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Positioning Techniques to Reduce the Occurrence of DeQuervain's Tendonitis in Nursing Mothers

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Positioning Techniques to Reduce the Occurrence of
DeQuervain's Tendonitis in Nursing Mothers

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Abstract

DeQuervain's tendonitis is an inflammation of two tendons: the extensor pollicis brevis and the abductor pollicis longus as they cross in the first dorsal compartment of the wrist. Symptoms include pain, swelling along the radial aspect of the wrist, and a decrease in thumb motion. A positive Finkelstein's test at examination is seen. Frequently it is caused by repetitively gripping, lifting, and positioning the wrist in flexion, ulnar deviation with thumb extension. It is a common diagnosis in women, referred to as "washerwoman's syndrome". It is also common for new mothers to experience due to the demands their wrists are placed in with having a baby. Treatment options include rest, hot/cold modalities, anti-inflammatories, and splinting, steroid injection and surgery.

The purpose of this paper is to review the current literature on deQuervain's tendonitis and address specific positioning needs for the nursing mother. Very few, if any OB/GYN clinics offer information regarding deQuervain's as part of their birth preparation classes.

The case study is a 40 year old first time mother and her 6 week old infant. M.A. was experiencing symptoms primarily in her left wrist due to poor positioning techniques while caring for her daughter. She demonstrated a positive Finkelstein's test on her Left non dominant hand. M.A. was observed over several months and recommendations were made regarding positioning while nursing and caring for her infant, taking breaks to perform simple range of motion exercises and stretches throughout the day, wearing a thumb spica splint and performing contrast baths. These recommendations were successful in eliminating M.A.'s pain complaints.

Chapter 1 Introduction

In my practice as an occupational therapist I see a lot of new moms with referrals for treatment of deQuervain's tendonitis. DeQuervain's is an inflammatory condition of the EPB and APL tendons as they cross the first DC in the wrist. It is characterized by pain, swelling and tenderness along the radial aspect of the wrist. It is brought on by repetitive movement-frequent wrist flexion with ulnar deviation and thumb extension. This is a common position for new mothers to posture in when nursing or carrying their newborns. In my own baby preparedness classes the focus was on caring for a newborn, not addressing the mother's needs. This focus continues postpartum as a mother will often ignore her own pain complaints as she cares for her newborn. In the review of the literature, deQuervain's is very prevalent in women, nicknamed the "washerwoman's sprain" and its successful outcome relies heavily on early diagnosis and treatment. Even more ideal would be a program to educate new mothers and mothers to be about deQuervain's syndrome and how to position their newborns to avoid it.

There are websites available to those interested in looking up tendonitis related issues, categorized as repetitive strain injuries (RSI). Both Cornell and Harvard have two student led online library resources: <http://ergo.human.cornell.edu/Pub/HFPresentations/NEEemsweb.pdf> and <http://www.rsi.deas.harvard.edu/>. The layout of these websites is user friendly, accurate and updated regularly. For example if you wanted to know, "what is RSI?" just click on the link and you would get a clear, succinct description. You could then click on preventing RSI and treatment approaches to get advice that on how to use simple stretches and exercises to treat one's symptoms.

Although this type of online reference can be very useful for someone with basic symptoms in need of simple education, there is no substitute for hands on therapy. People who are experiencing pain should be evaluated to rule out other diagnoses and be accurately treated by a specialist. The focus of this paper is to encourage an approach that is focused on prevention that targets not only nursing mothers but the instructors of prenatal classes as well.

Statement of Problem

Many new mothers frequently experience wrist pain while nursing their newborns. Pain tends to be along the radial aspect of the wrist. It is speculated that this is due to the position a mother holds her infant in while nursing, with the wrist flexed and ulnarly deviated and the thumb in extension. Many new moms wait to receive treatment for their hand complaints because of their focus on their babies and this delay in treatment has a negative effect on their therapy outcome. Early awareness and instruction in proper techniques for holding their infants can prevent or reduce the severity of this syndrome in new mothers.

