



NON INVASIVE MANAGMENT OF POSTPARTUM DEQUERVAIN'S DISEASE

Obstetrics & Gynecology

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KEYWORDS

INTRODUCTION:

De Quervain's tenosynovitis also known as mother's thumb, is a disorder in which the tendons connecting the thumb to the wrist become inflamed and rub against the "tunnel" that encloses them. As a result, the thumb side of the wrist may experience anything from slight discomfort to excruciating pain. De Quervain's disease can affect anyone, although it most frequently affects new moms and is typically caused by wrist tension from constantly lifting a newborn.

The goal of treatment is to get rid of the discomfort and stop the triggering. Pain medication, orthotics, physiotherapy, and corticosteroid injections are all currently approved conservative therapies. The most effective treatment is corticosteroid injection, but it can lead to tendon rupture, a course of more than two injections is nearly never successful, and repeated injections prior to surgery are not cost-effective. As a result, corticosteroid injection is not a long-term therapy choice for many people. 2, 12, 13 Surgical treatment involves Percutaneous and open release of the A1 pulley. 3 Both are reported to be similarly effective with remission of symptoms achieved in 97%-100% of cases. However, it is associated with longer recovery times and more complications including tendon bowstringing, digital Ulnar drift, and nerve injuries.

ESWT is a non-invasive and safe therapy and has been used in the management of tendon pathologies since the early 1990s in order to alleviate pain and improve function. The biological mechanisms by which ESWT induces therapeutic effects on pathological tendon tissue is by shockwaves which facilitate the healing process through the disruption of avascular, damaged tissues, stimulation of growth factor release, stem cell recruitment, and neovascularisation. 5

The goal of this study was to see if ESWT is a safe and effective treatment for postpartum tenosynovitis, given the poor efficacy and lengthy rehabilitation of traditional conservative treatments and the potential complications of surgery.

OBJECTIVES

To investigate the efficacy in pain management of postpartum tenosynovitis mothers without use of any invasive methods or analgesics compared to those without the use of just invasive methods but usage of analgesics.

Review Of Literature:

- deQuervain's tenosynovitis was first described by a swiss surgeon, Fritz de Quervain A Kocher's Cunil s'n Berne, Switzerland in 1895.
- deQuervains tenosynovitis affects abductor pollicis and the extensor pollicis brevis tendons which pass through first dorsal compartment of wrist.
- The exact aetiology of mommy's thumb is unclear studied by Paul J. Spicer Etal.(14)
- Different diagnostics modalities included clinical diagnosis by Bachar Chayaetal(15), quantitative measurement of retinaculum

thickness and intracompartment septum on ultrasound studies by Kwang Hyuion Lee etal(16), review of MR findings in relation to baby wrist by SuzanneR.Anderson etal.(17)

- Different non surgical modalities include management by antiinflammatory, corticosteroid injections, thumb spica casting physiotherapy by Joseph A. Ippolito etal.(18)
- A review of different rehabilitative options studied by Ritugel etal(19) and case series of successful outcome with physical therapy alone by Rabin etal.(20)
- To our knowledge no descriptions were studied for management in period of 2months by combination of 3weeks of 10sessions of ESWT, thumb spica for 3 weeks, usage of local analgesic gel with or without oral analgesic followed by rehabilitation exercises.

MATERIAL & METHODS :

Approval was obtained from local ethical committee with number jec/ 12 postpartum females (8 primi mothers and 4 multiparous mothers) age group (22-25: 3 25-30:4 30-35) with wrist pain (2 dominant hand & 10 nondominant hand), by occupation (10 house wives, & 2 working mothers) who attended as outpatient department of orthopaedico, nri general hospital, chinnakaiani for period of 6months from may 2022 to October 2022.

- included in the study:
- excluded in the study.: patients with skin disorders

After proper clinical assesment, clinical diagnosis was made, results by visual analog scale for period of 2 months who were divided into 2 groups):

Group I (6 patients): patients who undertook eswt, local application of volini gel, thumb spica for 3 weeks, occasional paracetamol oral 1g
Group ii (6 patients) : patients who undertook eswt, application of volini gel, thumb spica for 3 weeks & no paracetamol use.

METHODOLOGY

ESWT (Extra Corporeal Shock Wave Therapy): t-Test

This study will investigate the effect of ESWT on the postpartum women suffering from tenosynovitis of thumb.

The patients' pain severity will be measured by VAS before to treatment, and they will receive three ESWT sessions per week, for a total of ten sessions in 20 days. VAS would be used to assess the results after therapy. Patients will be followed 3 weeks, 5 weeks of therapy, with pain intensity evaluated by VAS during each session.

Inclusion criteria:.

postpartum women with tenosynovitis of thumb

Sample size and sampling:

12 patients with tenosynovitis of thumb undergoing ESWT will be considered

study design: observational study

study tools:

assessment of improvement in pain post therapy will be based on VAS

Statistical Analysis:

The data was entered into excel sheet. Analysis done using appropriate software. Statistical significance analysed by t-Test.

