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# Preferred treatment approach to De Quervain Tenosynovitis in nursing women: conservative management or surgery?

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**Abstract. – OBJECTIVE: We aimed to show the effectiveness of different treatment methods in the prevention of clinical symptoms and recurrence of De Quervain Tenosynovitis (DQT), which is often seen in nursing women.**

**PATIENTS AND METHODS: Three different treatment methods were used in 124 patients, all of whom were breastfeeding women who visited our clinic between 2017-2022 with a positive Finkelstein test and DQT. Group I comprised 56 patients who underwent surgical treatment under local anesthesia, Group II, 41 patients who received steroid injections as conservative treatment, and Group III, 27 patients who received wrist splints. The patient files of all groups were reviewed retrospectively, and the effects of the treatment methods on clinical symptoms and recurrence were investigated in patients who were followed up at the 2nd, 4th and 8th weeks.**

**RESULTS: The recurrence rate of Group I patients, which were treated surgically, was significantly lower than that of Group II and III ($p$=0.0001). Among those who received conservative treatment, patients in Group II had significantly lower recurrence rates than those in Group III. At the 8th week of treatment, clinical symptoms had improved by 96.45%, 58.5%, and 7.4% in Groups I, II, and III, respectively.**

**CONCLUSIONS: It is thought that the repetitive movements made during baby care and the edema that develops in breastfeeding women prepare the ground for DQT. Surgery is the most effective treatment method for the improvement of clinical symptoms and prevention of recurrence.**

*Key Words:*
Puerperal disorders, Tenosynovitis, De quervain disease, Surgery, Conservative treatment.

## Introduction

The first dorsal compartment of the wrist contains the abductor pollicis longus (APL), the long abductor of the thumb, and the extensor pollicis brevis tendon (EPB), the short extensor[1,2]. De Quervain Tenosynovitis (DQT) is defined as stenosing tenosynovitis that develops due to the compression of the tendons in the synovial sheath under the dorsal carpal ligament and radial tunnel, as the APL and EPB tendons pass under the first extensor compartment in the dorso-radial side of the wrist[2-4]. Activities that force the thumb into abduction and extension may cause microtraumas and prepare the ground for DQT[4,5]. DQT is seen 6-10 times more in women than in men, especially over 40 years of age. DQT is diagnosed clinically, for which the Finkelstein's test is significant[3-5]. The test is considered positive if the pain is felt on the radial styloid once the patient's thumb is grasped and a rapid ulnar abduction of the hand is performed[5-7]. DQT may cause complaints such as localized tenderness and swelling in the radial styloid region, a limitation in thumb extension and abduction, pain, and weakness[6,7]. During pregnancy and puerperium, the development of edema in the mother's body, as well as the processes that require excessive use of the hand, such as baby care, can cause severe pain and DQT[8]. Nursing mothers usually avoid painkillers[8]. If this disease, which is highly troublesome for the mother, is not treated and the symptoms are not relieved, it will cause the cessation of breast milk, which will ultimately negatively affect the baby[7-9].

We aimed to show the most effective treatment method to improve clinical symptoms and prevent recurrence of DQT in nursing mothers.

## Patients and Methods

Three different treatment methods were used in 132 patients, all of whom were breastfeeding women who visited our clinic between March 2017 and May 2022 with a positive Finkelstein's test and DQT. Patients who did not come to regular follow-ups and who were out of the breastfeeding period were excluded from the study. A

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retrospective examination of the patients revealed that 124 patients met the inclusion criteria. The patients were divided into three different groups. Group I comprised 56 patients who underwent surgical treatment under local anesthesia, Group II, 41 patients who received steroid injections as conservative treatment, and Group III, 27 patients who received wrist splints. A single dose of 1 g cefazolin was administered to Group I patients intramuscularly prior to the surgical procedure. For the mother to continue breastfeeding, antibiotics were not used after the operation and the patients were not hospitalized. Group II patients received a long-acting methylprednisolone ejection under outpatient conditions. The babies of Group I and Group II patients were not breastfed for 24 hours in order not to be affected by the drugs applied to the mother. In this process, the babies were fed with the milk expressed from the mother before the procedure. Resting wrist splints were used for group III patients. The patients in all three groups were given metamizole sodium tablets for analgesia to minimize the effect on the baby. The patient files of all groups were scanned retrospectively, and the effects of treatment methods on clinical symptoms and recurrence were investigated among patients who came in for follow-ups at the 2nd, 4th and 8th weeks with physical examination and Finkelstein test.