Purpose Statement

The purpose of this study is to design a program that will educate new mothers on positioning techniques to prevent or decrease the onset of deQuervain's tendonitis. During baby preparedness classes, parents are given a lot of information on how to take care of a newborn from the time they leave the hospital. In my personal experience, there was no mention of proper positioning while nursing to prevent injury to myself, only successful ways to nurse an infant. It would be beneficial for new mom's to be aware of this information before poor body mechanics occur and inflammation settles within the tendon sheaths.

Research Questions

What are the positioning techniques for a new mother to decrease her risk of deQuervain's tendonitis? What is the best way to present these techniques to help new mothers learn and practice them?

Theoretical Rationale

There are three theories that serve as a rationale for this paper and the preventive education program design: the reinforcement theory, the behaviorism theory and the biomechanical frame of reference. The reinforcement theory was developed by B.F. Skinner and is considered to be a widely studied theory in learning (Patten, 2005). The main idea is that reinforcers can be used to modify and control behavior. The definition has two main components: Contingency, where the occurrence of the reinforcement depends on the occurrence of the learner's response, and Rate of Responding, where the reinforcement serves to increase the learner's rate of responding (WikEd, 2007).

A new mother receives positive reinforcement from her baby when she is able to provide it with basic needs, for example an infant will cry at the smell of his mother's milk and as soon as he is able to latch on, the cries subside as he gets fed. A mother who is experiencing wrist pain while feeding her infant will often ignore these complaints because her baby's well being is her primary focus.

Another theory that B.F. Skinner is also responsible for developing is the behaviorism theory. This theory will be utilized in the way preventative material is presented to new mothers. Skinner is quoted as saying, "Teachers must learn how to teach...they need only to be taught more effective ways of teaching" (WikEd 2008). Skinner (1938) suggests that with all of the obstacles out of the way any age appropriate skill can be taught using his five principles:

- 1) Break the task into small steps
- 2) Work from simple to more complex tasks
- 3) Repeat the directions as many times as possible
- 4) Give immediate feedback
- 5) Give positive reinforcement

In presenting these preventative techniques to nursing mothers as a way to decrease the onset of deQuervain's tendonitis, I would utilize these steps that Skinner outlined. A manual and perhaps a video would be utilized as teaching tools.

The biomechanical frame of reference is an approach that applies the mechanical principles of kinetics to the movement of the human body. These are mechanical principles which deal with forces acting on the body, and their effect on movement and equilibrium. Dysfunction is caused by weakness, low endurance or joint limitation (Pedretti & Pasquinelli 1990). DeQuervain's is a tendonitis that is often brought on by repetitive positioning of the wrists and thumbs. There is also an associated loss of strength with this condition that would affect a person's ability to be independent in their activities of daily living, or ADL's. Proper positioning can prevent or reduce the negative impact of this syndrome.

Assumptions

This research is based on the following assumptions: new mothers often posture their wrists in flexion and ulnar deviation with thumb extension while nursing their infants. This repeated posture can lead to deQuervain's tendonitis. It is also assumed, based on past observations that by maintaining a neutral posture in their wrists while nursing, new mothers can alleviate wrist pain. This neutral position can be achieved through either the use of splints or proper body mechanics. This research also holds the assumption that baby preparation classes

would be an ideal venue for educating women about this syndrome and how to minimize or avoid its effects.

Background and Need

In 1895, a Swiss surgeon by the name of Fritz de Quervain, MD (1868-1940) was the first to describe and treat deQuervain's tendonitis. It is stated in the literature that the first patient who underwent his surgical release was his wife. It is also noted that current management of this condition has not changed much since his initial description (Ahuja & Chung 2004).

