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# **To Find Prevalence of Dequervains Tenosynovitis in Postpartum Women using Finkelstein Test**

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**ABSTRACT:** Due to variety of factors, including joint laxity, hormone fluctuation and joint stress from lifting the infant, caring for children and breastfeeding postpartum women are more likely to experience hand and wrist issues. Hence this study was conducted to rule out the prevalence of dequervains tenosynovitis in postpartum women using finkelstein test in age group between 20 to 35years. The study conducted determined the prevalence of dequervains tenosynovitis in postpartum women. 125 participants were enrolled in the study who fulfilled the inclusion criteria. Participants were first given brief idea of study and asked to fill the consent form the data collection sheet. Finkelstein test was performed and each participant was assessed for dequervains tenosynovitis. In the current study 125 participants were enrolled of which 67 participants were primigravida which contributed to 53.60% of the total sample size where as 58 participants were multigravida which contributed to 46.40% of the total sample size. As per data the prevalence of dequervains tenosynovitis was found to be 29.60%. Based on the data analysed this study concluded that prevalence of dequervains tenosynovitis is 29.60%.

**KEYWORDS:** Dequervains tenosynovitis, Postpartum women, Finkelstein test

## **I. INTRODUCTION**

Dequervainstenosynovitis is a painful condition of the wrist tendon and occurs due to tendon inflammation of abductor pollicis longus and extensor pollicis brevis muscles.the wrist's extensor tendons is separated into six extensor compartments by theextensor retinaculum. The APL and EPB tendons are situatedat the first dorsal compartment of the wrist, which is divided from the other five dorsal wrist compartments by a synovial sheath. These tendons are more prone to entrapment because they go via a 2 cm long fibrous tunnel that crosses the radial styloid and passes beneath the extensor retinaculum's transverse fibers. This risk is increased in situations involving acute trauma or repetitive motion. The thickening of the tendon sheath causes the first compartment to shrink, which results in "stenosing" tenosynovitis of the wrist.In 1895, Fritz Dequervain was the first to report this phenomenon of DQT.The anatomy of the human thumb is unique in progressive terms, hence can differ from individual to individual. The anatomical difference is likely cause of developing DQT and reason for some individuals to be highly prone to develop DQT. (1, 2)Patient with DQT may experience soreness and tenderness near radial styloid of the wrist and may affect the daily activities. DQT is a inflammatory condition that affects the synovial sheath surrounding APL and EPB. The presence of neutrophil elastase and cyclooxygenase and changes in the collagen structure of the extensor retinaculum indicates presence of inflammation in patient with DQT. (3)

The wrist is a biaxial joint and provides various range of movement during physical activity. Pregnancy causes joint laxity which consider to be a risk factor for DQT. In pregnancy laxity of the peripheral joint increases and considered to be predisposing factor for joint dysfunction and damage. Moreover, overuse of the wrist during carrying and lifting of the newborn continuously for prolong time and wrapping of the newborn during lactation leads to muscular strain surrounding the wrist joint. (4)

causes: Inflammation:Since Dequervain initially proposed the origin of DQT in his preliminary study, numerous prevailing hypotheses have emerged on the precise etiology of the condition. The predisposition of DQT toward female

sex may also be explained by the inflammatory pathways. According to Shen et al., individuals with DQT exhibit higher levels of expression of estrogen-B receptors (ER-Bs), which are inducers of COX-2 expression. This increased expression is associated with more severe symptomatology. Therefore, women who are menopausal and of childbearing age may be more susceptible to DQT due to an estrogen spike. Treatment strategies that target ER-B may be able to reduce these symptoms with more investigation, especially in women. The expression of inflammatory factors IL-1B, IL-6, vascular endothelial growth factor, and Von Willebrand factor was also shown in a study by Shen et al. (1)