### Statistical Analysis

Statistical analyses were performed with the NCSS (Number Cruncher Statistical System, East Kaysville, UT, USA) 2007 SPSS v. 16 (SPSS Inc., Chicago, IL, USA) package program. In addition to descriptive statistical methods (mean, standard deviation) used for the evaluation of the data, the distribution of the variables was checked with the Shapiro-Wilk's normality test. The One-Way analysis of variance test was used for intergroup comparisons of variables, the Tukey multiple comparison test was used for subgroup comparisons, the Chi-square test was used for comparisons of qualitative data, and MacNemar's test was used for repetitive measurements of qualitative data. The results were evaluated at a significance level of $p<0.05$.

## Results

The mean age of the patients was 27.65 (22-35) years. Seventy-three patients had right-sided complaints (58.8%), and 51 patients (41.8%) had left-sided complaints. The sutures of the operated Group I patients were removed in the second week. The mean follow-up time was 9.6 weeks in all groups. No statistically significant difference was observed between the groups in terms of mean age ($p=0.245$) (Table I).

Finkelstein's test and clinical symptoms improved rapidly in all Group I patients in the 2nd postoperative week follow-ups. Mild clinical symptoms were observed to continue, and the Finkelstein's test was positive in 1 patient in the 4th week and in 2 patients in the 8th-week follow-up. Among Group II patients, clinical symptoms recurred, and the Finkelstein's test was positive in 3 patients in the 2nd week, 13 patients in the 4th week, and 17 patients in the 8th week. Among Group III patients, clinical symptoms recurred, and the Finkelstein's test was positive in 26 patients in the 2nd week, in 24 patients in the 4th week, and in 25 patients in the 8th week (Table II).

Regarding Finkelstein distributions, significant differences were observed between the three groups in the 2nd, 4th, and 8th weeks ($p=0.0001$ for all). In the 2nd week, no positivity was observed in the surgery group, and the positivity rate in the conservative steroid group was lower compared to the conservative splint group. At the 4th and 8th weeks, the positivity rate was lower in the surgery group compared to both conservative groups and lower in the conservative steroid group compared to the conservative splint group (Figures 1 and 2).

## Discussion

Fluid retention, starting during the third trimester of pregnancy and exposure to repetitive hand and wrist movements for postpartum infant care, predispose mothers to postpartum De Quervain disease[10-13].There are different surgical and conservative treatment options in the treatment of DQT, a troublesome disease that can even cause weaning[14,15]. On the other hand, we found that, although the second option is not as effective as

**Table I.** Mean age of the groups.

| | N | Age |
|---|---|---|
| **Surgery Group** | 56 | 27.70±3.25 |
| **Conservative Splint Group** | 27 | 26.93±3.85 |
| **Conservative Steroid Group** | 41 | 28.39±3.65 |
| ***p**** | 0.245 | |

*One-Way analysis of variance.

