- a. Age & gender distribution of the patients
- b. The affected side of the patients
- c. Occupation of the patients

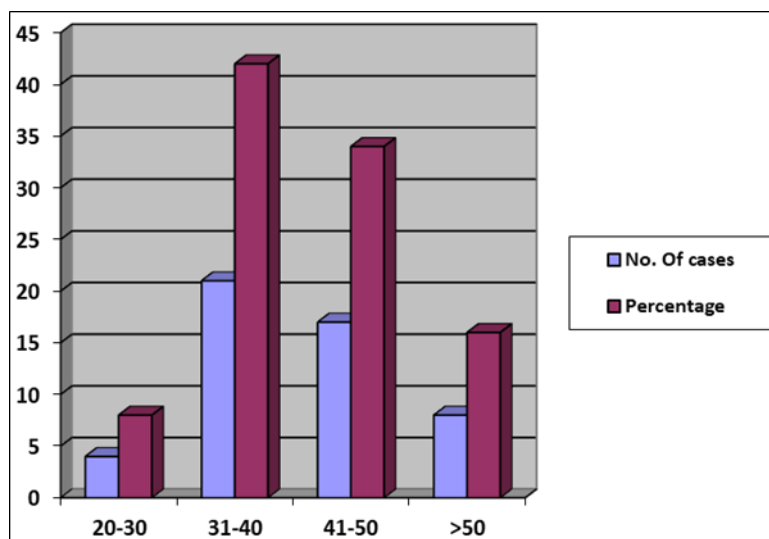
### **Observation & Results**

#### **Age distribution**

In our study, the mean age of the patients was 41.4 years.

**Table 1: Age Distribution**

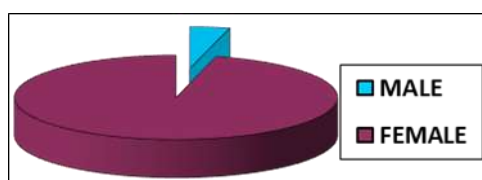
Age Distribution		
Age	No. of Cases	Percentage
20-30	4	8
31-40	21	42
41-50	17	34
>50	8	16
Total	50	100



**Fig 1: Age distribution**

**Sex distribution**

In our study, 96% of cases were female and 4% of the cases were male.



**Fig 2: Sex Distribution**

**Table 2: Sex Distribution**

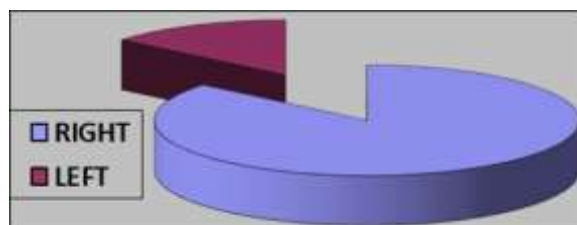
Sex Distribution		
Sex	No of cases	Percentage
Male	2	4
Female	48	96
Total	50	100

**Side Affected**

In our study, 86% of patients had right-sided affiliation and 14% of patients had left-sided affiliation. The dominant hand was most commonly affected in our study.

**Table 3:** Distribution of Patients Based on the Side Affected

Side Affected		
Side	No. of cases	Percentage
Left	7	14
Right	43	86
Total	50	100



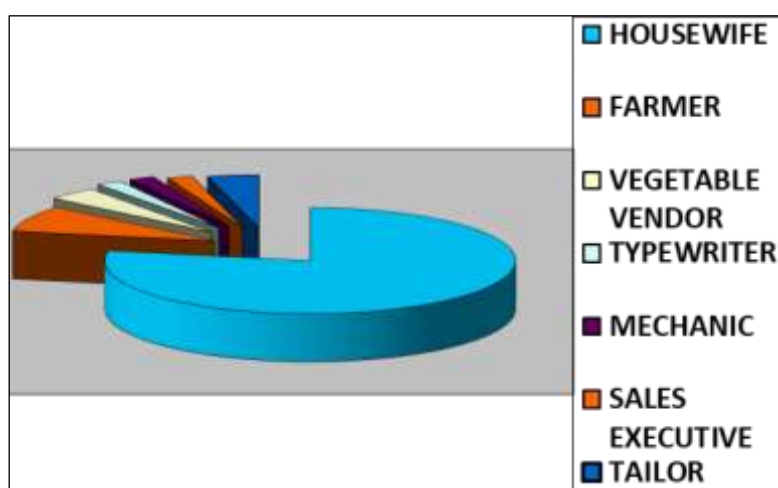
**Fig 3:** Distribution of Patients Based on the Side Affected

### Distribution of patients based on occupation

In our study group, the maximum patients (78%) affected were housewives.