Based on pain:									
	pre	x-x'	sq	post(3 wks)	x-x'	sq	post(5 wks)	x-x'	sq
	8	1	1	4	0	0	2	1	1
	8	1	1	4	0	0	2	1	1
	8	1	1	4	0	0	2	1	1
	8	1	1	4	0	0	2	1	1
	8	1	1	4	0	0	2	1	1
	8	1	1	4	0	0	2	1	1
	6	-1	1	4	0	0	0	-1	1
	6	-1	1	4	0	0	0	-1	1
	6	-1	1	4	0	0	0	-1	1
	6	-1	1	4	0	0	0	-1	1
	6	-1	1	4	0	0	0	-1	1
	6	-1	1	4	0	0	0	-1	1
mean(x')	7			4			1		
sum of sq:			12			0			12
n:	12			12			12		
sum/n:	1			0			1		
root(sd):	1			0			1		
	pre: 7+/-1			post(3): 4+/-0			post(5): 1+/-1		

Between pre and post(3):

1. H0 hypothesis:

The p-value $< \alpha$, and so H0 is rejected. There is statistically significant difference in the mean values of both the groups.

2. P-value

The p-value is 5.026e-7, ($p(x \leq T) = 1$). Therefore, type I error (rejecting a correct H0) is small: 5.026e-7 (0.00005%).

3. Effect size

The effect size d is large, 4.24. The difference between the averages is large.

Between pre and post(5):

1. H0 hypothesis:

The p-value $< \alpha$, and so H0 is rejected. The mean of both group 1 and group 2 is not equal

The difference between the mean of Group-1 and Group-2 is statistically significant.

2. P-value

The p-value is 7.401e-13 ($p(x \leq T) = 1$). Therefore, type I error (rejecting a correct H0) is small: 7.401e-13 (7.4e-11%).

3. Effect size

The effect size d is large, 6. The difference between the averages is large.

Based on analgesic used:										
	used:	pre	x-x'	sq	post(3)	x-x'	sq	post(5)	x-x'	sq
		6	-1	1	4	0	0	0	-0.33	0.1089
		6	-1	1	4	0	0	0	-0.33	0.1089
		6	-1	1	4	0	0	0	-0.33	0.1089
		8	1	1	4	0	0	0	-0.33	0.1089
		8	1	1	4	0	0	0	-0.33	0.1089
		8	1	1	4	0	0	2	1.66	2.7556
mean(x')		7			4			0.33		

sum of sq:			6		0		3.3001
n:	6		6		6		
sum/n:	1		0		0.55		
root(sd):	1		0		0.741		
	pre: 7+/-1		post(3): 4+/-0		post(5): 0.33+/-0.741		

Between pre and post(3) for used analgesic:

1. H0 hypothesis

The p-value $< \alpha$, and so H0 is rejected. The mean of Group-1 and Group-2 is different.

The difference between the mean of Group-1 and Group-2 is statistically significant.

2. P-value

The p-value is 0.0007325, ($p(x \leq T) = 0.9996$). Therefore, type I error (rejecting a correct H0) is small: 0.0007325 (0.073%).

3. Effect size

The effect size d is large, 4.24. The difference between the averages is large.

Between pre and post(5) for used analgesic:

1. H0 hypothesis

The p-value $< \alpha$, and so H0 is rejected. The mean of Group-1 and group 2 is different

The difference between the sample mean of Group-1 and group-2 is statistically significant.

2. P-value

The p-value is 2.826e-7 ($p(x \leq T) = 1$). Therefore, type I error (rejecting a correct H0) is small: 2.826e-7 (0.000028%).

3. Effect size

The effect size d is large, 7.58. The difference between the averages is large.

	not used:	pre	x-x'	sq	post(3)	x-x'	sq	post(5)	x-x'	sq
		6	-1	1	4	0	0	2	0.33	0.1089
		6	-1	1	4	0	0	2	0.33	0.1089
		6	-1	1	4	0	0	2	0.33	0.1089
		8	1	1	4	0	0	2	0.33	0.1089
		8	1	1	4	0	0	2	0.33	0.1089
		8	1	1	4	0	0	0	-1.66	2.7556
mean('):		7			4			1.66		
sum of sq:				6		0				3.3001
n:		6		6		6		6		
sum/n:		1		0		0.55				
root(sd)		1		0		0.741				

Between pre and post(3) for not used analgesic:

1. H0 hypothesis

The p-value $< \alpha$, and so H0 is rejected. There is statistically significant difference in the mean of both Group 1 and Group 2.

2. P-value

The p-value is 0.0007325 ($p(x \leq T) = 0.9996$). Therefore, the type I error (rejecting a correct H0) is small: 0.0007325 (0.073%).

3. Effect size

The effect size d is large, 4.24. The difference between the averages is large.

Between pre and post(5) for not used analgesic:

1. H0 hypothesis

The p-value $< \alpha$, and so H0 is rejected. The mean of Group-1 is not equal to the mean of Group-2.