**Table II.** The Finkelstein's test results at weeks 2, 4 and 8.

| | | | Surgery Group n=56 | | Conservative Splint Group n=27 | | Conservative Steroid Group n=41 | | *p*+ |
|---|---|---|---|---|---|---|---|---|---|
| **Finkelstein** | | **Negative** | 56 | 100.00% | 1 | 3.70% | 38 | 92.68% | |
| | **2.Week** | **Positive** | 0 | 0.00% | 26 | 96.30% | 3 | 7.32% | **0.0001** |
| | | **Negative** | 55 | 98.21% | 3 | 11.11% | 28 | 68.29% | |
| | **4.Week** | **Positive** | 1 | 1.79% | 24 | 88.89% | 13 | 31.71% | **0.0001** |
| | | **Negative** | 54 | 96.43% | 2 | 7.41% | 24 | 58.54% | |
| | **8.Week** | **Positive** | 2 | 3.57% | 25 | 92.59% | 17 | 41.46% | **0.0001** |
| **2.Week/4.Week** | | ***p*ǂ** | - | | 0.500 | | **0.002** | | |
| **2.Week/8.Week** | | ***p*ǂ** | - | | 0.999 | | **0.0001** | | |
| **4.Week/8.Week** | | ***p*ǂ** | 0.998 | | 0.999 | | 0.125 | | |

+: Chi Square test; ǂ: McNemar's test.

the surgery in terms of clinical outcomes, a steroid injection is one of the preferable conservative treatment methods, while a wrist splint application is insufficient to prevent clinical complaints in nursing mothers[15-18]. We predict that the wrist splint can be used to support treatment after surgery and steroid administration.

Weiss et al[19] reported that they achieved successful results in wrist splint applications together with steroid injection. They stated that there was no difference between the results of those who received only the steroid injection and patients who received both steroid injection and wrist splints and that therefore, wrist splints were not effective in treating De Quervain tenosynovitis. In their study on 18 lactating women, Afshar and Tebrizi[20] stated that surgery was not required in any of the patients and that the symptoms improved within 4-6 months with steroid injection and NSAID treatment. These results contradict our study. Four-six months is a very long time for breast-feeding mothers, and the lengthy duration of complaints will negatively affect the mother and the baby. Goe and Abzug[21] stated that the symptoms eased in the patients who received steroid injections and splints, but recurred within a short time, and required surgery, after which the symptoms completely regressed. Kivi and Ylinen[22] noted