Prolonged Degeneration of Myxoids: Numerous investigations have shown that DQT specimens have inflammatory activity. Given the abundance of data, it is tempting to infer that DQT is caused by inflammation in the synovium and tendon sheath and to stop researching the cause of the condition. Nonetheless, other research indicates that inflammation can be a masking factor for the actual pathogenic character of this illness. Some classic papers have maintained that the inflammatory aspects of DQT are simply the result of myxoid degeneration that takes place in the synovium and tendon sheath. (1) Pathogenesis: The increased pressure over the tendon sheaths causes fibrocartilage to develop, which thickens the tendon. The tendon sheaths are covered in neovascularization. In this syndrome, the tendons also exhibit myxoid degeneration. The first dorsal compartment between the two tendons frequently has a septum, which limits the first compartment's volume and has significant implications for both conservative and operative treatment. (2) DQT pain aggravates with abduction of thumb, grasping movement and ulnar deviation of wrist (4). A recent study suggested that mechanical component of newborn is major factor for postpartum DQT to develop. It also stated that it should suggest high suspicion if primary caregivers present with wrist pain. (5). DQT is significantly associated with pregnancy. In postpartum period the increased load over the tendon through flexion and ulnar deviation when caring for baby may cause inflammation of the tendon (6). The prevalence of DQT in males is 0.5% and 1.3% in females. Various risk factors in postpartum period such as changes in estrogen level and relaxin and progesterone hormone during gestation or continuous thumb and wrist movement during carrying of newborn may cause DQT. Hence it is also called "mommy's wrist or mother's thumb. (3) During last stage of pregnancy mild symptoms of DQT may appear which exaggerates in the postpartum period. Patient presenting with DQT pain complained of aggravating pain during child care. Studies suggest hand and wrist problem are common during pregnancy and postpartum period. 35% of women show suggestive symptoms of hand problems in postpartum period (7). In few cases wrist pain may recover naturally but may progress into chronic condition leading to pain discomfort and causing disability and hampering the daily activities. Hence it is crucial to look upon mothers specific needs and rule out early detection and proper management of hand and wrist. (8) To diagnose DQT Finkelstein test is commonly used in clinical practice. In FT one hand is used to firmly grip the patient thumb while using the other to provide hard traction to the wrist in the direction of ulnar deviation. Pain over EPB and APL tendon is an indication of positive test suggestive of paratendinitis of these 2 tendons. (1,9)

## II. METHODOLOGY

The current study has 125 participants. This study is an observational type of study design. People were selected as per the inclusion and exclusion criteria. Inclusion Criteria: Patient between age 20-35 years, Postpartum women after 1 week, Participants willing to participate Exclusion Criteria: Any history of injury to wrist and hand, History of previous surgery of hand and wrist, Still birth, Abortion, Female who are indulged in occupation that may cause DeQuervain's tenosynovitis (eg; tailor or typist) For the study, postpartum women were recruited from obstetrics and gynaecology department of D.Y Patil Hospital And Research Centre, Kadamwadi, Kolhapur after the D.Y. Patil Education Society Kolhapur Research Ethics Committee approved the study protocol. The complete study and research protocol were explained to the participants. Study respondents were included after providing both written and verbal consent. Postpartum women after 1 week after the delivery were included in the clinical study. Initial information regarding the study was given to the participants. The participants provided written consent in a language they felt comfortable using prior to the start of the study. In this case, participants privacy was respected throughout the study.

After taking the consent the participants were asked to fill the data collection sheet and then Finkelstein test was performed. To perform Finkelstein test participant was in sitting position with hand placed at the edge of the table and therapist standing at the side of the participant. The participant was instructed to make a fist with thumb inside the fingers. The therapist supports the forearm and deviates the wrist towards ulnar side. Pain over APL and EPB at the wrist indicated positive test. Test was performed on both the hand and interpretation was noted in the data collection

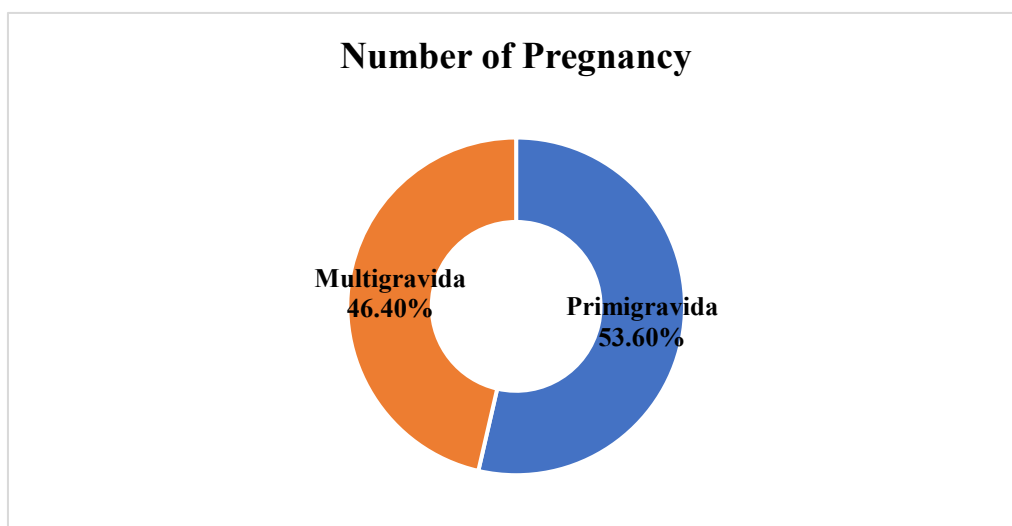
sheet. Later data was analysed using MS Excel sheet. sample size: 125 Prevalence of dequervain's tenosynovitis in women is 1.3%