A useful test was proposed by an American surgeon, Harry Finkelstein, MD (1865-1939) in 1930. The Finkelstein test is used to diagnose deQuervain's in people who have reported wrist pain. To perform the test, the thumb is placed in a closed fist and the hand is ulnar deviated. If sharp pain occurs along the distal radius, deQuervain's tenosynovitis, or syndrome, is likely (Finkelstein 1930). This syndrome has been diagnosed frequently among new mothers in the Occupational Therapy practice of the researcher, but little has been found in the literature about this syndrome as it relates to that population. The current research project is needed to add to the literature on the causes, treatments and most important prevention of deQuervain's tendonitis, specifically in relation to women who are pregnant and nursing.

Chapter 2 Review of the Literature

In the research I have reviewed I have discovered that most of the material focuses on deQuervain's tendonitis itself, with treatment options and surgical interventions discussed. Two editorials I have found written on new mothers with this diagnosis. One was in the New York Times and the other was an online source for baby products and nursing information. A report was also presented in the Journal of Family Practice that reviewed 6 postpartum women with deQuervain's tendonitis. There was one report written in the Archives of Internal Medicine that looks at six cases who developed deQuervain's during their pregnancy and introduces the concept of hormonal changes as being a possible factor in the onset of this condition. I should also point out that the majority of the literature on this topic was written as far back as the late seventies, there have been very few articles written recently.

The review of the literature is a formulation of studies that discuss deQuervain's tendonitis, giving an overview of the anatomical structures involved, what the signs and symptoms are of this disease, who is most commonly affected, what are the mechanisms to this injury and treatment options. Finally, I address a mothers positioning while nursing and how this affects the likelihood of her getting this disease as well as introduce positioning techniques she could incorporate to avoid injury.

DeQuervain's Tendonitis: An Overview

DeQuervain's tendonitis was first discovered in 1895. It is described as an inflammation of the synovial sheath that lines the two tendons in the first dorsal compartment of the wrist, the extensor pollicis brevis (EPB) and the abductor pollicis longus (APL) (Hunter, Mackin & Callahan 1995; Johnson, 1991; Johnson, 1993).

DeQuervain's presents itself with pain and swelling along the radial aspect of the wrist. Upon examination, a patient would present with a positive Finkelstein test. In this test the examiner places the patient's thumb in flexion and passively places the wrist in ulnar deviation. A positive finding would represent pain along the first dorsal compartment (Hunter, Mackin, Callahan 1995). In an article from the Journal of Hand Therapy, DeQuervain's tendonitis was found to also be associated with decreased grip strength and thumb mobility. (Forget, Potte, Bourbonnais, Aresnault & Harris, 2003)

Who is Commonly Affected?

Women are 3 to 10 times more likely to develop deQuervain's than men (Hunter et al, 1995). There are several reasons: one has to do with the ability of a woman's wrist to angulate further than a man's. Other reasons look at are the repetitive tasks in which a woman uses her hands (Johnson 1991). DeQuervain's tendonitis has had several nicknames associated with it, such as "washerwoman's sprain", "mom's thumb" or "cradle thumb" and "new mom's syndrome" (Hajic, 2005; Hunter et al, 1995; Miller, 2004).

Mechanism of Injury

DeQuervain's tendonitis is caused by repetitive motions in the wrist. Specifically, thumb extension in combination with wrist flexion and ulnar deviation and repetitive gripping. There have been a few cases in which deQuervain's was caused by a direct blow to the radial styloid or an acute strain due to lifting a heavy object. (Hunter, Mackin, Callahan 1995).

A report by Shumamacher, Dorwart and Korzeniowski (1985) introduces the idea that hormones caused by pregnancy may play a role in the development of deQuervain's tendonitis. This report followed 6 women over the course of 2 years. All developed the condition after the 5th month of pregnancy. Of the six, 4 were treated successfully with anti-inflammatories and

splinting. The two other cases who did not receive treatment resolved their symptoms after cessation of breastfeeding.