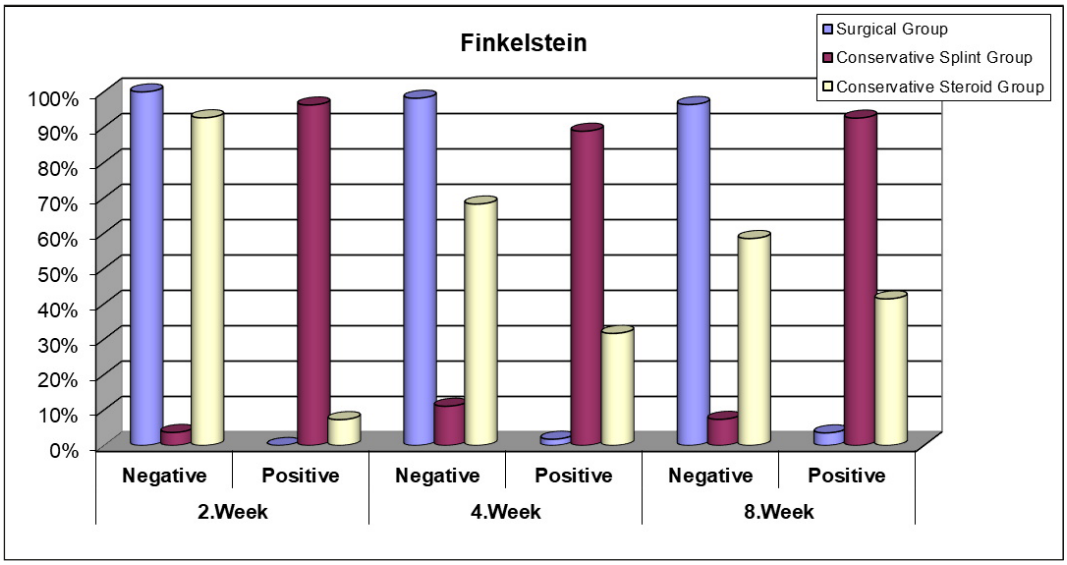


**Figure 1.** Finkelstein's test results.

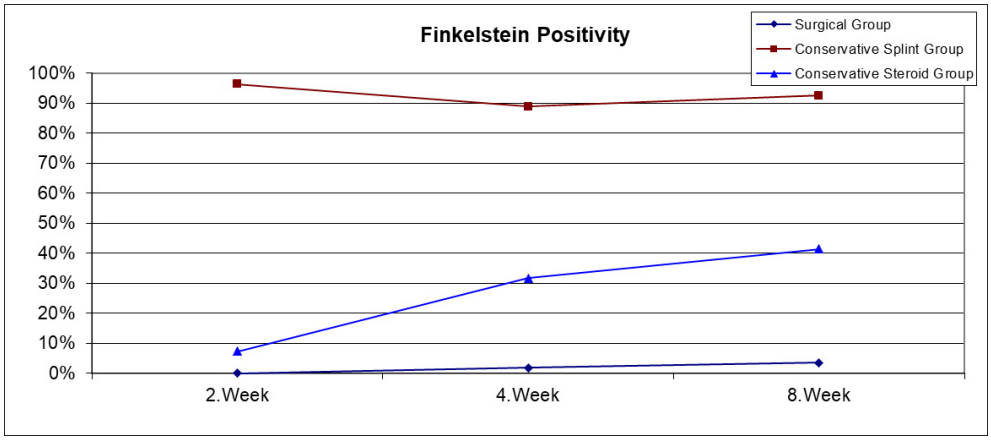


**Figure 2.** Finkelstein's test positivity rates of the groups.

that steroid injection significantly reduced symptoms and eliminated the need for surgery. Ippolito et al[23] stated that splint application alone does not provide benefit, corticosteroid injection is the first choice in conservative treatment, and surgery can be preferred in stubborn cases. Menendez and Ring[24] reported that splint application does not yield favorable results. Goldfarb et al[25] and Stepan[26] noted that corticosteroid injections may lead to adverse reactions.

In their study of 37 cases, Oh et al[27] stated that steroid injection was an effective treatment method but provided short-term relief after 1 or 2 injections in 70% of cases. On the other hand, Karlibel et al[28] reported that paraffin baths, splints, and exercise were effective for treatment. We do not think that such practices will contribute to the improvement of clinical symptoms in nursing mothers.

### *Limitations*

There are various limitations to our study, two of which are the lack of the randomization of patients preoperatively and the retrospective design. Also, although the number of patients seems sufficient to reach accurate results, we think that further studies with more patients may be more beneficial.

## Conclusions

We think that the most effective method for preventing symptoms in DQT, which is a very troublesome and painful process for mothers, is surgery with local anesthesia. A steroid injection may be the first choice as a conservative treatment, while wrist splints are not effective in preventing symptoms. Hoping that our study will shed light on future studies, we think that more comprehensive studies are needed.

### Conflict of Interest

The Authors declare that they have no conflict of interests.

### Funding

None.

### Informed Consent

All patients provided written informed consent for their clinical records to be used for research purposes.

### Ethics Approval

The study obtained approval from the Sakarya University Faculty of Medicine Ethics Committee (Date: 08.08.2022; No. 155094-222). The study was conducted in line with the Declaration of Helsinki.

### Authors' Contributions

Concept: Bedrettin Akar; Design: Bedrettin Akar; Supervision: Mücahid Osman Yücel; Resource: Bedrettin Akar, Mücahid Osman Yücel; Materials: Bedrettin Akar; Data collection and/or processing: Bedrettin Akar, Mücahid Osman Yücel; Analysis and/or interpretation: Bedrettin Akar, Mücahid Osman Yücel; Literature search: Bedrettin Akar; Writing: Bedrettin Akar; Critical Reviews: Bedrettin Akar, Mücahid Osman Yücel.

### Availability of Data and Materials

The dataset used during the current study is available from the corresponding author, however it is not allowed to be shared publicly..


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