### III. RESULTS

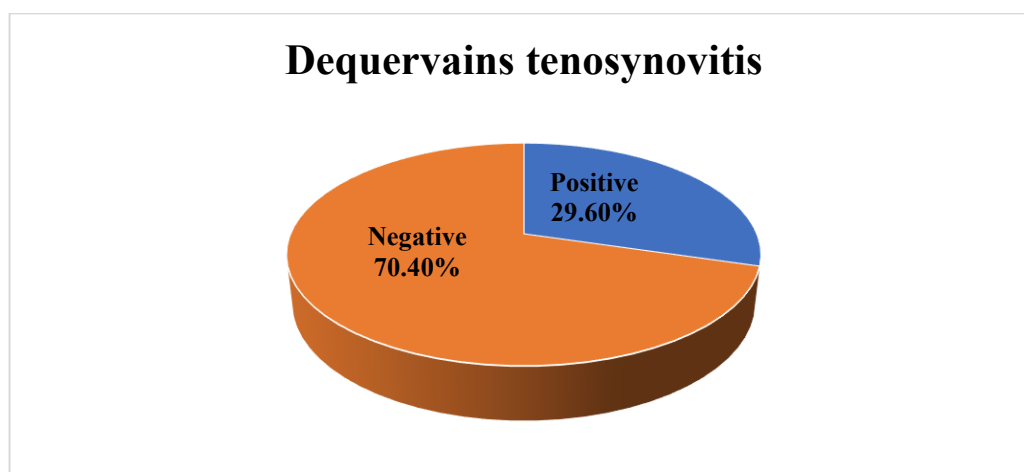
An observational study was conducted for 6 months from October 2023 to March 2024 among postpartum women. In this study 125 postpartum after 1 week of delivery were included in this study. Age of the participants ranges between 20-35 years.

The current study was conducted to rule out the prevalence of DQT in postpartum women. The mean and standard deviation of the age of the participant is 25.216 and 3.68 respectively.

**Table No. 1 Number of pregnancy**



In this study 67 participants are primigravida that is pregnant for first time which contributed to 53.60% of the total sample size. Whereas 58 participant are multigravida that is pregnant for more than 1 time, which contributed to 46.40% of the total sample size. (n=125)



**Graph No. 1 Prevalence of Dequervain tenosynovitis**

The above data represents prevalence of Dequervains Tenosynovitis in postpartum women that 29.60% that is 37 participants out of 125 were found positive for DQT. Whereas 70.40% that is 88 participants out of 125 were found normal. In the current study 125 postpartum women were assessed for DQT using finkelstein test. Out of which 67 participants were primigravida pregnant for first time which was 53.60% of the total sample size whereas 58 participants were multigravida pregnant for more than 1 time which was 46.40% of the total sample size. (n=125) The average mean age and standard deviation of the participants was 25.216 and 3.68 respectively. As per the data analysed the prevalence of DQT in postpartum women was found to be 29.60% that is 27 participants were positive for DQT.