The difference between the mean of Group-1 and Group-2 is statistically significant.

2. P-value

The p-value is 0.000001952 ($p(x \leq T) = 1$). Therefore, the type I error (rejecting a correct H0) is small: 0.000001952 (0.0002%).

3. Effect size

The effect size d is large, 6.07. The difference between the averages is large.

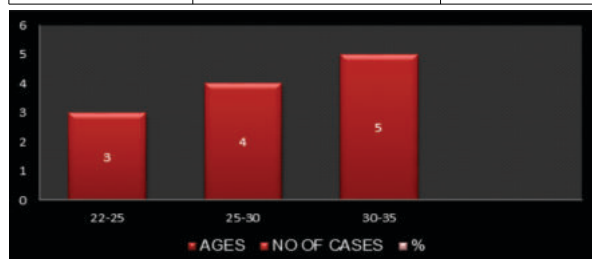
RESULTS:

12 postpartum females were included within age range of 22-35 years, average age of 28.5 years, out of them Primi mothers were 8 (66.6%), Multiparous mothers were 4 (33.33%), developed postpartum wrist pain in dominant hand (2-16.6%), Nondominant hand (10-83.33%) within initial 3 months, Up to 8 months. 10 (83.3%) were housewives and 2 (16.6%) were working mothers.

The conservative treatment in our study is a combination of ESWT for 3 weeks, Thumbspica splint for 3 weeks, application of local analgesic gel with occasional paracetamol in 6 patients and no paracetamol use in the other 6; followed by rehabilitation for 3 weeks. The outcome was assessed based on preESWT and post ESWT VAS score.

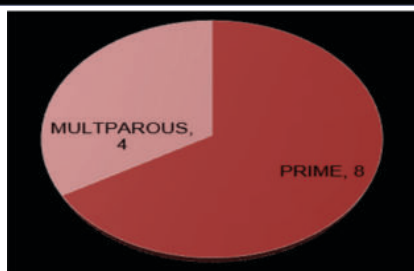
Distribution Based On Age:

AGES	NO OF CASES	%
22-25	3	25
25-30	4	33.3
30-35	5	41.66



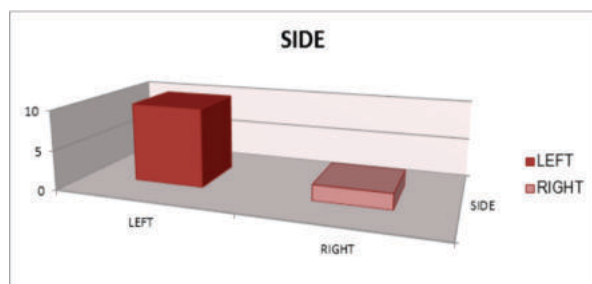
Distribution Based On Parous Women:

PAROUS	NO OF CASES	%
PRIMI	8	66.6
MULTI PAROUS	4	33.3



Distribution Of Affected Side:

SIDE	NO OF CASES	%
LEFT	10	83.33
RIGHT	2	18.18



Based On Occupation:

OCCUPATION	NO. OF CASES	%
HOUSEWIFE	10	83.33
WORKING MOTHERS	2	16.66

Based On Postpartum Pain (Vas Score):

POST PARTUM PERIOD	PAIN(VAS SCORE)	%
UPTO 3 MONTHS	4	33.33
UPTO 8 MONTHS	8	66.66

DISCUSSION:

In this study, we are considering 12 case series of postpartum females of age group 22-35 years who were conservatively managed. In study of CYNDA and JOHNSON Etal(21), 6 case series of age 22-35 years received steroid injection and ibuprofen and had to stop breastfeeding. In our series, overuse of non-dominant wrist and hand by 10 mothers for carrying their babies was significant whereas Suzanne E. Anderson Etal(17) studies reveal overuse of dominant hand in 3 months and bilateral for 1 month as significant.

Regardless of cause, post-partum de Quervain's is best treated by conservative measures (Rest, Stent, NSAIDs) and lead to marked improvement within 1 month compared to control population.

Suzanne E. Anderson(17) suggested conservative treatment by rest immobilization, pain relief as self limiting until stoppage of breast feeding in post partum mothers but **our study** is effective with successful outcome in 2 months & sustained till 6 months, which was assessed by pre ESWT and post ESWT VAS scores.

CONCLUSION:

De Quervain's tenosynovitis (DQT) is a common workplace injury and one of the most common form of stenosing tenosynovitis. The Finkelstein test, Eichhoff test, and/or the wrist hyperflexion and abduction of the thumb (WHAT) test are frequently used in clinical diagnosis. The most effective and reliable test, if one is needed, is a high-resolution ultrasound scan. This evidence-based research developed a precise strategy for treating DQT that includes both surgical and nonsurgical (therapeutic ultrasonography with or without orthoses) methods. However, we discovered that additional high-quality RCTs are still required to promote evidence-based practice, particularly in relation to work-related disorders.

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