Case Report

Mommy’s thumb: De Quervain’s tenosynovitis in a new mother with cardiomyopathy☆

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Abstract

Mommy’s thumb is a lay term for de Quervain’s tenosynovitis in mothers of newborn to young children. It is most commonly the result of carrying the child, leading to overuse of the wrist. Less commonly, it can also result from fluid retention resulting from lactational changes. We present a case report of a first-time mother presenting with bilateral de Quervain’s tenosynovitis which may be attributed to a previously undiagnosed cardiomyopathy leading to fluid retention.

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Introduction

“Mommy’s thumb,” also known as “Baby’s wrist,” is a condition most commonly seen in mothers approximately 8 months postpartum. It is tenosynovitis, also known as de Quervain’s tenosynovitis, of the first dorsal wrist compartment. This diagnosis is thought to most commonly result from overuse due to repetitive trauma of the wrist encountered while carrying babies. In this situation, the wrist is held in flexion and ulnar deviation while the thumb is in extension [1]. One other cause is thought to be endocrine in origin leading to fluid retention in lactating mothers, which may be seen within the first 3 months postpartum [2–5]. Baby wrist is well described in the lay literature. However, there is limited discussion of the topic in the medical literature. This is particularly true with regards to the Radiology literature, where only one article on the MRI findings was discovered to the best of our knowledge [1]. In this case report, we present an ultrasound case of a 19-year-old patient who presented with bilateral wrist pain in the first week postpartum, which ultimately may be the result of a previously undiagnosed cardiomyopathy.

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Case report

A 19-year-old G1P1 female presented 5 days postpartum for bilateral wrist pain after delivery of her first child at an outside institution. She states the pain began 2 days postpartum. She was admitted to the internal medicine service who noted the wrists were swollen, erythematous, and warm. The pain was aggravated by movement. She denied fever or infections during her pregnancy. She was treated for a urinary tract infection immediately postpartum. Initially, she did not report any prior medical history, medical complications during pregnancy, or wrist symptoms. However, she did later describe symptoms which began during her pregnancy to the cardiology service, which are detailed below. She reports that she had not been able to hold her child after delivery due to both she and the baby being transferred to our institution after delivery. The baby’s birth weight was not available.

She was initially evaluated by orthopedic surgery who did not recommend joint aspiration or incision and drainage as there was no suspected effusion based on physical exam. Infectious disease and Rheumatology were consulted and antibiotics were started for the urinary tract infection. White blood cell count was elevated at 13.4 k/ul (3.7-10.3 k/ul normal range), presumably due to the urinary tract infection. Blood cultures were negative. An elevated C-reactive protein of 12.9 mg/L (0-10 mg/L normal) and erythrocyte sedimentation rate of 72 mm/hr (20-50 mm/hr normal) were detected, however these values may be elevated in the normal postpartum period. Family history was found to be positive for systemic lupus erythematosus in her grandmother and Sjögren’s disease in her mother.

Bilateral wrist ultrasound was requested for pain and concern for septic joint. The areas of concern were marked on the patient’s skin, which correlated with compartment one of the dorsal wrist bilaterally (Figs. 1 and 2). Ultrasound images demonstrated synovial thickening and increased vascularity on color Doppler images in compartment one bilaterally, left worse than right. Fluid was noted in the tendon sheaths; however, no fluid was noted in the joints of the wrist bilaterally. The findings were consistent with the diagnosis of bilateral compartment one tenosynovitis, also known as de Quervain’s tenosynovitis.

Cardiology was subsequently consulted to perform an echocardiogram for continued clinical concern for bilateral wrist septic joint from an unknown source, despite the ultrasound findings. Cardiology elicited a history of shortness of breath which began a few months into her pregnancy. At that time, she also developed numbness and tingling in her hands and forearms and swelling in her ankles. As previously noted, the wrist pain began 2 days postpartum. Echocardiogram was performed and no evidence of endocarditis was noted. However, the echocardiogram did detect a decreased systolic function with an ejection fraction of 40%-50%. Her electrocardiogram and thyroid function tests were normal. Cardiac MRI was then performed which indicated an ejection fraction of approximately 50%, mildly enlarged left ventricular cavity size, mild left ventricular hypertrophy and hypertrabeculation. These findings were consistent with a diagnosis of noncompaction and peri-partum cardiomyopathy. Consequently, she was started on a beta-blocker and an ACE-inhibitor prior to discharge.

Follow-up visit to the cardiology clinic at both 2 weeks and 4 months indicated she was without symptoms with regards to both her wrists and cardiac diagnosis. A repeat echocardiogram was performed at 4 months which showed a normalized left ventricular ejection fraction of greater than 55%.

Discussion

"Baby wrist" is the result of de Quervain’s tenosynovitis of the first dorsal wrist compartment. It is most commonly encountered in mothers approximately 8 months postpartum as a result of carrying their babies. This causes overuse and myxoid degeneration of the extensor pollicis brevis and abductor pollicis longus tendons [6]. One other documented cause is fluid retention in the first 3 months postpartum associated with lactation.

Our case is proven to be bilateral de Quervain’s tenosynovitis as noted by the ultrasound images. With ultrasound, tenosynovitis typically appears as a combination of findings including synovial thickening and fluid within a tendon sheath, thickening and hypoechogenicity of the tendon,
and increased blood flow to the synovial lining of the tendon sheath with color Doppler images.

However, the precipitating cause of the bilateral tenosynovitis is less certain. In our case, the symptoms initially began as swelling during pregnancy and ultimately resulted in bilateral pain on postpartum day 2. The patient had limited contact with her child since it was in the newborn nursery initially at the outside institution and then transferred to our tertiary center for complications. Therefore, our patient did not have sufficient contact with her newborn baby in the first week postpartum to suggest overuse as a cause. Postpartum de Quervain’s tenosynovitis may occur in the first 3 months in lactating females. Our patient did not choose to breast feed; however, this remains one possible cause for her diagnosis.

In our case, the most likely cause of her bilateral de Quervain’s tenosynovitis was her previously undiagnosed cardiomyopathy and noncompaction. This diagnosis would help explain her pregnancy related symptoms of shortness of breath and tingling in her hands and forearms. This is further supported by her resolution of symptoms within 2 weeks after beta blocker and ACE-inhibitor therapy was initiated.

Regardless of the cause, postpartum de Quervain’s tenosynovitis is best treated with conservative measures. Rest, splinting, and pain relief with nonsteroidal anti-inflammatory drugs is considered appropriate therapy [1,7]. In one study, these conservative measures lead to marked improvement in nursing mothers within one month, as compared to the control population. In the same study, at 6 months, only one nursing mother out of thirty required surgical treatment whereas 25 of 30 from the control population required surgery [7]. In our patient, the symptoms resolved in 2 weeks without specific instructions for her wrist pain. Again, this suggests that by treating the cardiomyopathy with a beta blocker and an ACE inhibitor may have also led to improvement of her wrist pain.

**Patient consent**

Written informed consent was obtained from the patient featured in this case report.

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