In an article entitled, "The Effects of Pregnancy on the Musculoskeletal System" Dr.'s Mary Ireland and Susan Mott looked at the various hormonal and anatomic changes that affect a woman's musculoskeletal system. One of the common complaints outlined was deQuervain's tendonitis. Conservative treatment including rest, splinting was recommended and that caution should be taken when prescribing anti-inflammatory medications with this population. Once breastfeeding was discontinued, symptoms often resolved (Ireland, Mott 2000).

Treatment Options

Initial treatment focuses on decreasing the inflammation present in the tendon sheaths. If the specific mechanism of injury was identified then that activity would need to be discontinued or altered. Splinting to keep the wrist and thumb in neutral has been shown to be helpful for rest and while performing possible aggravating activities. Modalities, such as hot and cold packs are applied directly to the radial aspect of the wrist are used. A physician may administer up to 3 cortisone injections into the tendon sheaths of the EPB and APL tendons. These conservative treatments have been shown to alleviate symptoms in 90% of patients with less severe cases (Hunter et al, 1995).

Surgery is recommended when symptoms are severe and have not responded to conservative treatment. The literature cites that within several weeks complete relief of symptoms is achieved with surgical intervention (Hunter, Mackin, Callahan 1995).

New Mothers Positioning While Nursing

New mothers tend to posture their wrists in ulnar deviation, wrist flexion and thumb extension while nursing. This position may be sustained for approximately thirty to 45 minutes

per feeding session. Hormones also play a role in a new mother's susceptibility to injury. The hormone prolactin is elevated in nursing women causing ligaments to increase in laxity, thus the angulation of new mother's wrists while breastfeeding would be greater and put a larger strain on the EPB and APL tendon sheaths (Johnson 1991).

Preventative Techniques

When a new mother is breastfeeding it is important that she keep her wrists and thumbs neutral. She should prop the baby's weight against her body instead of trying to hold the baby up with her arms. There are pillows that have been designed specifically for breastfeeding that take the pressure off of a mother's arms to hold a baby close to her (Hajic, 2005). The use of a forearm based thumb spica splint to position the wrist and thumb in neutral can also be worn while breastfeeding. During the times when a new mother is not caring for her infant it would be beneficial for her to perform gentle stretches to her hands, wrists and upper extremities.

Interview with an Expert

In an interview with K.N, a hand therapist with over 30 years experience in treating hand injuries, a new concept emerged. She felt there was a correlation between carpal tunnel syndrome and deQuervain's tendonitis. K.N introduced the idea that if a woman experienced carpal tunnel symptoms before being pregnant or while pregnant, she was more likely to develop deQuervain's postpartum. This concept makes sense to me and my interviewee discussed this at some length. "If a woman is already prone to inflammation within the carpal tunnel and has continued with poor mechanics while being pregnant and caring for her infant, she is much more likely to develop deQuervain's." Another interesting concept introduced by K.N. was that in her experience, if a woman diagnosed with carpal tunnel syndrome receives treatment while being pregnant, she is less likely to develop deQuervain's later.

The interviewee confirmed the views and themes that I have read from the research on deQuervain's. She believes there is a solid connection between nursing mothers and deQuervain's and the reasons for this have to do with biomechanics, ligament laxity and postures sustained during breastfeeding and taking care of an infant.

The challenges that she faces while treating new mothers has to do mostly with follow through. "New mom's are often so focused on their babies that they rarely listen to their own bodies, even when in pain". This population tends to put off treatment, which has a negative affect on their outcomes. She confirmed my opinion that there was a direct relationship between the length of time a woman waits to receive treatment and her overall success with therapy.

Fortunately, to her knowledge, none of her patients have ever had to resort to surgery and all that continued with therapy recovered with conservative treatment. "Educating patients on how to position themselves while caring for their infants is crucial to improving their symptoms and preventing re-injury" (Interview with an Expert).

Statistics

DeQuervain's tendonitis is a condition that involves the abductor pollicis longus and the extensor pollicis brevis tendons as they cross the first dorsal compartment in the radial aspect of the wrist. Women are much more likely to experience this condition than men, due to the repetitive movements of the hand such as grasping and twisting (Schned, 1986).