#### **IV. DISCUSSION**

The current study was conducted to find out the prevalence of dequervains tenosynovitis in postpartum women. In the study 125 participants were enrolled based on the inclusion criteria, where the average mean age and standard deviation of participants was 25.216 and 3.68 respectively. In the current study 125 postpartum women were assessed for DQT using finkelstein test, which is an active test where the subject produces a fist with the thumb inside the fingers and then deviates the wrist towards ulnar side. It is frequently used to detect the existence of DQT. The EPB and APL tendons get aggravated as a result. (9) Out of 125 postpartum women 67 participants were primigravida pregnant for first time which was 53.60% of the total sample size whereas 58 participants were multigravida pregnant for more than 1 time which was 46.40% of the total sample size. (n=125) 29.60% participants that is 27 participants were found positive for DQT, whereas 70.40% that is 88 participants were normal. A study by Blen Ferraro was conducted to evaluate the incidence of DQT in primary major caregivers. It stated that mechanical component is a major factor in the development of postpartum DQT. It also concluded that if primary caregivers present with wrist pain it should suggest a high suspicion for DQT. In the female women who are pregnant lactating or of child bearing age likely to have higher rates of the condition. There has been talk of mechanical components contributing to the development of postpartum DQT. Furthermore, there hasn't been any evidence that the dominant hand increases the overall prevalence. Hence some observations conclude that hormonal changes were a major factor in development of DQT in postpartum women or pregnant women. (5) A study conducted by Mohamed G. Ali et. al stated that hand issues are prevalent in the postpartum period and during pregnancy. According to the surveys, up to 35 percent of expectant mothers report having symptoms similar to DQT and carpal tunnel syndrome. In women who are pregnant or just gave birth wrist pain is frequently caused by DQT. (7) A study by Tamami Satoh et. al stated that Maternal education regarding hand and wrist pain assessment should begin during or soon after delivery, as hand and wrist discomfort might result in upper extremity handicap. Self assessment should be promoted as early as possible following delivery. Some people with hand and wrist pain may experience spontaneous resolution but others may develop disorders like DQT which could be effectively treated if caught early. Pain in hand and wrist can affect any mother regardless of parity. Hence midwives and other clinicians might monitor hand and wrist pain, encourage self-assessment and provide preventive information. (8) Thus, as various factors are responsible for hand and wrist problems in postpartum women this study ruled out the prevalence of DQT in postpartum women which was found to be 29.60%.

#### **V. CONCLUSION**

The study was conducted to figure out the prevalence of Dequervains Tenosynovitis in postpartum women after 1 week of delivery. The prevalence of Dequervains Tenosynovitis in postpartum women is 29.60% which is more as compared to normal women which is 1.3%. Hence It is important to rule different hand and wrist conditions in postpartum women as well as hand wrist care is of great importance in postpartum period. Various hand exercise and ergonomic advice should be given for postpartum women to avoid strain and overuse of hand and wrist.

#### **LIMITATIONS**

present study consists of following limitations:

- The study was conducted on particular target population that is on postpartum women.
- The research was restricted to a single geographical area
- Smaller sample size, it may decrease the statistical power to identify connection and may restrict the generalizability of the study.
- Unequal no of primigravida and multigravida participants as it may affect accuracy of the result.

**REFERENCES**

1. Fakoya AO, Tarzian M, Sabater EL, Burgos DM, Marty GI. De Quervain's Disease: A Discourse on Etiology, Diagnosis, and Treatment. *Cureus*. 2023 Apr 24;15(4).
2. Satteson E, Tannan SC. De Quervain Tenosynovitis. [Updated 2020 Nov 1]. StatPearls [Internet]. Treasure Island (FL): StatPearls Publishing. 2020.
3. Wai-si TE, Joanne Y, Yu LK, Lun YK, Christian F, Pui NS. De Quervain's Tenosynovitis: A Systematic and Citation Network Analysis Review. *Biomedical Journal of Scientific & Technical Research*. 2020;24(5):18674-84.
4. Jung KS, Jung JH, Shin HS, Park JY, In TS, Cho HY. The Effects of Taping Combined with Wrist Stabilization Exercise on Pain, Disability, and Quality of Life in Postpartum Women with Wrist Pain: A Randomized Controlled Pilot Study. *International journal of environmental research and public health*. 2021 Mar 30;18(7):3564.
5. Ferraro E, Ferraro J, Pavlesen S, Carlson C, Ablove T, Ablove R. De Quervain's Tenosynovitis in Primary Caregivers. *WMJ: Official Publication of the State Medical Society of Wisconsin*. 2023 May 1;122(2):110-3.
6. Daglan E, Morgan S, Yechezkel M, Rutenberg TF, Shemesh S, Iordache SD, Kadar A. Risk Factors Associated With de Quervain Tenosynovitis in Postpartum Women. *HAND*. 2023 Jan 24;15589447221150524.
7. ALI MG, EMARA HM. Post Natal De Quervain syndrome Treatment: Effect of Diclofenac Phonophoresis Versus Kinesiotape On Pain And Grip Strength. *South Valley University International Journal of Physical Therapy and Sciences*. 2020 Mar 1;2(1):9-16
8. Satoh T, Cadillo LR, Ohashi K, Onishi T. Self-assessed hand and wrist pain and quality of life for postpartum mothers in Japan. *British Journal of Midwifery*. 2022 Aug 2;30(8):467-75.
9. Maurya P, Priyanka G, Palkar A. Prevalence of De-Quervain's tenosynovitis in tailors. *International Journal of Health Sciences and Research*. 2020 Feb;10(2):2249-957.



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