

*Invited lecture/Review*

Physiotherapy Approach for De Quervain Tenosynovitis During and After Pregnancy

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Abstract:

De Quervain's tenosynovitis is an attritional and degenerative process. Pain results from resisted gliding of the abductor pollicis longus and the extensor pollicis brevis tendons in the fibro osseus canal. This review aims to evaluate the current literature surrounding evidence on physiotherapy approach for treating De Quervain's tenosynovitis during and after pregnancy. One third of pregnant females are suffering from the pain in their wrist. Pain in the wrist is the third most common musculoskeletal pain during pregnancy after low back pain. Fluid retention, oedema, and repetitive forceful hand movements may cause stenosing tenosynovitis of the hand and wrist tendons. An overweight mother with her first pregnancy is at highest risk for developing De Quervain's tenosynovitis. Treatment is aimed at reducing inflammation, preserving movement in the thumb and preventing reoccurrence. The symptoms should improve within four to six weeks. If non-invasive treatment is not successful, corticosteroid injections can be applied.

De Quervain's tenosynovitis has a good prognosis and non-surgical treatments are usually effective for pregnancy-related hand and wrist problems.

Keywords: de Quervain's tenosynovitis, pregnancy, post-partum, wrist pain, Finkelstein test



1. De Quervain's tenosynovitis

1.1. Stenosing tenosynovitis

De Quervain's tenosynovitis (DQT) is a stenosing tenosynovitis of the first extensor compartment of the wrist (Ilyas et al., 2007). It is described to be an attritional and degenerative process, triggered by stenosing inflammation of the tendon sheath in the first dorsal compartment of the wrist (Ramchandani et al., 2022). Pain results from resisted gliding of the abductor pollicis longus and the extensor pollicis brevis tendons in the fibro osseus canal (Ilyas et al., 2007). This review aims to evaluate the current literature surrounding evidence on physiotherapy approach for treating De Quervain's tenosynovitis during and after pregnancy.

1.2. Epidemiology

According to previous reports, DQT occurs up to six times more frequently in women than men and is associated with the dominant hand use during middle age (Ilyas et al., 2007). Often it is noted in pregnancy and during the postpartum period (Ramchandani et al., 2022).

1.3. Etiology

In a descriptive study conducted by Kesikburun et al. (2018) 61 out of the 184 pregnant females complained of musculoskeletal pain in the hand and wrist in pregnancy. These problems were the third most common musculoskeletal complaints, after low back pains (Afshar & Tabrizi, 2021). Balik et al. (2014) studied the hand and wrist problems in 383 pregnant females and reported that 125 (32.6%) of pregnant females were asymptomatic patients and 67.4% of the pregnant females were suffering from hand and wrist problems (Balik et al., 2014). This condition is also the second most common hand and wrist problem during pregnancy and during the postpartum period after carpal tunnel syndrome (Thabah & Ravindran, 2015).

Fluid retention, oedema, and repetitive forceful hand movements may cause stenosing tenosynovitis of the hand and wrist tendons (Kesikburun et al., 2018). Read et al. (2000) studied the histopathological appearances. Histopathological examination of the tendon sheaths revealed that myxoid degeneration was responsible for the remarkable thickening observed in the sheath. In addition, characteristic intramural deposits of mucopolysaccharides were present, predominantly in the sub synovial region. However, acute, or chronic inflammatory changes were not seen (Read et al., 2000). Etiology of this condition is combination between mechanical factors, anatomical dimorphism, and hormonal-driven pathological changes (Thabah & Ravindran, 2015).

1.4. Risk factors

People between the ages of 30 and 50 have higher risk of developing De Quervain's tenosynovitis than people in other age groups (Kesikburun et al., 2018). The condition may be associated with baby care, lifting a child and moves that involve repetitive movements using the thumbs as leverage. Studies showed that women who had caesarean section and multiple gestation were at higher risk for De Quervain's tenosynovitis, while baby weight was not associated with the condition (Bae et al., 2023). Daglan et al. (2023) concluded that an overweight mother with prolonged pregnancy and her first pregnancy is at highest risk for De Quervain's tenosynovitis.



2. Treatment

2.1. Symptoms

Symptoms of De Quervain's tenosynovitis include pain near the base of the thumb, swelling, difficulty moving the thumb as well as the wrist and also some sensation can be felt in the thumb while moving it (Ilyas et al., 2007). The pain gets worse while grasping, lifting and during any motion where ulnar deviation of the wrist is present. Tenderness over the radial styloid can be felt as well as thickened first extensor retinaculum (Read et al., 2000).

2.2. Physiotherapy examination

We ask the patient to perform Finkelstein test in which patient bends their thumb across the palm and bend their fingers over the thumb. Then they bend their wrist towards little finger. If that manoeuvre causes pain on the radial side of the wrist, then the patient most likely has De Quervain's tenosynovitis.

2.3. Physiotherapy treatment

Possible treatment is application of the brace, especially during the night, in worse cases steroid injection is possible. On rare occasions that the non-surgical treatments fail to resolve the symptoms within 4-6 months, surgical release of the first extensor compartment can be offered (Ramchandani et al., 2022). Pidgeon (2022) reported that 50 % - 80 % of patients are successfully treated nonsurgically. Treatment is aimed at reducing inflammation, preserving movement in the thumb and preventing recurrence. The symptoms should improve within 4-6 weeks if the treatment starts early. But it is more likely that the condition will get better around the end of either pregnancy or at the end of the breastfeeding. (Balik et al., 2014).

If any of the interventions are not successful, the corticosteroid injection can be applied, (Peters-Veluthamaningal et al., 2009). With safe dose of Methylprednisolone 10 mg (Avci et al., 2002) no contraindications during pregnancy or while lactating were seen (Larsen et al., 2021).

3. Conclusion

De Quervain's disease of pregnancy and lactation is self-limited condition and non-surgical treatments are usually effective for pregnancy-related hand and wrist problems. In general, pregnancy-related De Quervain's tenosynovitis has a good prognosis and usually resolves after reducing inflammation and movement preservation.

Conflicts of Interest: The authors declare no conflict of interest.

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