In one study conducted, six out of twenty-four female patients (24%) were pregnant or postpartum at the time of onset. Of those six, five women experienced aggravated symptoms due to infant related activities. It was determined that both pregnancy and mechanical factors appear to play a role in causing this condition (Schned, 1986).

Another study compared the efficacy of conservative management of deQuervain's disease in 30 women postpartum (group 1) and 30 nonpregnant women (group 2) (Capasso, Testa, Maffull, Turco & Piluso, 2004). All patients were treated conservatively with 2 weeks of protective splinting, immobilizing the wrist and thumb, followed by hand therapy and anti-inflammatories. Patients were reassessed at 1 and 6 months following. Conservative management gave good results with patients in group one with only one patient requiring surgery versus 25 patients in group 2 undergoing surgery due to failure of conservative management.

In reviewing the literature it is clear that there is a need to further study the occurrence of this injury in postpartum women and how to prevent it from occurring. Because a new mother spends so much of her day in awkward positions caring for her newborn, with an increasing amount of hormone in her body that affects the laxity in her joints, she is at risk for injury. The studies that have been conducted indicate that surgery is not necessarily indicated, and that therapy and preventative education can have a positive effect on a woman's symptoms.

Therefore, the current study is needed to determine the best techniques for avoiding this syndrome and preparing a program of preventative education for new mothers and to mother's to be that can be presented in the context of prenatal education classes. The time to introduce this education is before a mother experiences symptoms or develops "bad habits" with regards to her own postures when caring for her infant. And before she has the positive reinforcement from her baby to care for baby's needs over her own. Yet, there is no mention of this during these classes. The focus is on the baby's needs. As a result, a new mother may not receive treatment until well after patterns are established and inflammation and pain have settled in. This delay in treatment can negatively impact her chances for improvement.

Chapter 3 Method

The research questions this study examines are: What are the positioning techniques for a new mother to decrease her risk of deQuervain's tendonitis? And what is the best way to present these techniques to help new mothers learn and practice them? Therefore the research involves the study of a nursing mother with deQuervain's tendonitis. The research utilizes a qualitative approach using both interviews and observations. The area of focus is to determine the most practical techniques to include in a preventative approach, therefore it is important to gather information using interviews and observations of an actual mother caring for her infant.

Sample and Site

The interview participant is a 40 year old mother and this is her first pregnancy. The researcher spent time observing her as she cares for her child. She has not experienced any hand complaints until after her baby was born. Bailey is now 6 weeks old and at her last well check she weighed 13 lbs. She is breastfeeding approx 7-10 times a day, each feeding lasting approx 30 minutes.

Data Gathering and Analysis

Data was analyzed by collecting the information gathered through interview questions and an observation checklist. Key themes were identified that correlate with the literature review on the subject.

Interview Questions

1. On a scale of 1-10, with 10 being an emergency type pain and 0 indicating no pain, what is your pain scale in your wrists?
2. How does this change when caring for your infant?

3. What makes your pain better? worse?
4. What does a typical 24 hour day look like? How much time do you spend nursing and other activities related to caring for your infant?

Observation Checklist

Subject will be observed while:

1. Breastfeeding
2. Holding
3. Burping
4. Changing diaper
5. Transporting infant to and from crib and car seat

Chapter 4 Findings

Interview and Observations

At the time my interview and observations were conducted with M.A, she was beginning to experience a 5/10 pain in her left non-dominant wrist and a 3/10 in her right dominant wrist. Her pain complaints were often worse at the end of the day (increasing to a 7/10 in left and 4/10 in right), and she noticed discomfort when holding Bailey for long periods of time, i.e. while breastfeeding and rocking Bailey to sleep. Having her hands free helped decrease her pain, and she often woke up with no pain noted at all.

She demonstrated a positive Finkelstein's test on her left non-dominant wrist and a stretch pain along her right dominant wrist. Her grip strength though normal, was painful in left. Upon palpation, she was tender along both first dorsal compartments, left was greater than right.