**Table 4:** Distribution of Patients Based on Occupation

Occupation		
Occupation	No of cases	Percentage
Housewife	39	78
Farmer	4	8
Vegetable vendor	2	4
Typewriter	1	2
Mechanic	1	2
Sales executive	1	2
Tailor	2	4
Total	50	100



**Fig 4:** Distribution of Patients Based on Occupation

### Discussion

Chronic repetitive activities that cause tendon sheath inflammation, fibrosis, and stenosis are the cause of Dequervain's tenosynovitis. The movement of the wrist and thumb is restricted as a result. The tendon sheath has thickened due to fibrosis, inflammation, oedema, congestion, and other pathological conditions. Histology reveals infiltration and growth of the fibrous tissues and round cells that make up the tendon sheath.

Excision of the thin strip of the extensor retinaculum, along with the surgical release of the tendon sheaths of the abductor pollicis longus and extensor pollicis brevis, prevents recurrence.

Several case series have reported that DeQuervain's tenosynovitis is a common occurrence, particularly in females between the third and fifth decades of life.

### Age Incidence

**Table 5:** Age Incidence

Study	No of patients	Mean Age
M A Altay	42	48
Abrisham and Hosein	120	45.2
Taufiq and Md Zahid	29	45.1
Johanne and Emile marteau	74	48.5
Our study	50	41.4

In our study, the average patient age was 41.4 years, with 4 patients (8%) falling into the 20–30 year age range, 21 patients (42%) falling into the 31–40 year range, 17 patients (34%) falling into the 41–50 year range, and 8 patients (16%) falling into the > 50 year range.

According to M.A. Altay *et al.*'s study on 42 consecutive patients, the mean patient age was 48 years old <sup>8</sup>. Out of 120 consecutive patients in their investigation, Abrisham *et al.* <sup>9</sup> report that they observed a mean age of 45.2 years. In their study of 29 individuals with de Quervain's tenosynovitis, Taufiq *et al.* <sup>10</sup> found that the mean age was 45.10 10.14 years, with a range of 26-62 years.

According to Johanne <sup>11</sup>, his study of 80 patients with de Quervain's disease revealed a mean age of 48.5 years (with a range of 19-71 years). Lee HJ <sup>12</sup> states that the mean age of the 33 De Quervain's disease patients included in this study was 37.6 years for males and 51.6 years for women, with a range of 26 to 67 years.

Out of 58 patients with de Quervain's disease in his study, the average age of the patients, according to Rankin ME <sup>13</sup>, was 52 years old.

## Sex Incidence

**Table 6:** Sex Incidence

Study	Male	Female
M A Altay	12	47
Abrisham and Hosein	96	24
Taufiq and Md Zahid	8	21
Johanne and Emile marteau	6	68
Our study	2	48

According to M.A. Altay *et al.*<sup>8</sup>, their study included 42 consecutive patients. Six men (14%) and 36 women (86%) participated in the study. Out of 120 patients in their study, 96 were men and 24 were women, according to Abrisham *et al.*<sup>9</sup>.

In a study of 29 individuals with de Quervain's tenosynovitis, 21 (72.4%) patients were female and the remaining 8 (27.6%) were male<sup>10</sup>. According to Johanne *et al.*<sup>11</sup>, 6 of the 68 patients were men and 68 were women.

De Quervain's tenosynovitis was more prevalent in female patients in our sample (96%), which is in line with the findings of other studies, and it most frequently affected the dominant hand.

## Affected side incidence

**Table 7:** Affected Side Incidence

Study	Right	Left
M A Altay	43	16
Abrisham and Hosein	71	49
Taufiq and Md Zahid	22	7
Johanne and Emile marteau	46	28
Our study	43	7

According to M.A. Altay *et al.*<sup>8</sup>, five (12%) instances were bilateral, while 23 patients (55%) had right hand involvement and 14 patients (33%) had left hand involvement. 31 individuals (or 74%) had issues with their dominant hand. In their study of 29 patients with de Quervain's tenosynovitis, Taufiq *et al.*<sup>10</sup> found that the right hand was affected in the majority of cases (75.9%), while the left hand was affected in only 24.1% of cases.