Typically, M.A. nurses Bailey approx 7 times a day for 30-40 minutes total. This is followed by burping, changing her diaper if necessary and holding her for approx 10-15 minutes before putting her down to do various tasks, i.e.: laundry, dishes, cleaning house, answering emails, telephone calls etc. M.A. rarely takes naps during the day though she states that she should because she reports being "too exhausted" to do anything. She tries to get out for a daily walk, approx 45 minutes with Bailey in the stroller. Recently M.A. has introduced a bottle with Bailey that her husband gives to her at around 10 pm to allow M.A. 5-6 hours of uninterrupted sleep.

Lately Bailey has been spitting up after her feedings. This is a concern to her mother as she is unsure why this is happening. M.A. has been watching her own diet to see if there is any connection to that and Bailey's stomach distress.

Summary

In my observations, Bailey is somewhat of a lazy eater, meaning she nurses for awhile (5-10 minutes) and then starts to nod off. M.A.'s doctor has instructed her to stimulate Bailey to stay awake during her feedings by tickling her feet and rubbing her back with a cold washcloth. I believe that these extra movements that M.A. has to do affects her ability to relax while breastfeeding. She tends to posture one hand directly behind Bailey's head, with a fair amount of tension in her extensors (the tendons that lie on the back of her hand), and the other hand is either in constant motion doing the recommended stimulants, or flexed behind Bailey's bottom to bring her closer to her while nursing

Recommendations

I made several recommendations involving M.A.'s hand placement, to decrease the load on her wrists while nursing and caring for Bailey. The goal is to maintain a neutral position in her wrists and decrease her overall pain complaints. Because M.A. is nursing, it is contraindicated for her to use anti-inflammatory medications.

Recommendations include the use of a supportive pillow for Bailey to be positioned on, thus decreasing the load on M.A.'s hands and wrists, the use of a thumb spica splint on her left non-dominant hand as needed during the day and at night to rest the EPB and APL tendons, performing contrast baths-cold water soaks followed by warm water soaks to both hands for a total of 15 minutes to reduce inflammation within the tendon sheaths, taking breaks for herself when Bailey is not needing care and performing gentle ROM exercises and stretches to her hands and upper extremities. Overall the suggestions made have seemed to help M.A, as she has become more conscious of her position while caring for Bailey and is thus experiencing less pain overall.

In the subsequent visits to M.A.'s home, I have observed that she has taken these suggestions and incorporated them into her breastfeeding routine. She has purchased a breastfeeding pillow that cradles around her midsection and allows Bailey's weight to rest on while nursing. She is no longer placing her hand directly behind Bailey's head for support, rather she is using the crease of her elbow to stabilize Bailey's head so her wrist and hand remain in a neutral position.

When M.A. is not nursing, she is conscious of performing gentle upper extremity stretches and range of motion exercises. She feels immediate relief with these exercises and performs them at least 5 times a day.

Conclusions

At the time of my initial observations, M.A. purchased and was fitted with an over the counter neoprene based thumb spica splint. Though she complained of its bulkiness when trying to do activities, she did feel better while having it on. Due to a decrease in her pain complaints however, M.A. is no longer wearing her splint unless she is experiencing discomfort and will then put it on for positioning while sleeping. She continues to use contrast baths as needed for pain relief.

Overall M.A.'s pain complaints have improved to a 1/10 at the end of the day and her Finkelstein's test is negative bilaterally. Bailey's feedings have improved and she is no longer demonstrating the spit ups as she had previously. M.A. has been in contact with a lactation consultant to assist in other ways to keep Bailey awake during feedings and she feels that this has been helpful.

Chapter 5 Discussion

Summary of Major Findings

There is much agreement among the articles reviewed that deQuervain's tendonitis is an inflammation of the extensor pollicis brevis and abductor pollicis longus tendons as they cross the first dorsal compartment in the wrist. Repetitive loading of the wrists in flexion and ulnar deviation, as well as thumb extension brings on the condition. Treatment options include rest, splinting, ice, anti-inflammatory medications and surgical release. The syndrome can also be prevented with attention to proper body placement and management.

The current study found this to be true, with observations of the mother holding her baby for extended periods of time in positions that led to an increase in her symptoms. The researcher observed that the condition could be reduced in large measure without the use of anti-inflammatory medications using techniques such as use of a special nursing pillow to hold the baby's weight, protective splinting to rest the EPB and APL tendons, contrast baths to reduce inflammation within the tendon sheaths, stretching exercises to her hands and upper extremities and holding the baby in alternate ways.

The population most affected by this diagnosis tends to be women and this is due to a myriad of reasons. First, women commonly use their hands and upper extremities in repetitive tasks. Second they have increased laxity in their joints that allows them to have greater angulation in their wrists. This laxity is increased due to hormones released during pregnancy and while breastfeeding. Lastly, women often put their own needs second and do not seek out treatment until after poor mechanics and inflammation settles into the radial aspect of their wrists. In my observations of M.A. it was clear that she would not have sought out treatment had I not included her in my study. She was ignoring her pain complaints and continuing to place her

hands at risk when caring for Bailey. I believe that had she not received treatment when she did her pain complaints would have only worsened.

Based on this study the following program of education for new mothers and mothers to be is recommended:

- 1) Buy and use a nursing pillow
- 2) Learn these positions for nursing your baby
- 3) Learn these stretching routines
- 4) Take breaks from repetitive tasks with your arms and hands
- 5) If you are beginning to experience pain, do not ignore complaints. Seek out professional help immediately

A video showing new mothers these techniques would be helpful, and a brochure outlining the recommended positions and positions to avoid. Contacts for hand specialists in the area should also be listed in the brochure. In accordance with Skinner's recommendations for teaching new behavioral skills, these are simple steps a woman can take to prevent or reduce the severity of deQuervain's tendonitis.

Limitations/Gaps in the Literature

The current study is limited due to the fact that only one mother was observed. It would have been ideal to have more subjects however getting new mothers to agree to be a part of a study presents a challenge to a researcher. Often new mother's are weary of being observed and feel self conscious caring for and breastfeeding in front of a stranger.

Although it is well documented that deQuervain's is a repetitive stress injury and it is mentioned in the research that deQuervain's affects women more than men, the research does not

fully address the role that deQuervain's tendonitis plays in nursing mothers. There are very few articles that even attempt to make this connection.

This limitation serves as my argument that more research needs to be conducted with this population. There are articles that support the belief that deQuervain's can be successfully treated without surgery and that women who receive treatment have a better chance at overcoming this diagnosis than those who do not. These articles cite that cessation of breastfeeding often resulted in discontinuation of symptoms and I feel that there may be a misconception that breastfeeding causes deQuervain's. It should be pointed out that none of the literature reviewed stated this. The underlying connection with deQuervain's focused more on positioning and hormones related to pregnancy.

Implications for Future Research

Because of the limitations noted with regards to nursing mothers and deQuervain's, I feel it is important to further explore this population. Clearly this is a problem that affects many new mothers and often these symptoms are worsened due to the fact that women are not aware of their positioning while nursing. Efforts made to study the best strategies for educating women about this syndrome and how to avoid it would benefit the health and well being of many families.

Because women often ignore their needs and pain complaints when caring for an infant, it is imperative that they receive preventative education prior to their baby being born. If this information was given to them during their prenatal classes the mothers could be alerted to positions that are aggravating and learn of new ways to maintain a neutral alignment of their wrists while caring for their infant.

Overall Significance of the Literature

The finding of the current study combined with the literature reviewed demonstrates the need for OB/GYN practices to offer preventative education as part of their baby preparedness classes. It also demonstrates the important role of health care professionals to identify the signs and symptoms of deQuervain's tendonitis during follow up appointments and make necessary recommendations for behavior changes as well as treatment.

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