Abrisham *et al.*<sup>9</sup> report that the right hand was involved in 71 (55%) patients, and the left hand was involved in 49 (33%). Five (17.24%) of the 29 patients had de Quervain's tenosynovitis in their non-dominant hands. In their study of 80 individuals with de Quervain's tenosynovitis, Johanne *et al.*<sup>11</sup> showed that 46 patients had right-handed affiliation and 28 patients had left-sided affiliation.

All of the aforementioned studies support the findings of our study, which covered 50 patients, 43 (86%) of whom had right-hand involvement and 7 (14%), who had left-hand involvement.

Although some reports have indicated that it frequently affects the dominant hand, the connection to this condition has not yet been thoroughly elucidated. The sickness is more uncommon in males, although the dominant Hand is unrelated to this condition, which is the main cause of the disease's unclear aetiology.

### **Distribution of patients based on occupation**

Housewife 39 patients (78%), farmer 4 patients (8%), vegetable vendor 2 patients (4%), typewriter 1 patient (2%), mechanic 1 patient (2%) and sales executive 1 patient (2%), were the patients who worked as housewives in our study. Hard workers made up 37.9% of the patients in Taufiq *et al.*'s research of 29 patients with de Quervain's tenosynovitis, housewives made up 41.4%, light workers made up 17.2%, and others made up 3.4%.

From his research on tenosynovitis, Johanne <sup>11</sup> reports that 14 individuals had occupational and 2 had sports-related aetiologies.

### **Conclusion**

De Quervain's tenosynovitis, although frequently unrecognized, is a crippling condition which is far more prone to occur in women. The mean age of the patients was 41.4 years and the most commonly affecting 31-40 years age group. The most commonly affected side was the right side amongst all. It is difficult to designate this disease as an occupational disease, but in this group of 50 cases, the vast majority were individuals accustomed to working with their hands, most commonly involving housewives.

### **References**

1. De Quervain F, Uebereine Form von Chronischer Tendovaginitis Cor. Bl. f. schweiz. Aerzte. 2005;25:389.
2. Eichhoff E. Zur Pathogenese der Tendovaginitis Stenosens Bruns' Beitr. Z. kdin. Chir. 2007;139:746.
3. Huggart FE, Winter EF. De Quervain's Disease: Stenosing Tendovaginitis over the Radial Styloid. Surg. Clinics N Am. 2008;28:817.
4. Dequervain's disease in working women [Failure & complications] ARON'S MS, 1987, 540-544.
5. Finkelstein H. Stenosing tendovaginitis at the radial styloid process. J Bone Joint Surg. 1930;12:509-540.
6. Gray's Anatomy: Descriptive and Applied. Edited by: Johnston TB and Willis J, 30<sup>th</sup> Ed., Longmans, New York, Comprehensive review of radiology Callaway N T. USG Imaging RUMACK, Fundamentals of skeletal radiology Clyde. A. Helms, 2009, 2.
7. Altay MA, Erturk C, Isikan UE. De Quervain's disease treatment using partial resection of the extensor retinaculum: A short-term results survey. Orthopaedics & Traumatology: Surgery & Research. 2011;97(5):489-493. ISSN 1877-0568, <https://doi.org/10.1016/j.otsr.2011.03.015>.

8. Abrisham SJ, Karbasi MH, Zare J, Behnamfar Z, Tafti AD, Shishesaz B. De quervain's tenosynovitis: clinical outcomes of surgical treatment with longitudinal
9. Bashir, Muhammad Salman. Prevalence of De-Quervain's Tenosynovitis among Medical Students of Allama Iqbal Medical College Faiza Taufiq; Tahira Batool; Muhammad Salman Bashir JRCRS. Journal of Riphah College of Rehabilitation Sciences. 2015;3(2):95-98.
10. Garçon JJ, Charruau B, Marteau E, Lulan J, Bacle G. Results of surgical treatment of De Quervain's tenosynovitis: 80 cases with a mean follow-up of 9.5 years. Orthop Traumatol Surg Res. 2018 Oct;104(6):893-896. Doi: 10.1016/j.otsr.2018.04.022. Epub 2018 Aug 23. PMID: 29909297.