CASE REPORT OLGU SUNUMU

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Reversible Hypopigmentation and Atrophy After Corticosteroid Injection in De Quervain's Tenosynovitis

De Quervain Tenosinovitinde Kortikosteroid Enjeksiyonu Sonrası Gelişen Geçici Hipopigmentasyon ve Atrofi

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ABSTRACT De Quervain tenosynovitis is a stenosing tenosynovitis that occurs as a result of repetitive movements and overuse of the abductor pollicis longus and extensor pollicis brevis tendons located in the 1st dorsal compartment of the wrist. Conservative methods are used 1st in the treatment. Physical therapy methods, splints for immobilization, nonsteroidal anti-inflammatory drugs, and corticosteroid (CS) injections are used to reduce irritation and inflammation in the tendons. Skin hypopigmentation and subcutaneous adipose tissue atrophy are the dermal side effects of CS injections. In this case report, we aim to present a case in which reversible subcutaneous adipose tissue atrophy and skin hypopigmentation developed on the radial side of the wrist after triamcinolone acetonide injection performed with a blind technique in the treatment of De Quervain tenosynovitis and to make recommendations on this subject.

Keywords: Atrophy; De Quervain tenosynovitis; hypopigmentation; corticosteroid

ÖZET De Quervain tenosinoviti, el bileği birinci dorsal kompartımanda yer alan abduktor pollicis longus ve ekstansor pollicis brevis tendonlarının tekrarlayan hareketler ve aşırı kullanımı sonucu oluşan stenozan tenosinovitidir. Tedavide ilk olarak konservatif yöntemler kullanılmaktadır. Konservatif tedavide fizik tedavi yöntemleri, immobilizasyon sağlamak amaçlı splintler, steroid olmayan antiinflamatuar ilaçlar ve tendonlarındaki irritasyon ve inflamasyonu azaltmak için kortikosteroid (KS) enjeksiyonları kullanılmaktadır. Cilt hipopigmentasyonu ve subkutan yağ doku atrofisi KS enjeksiyonlarının dermal yan etkilerindendir. Biz bu olgu sunumunda De Quervain tenosinovit tedavisinde kör teknikle yapılan triamsinolon asetonid enjeksiyonu sonrası el bileğinin radyal yüzünde reversibl subkutan yağ doku atrofisi ve cilt hipopigmentasyonu gelişen bir olguyu sunmayı ve bu konuda önerilerde bulunmayı amaçlıyoruz.

Anahtar Kelimeler: Atrofi; De Quervain tenosinoviti; hipopigmentasyon; kortikosteroid

De Quervain tenosynovitis is a stenosing tenosynovitis caused by the excessive and repetitive use of the extensor pollicis brevis (EPB) and abductor pollicis longus (APL) tendons located in the 1st dorsal compartment of the wrist.[1] It commonly affects women aged 30-50 years who engage in repetitive hand and wrist activities.[2] It manifests as pain and tenderness over the radial styloid. The diagnosis was established through physical examination findings of pain triggered by ulnar deviation of the wrist and flexion of the thumb, with positivity on the Finkelstein test. Imaging modalities such as ultrasound,

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magnetic resonance imaging (MRI), and plain radiography can be used in the differential diagnosis of conditions suspected to be radial styloid fracture, scaphoid fracture, and first metacarpophalangeal joint arthritis.[3] Conservative methods are used primarily in the treatment, and surgery may be required in rare cases. Conservative treatment includes physical therapy, splints for immobilization, nonsteroidal anti-inflammatory drugs (NSAIDs), and corticosteroid (CS) injections to reduce the irritation and inflammation in the APL and EPB tendons. Surgical release of the first extensor compartment in cases where conservative treatment failsafe, dissection of the septum between the APL and EPB tendons is performed if present.[2]

Corticosteroid injections are commonly used as conservative treatment methods in the management of De Quervain's' tenosynovitis.[4] CS is associated with risks of local and systemic side effects, although they provide significant benefits in terms of pain and functionality in musculoskeletal injections. Minor effects such as elevated serum glucose, local pain, and erythema on the face and body are among the side effects of corticosteroids, while less frequently occurring major side effects include tendon rupture, infection, atrophy, and calcification. Skin hypopigmentation and subcutaneous fat tissue atrophy are among the dermal side effects of CS injections.[5]

We aimed to present a case of subcutaneous fat tissue atrophy and skin hypopigmentation on the radial aspect of the wrist following a blind technique triamcinolone acetonide injection for the treatment of De Quervain's tenosynovitis and provide recommendations regarding this issue.

CASE REPORT

A 42-year-old female patient applied to the physical medicine and rehabilitation outpatient clinic with complaints of pain in the radial aspect of the left wrist and thumb movements persisting for approximately 2 months. The patient did not show any swelling, increased heat or redness in this area and had no history of trauma. The patient had no history of additional medical conditions or medication use. There was tenderness in the radial styloid region, and the Finkelstein test was positive on physical examination. No additional pathology was detected on the blood tests and direct radiography was performed for differential diagnosis. The patient was diagnosed with De Quervain's' tenosynovitis. A conservative treatment plan was arranged, including immobilization with a splint and oral NSAIDs therapy. A single session and blind technique local injection of 40 mg triamcinolone acetonide (KENACORT-A®, Deva Holding A.Ş., Türkiye) was administered at the patient's 1-month follow-up visit because of the persistence of symptoms. It was observed that their symptoms had improved during the patient's follow-up visit 3 months later. However, there was hypopigmentation of the skin and subcutaneous fat tissue atrophy in an irregularly defined area approximately 2 cm in size over the radial styloid injection site (Figure 1). The patient was informed about his clinical status and follow-up was recommended. It was observed that skin hypopigmentation and subcutaneous adipose tissue atrophy completely regressed although she did not receive any treatment at the follow-up visit approximately one year later in the follow-up of the patient (Figure 2).

Written and verbal informed consent was obtained from the patient for the case report.

DISCUSSION

CS injections are used intra- and extra-articularly as a treatment option for various musculoskeletal

FIGURE 1: Irregularly circumscribed skin hyperpigmentation and subcutaneous fatty tissue atrophy approximately 2 cm in size at the injection site

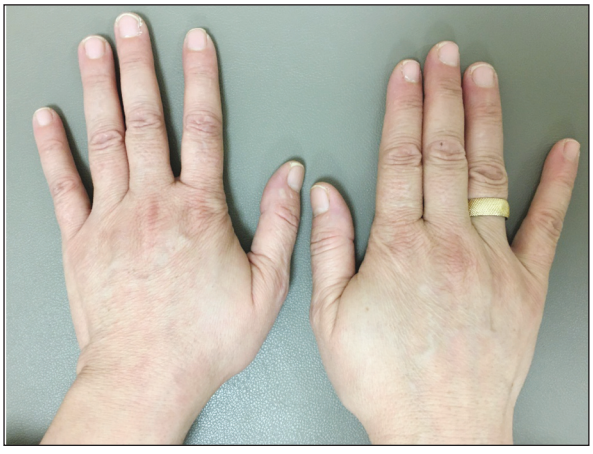

FIGURE 2: Regression in skin hypopigmentation and subcutaneous fat tissue atrophy 1 year after injection

pathologies. Arthritis, synovitis, bursitis, epicondylitis, tendonitis and tenosynovitis are some areas of use of CS injections.[6] CSs provide their anti-inflammatory and analgesic effects by decreasing synovial blood flow, altered synovial fluid composition, gene suppression of leukocytes, protease and cytokine production, and altered collagen synthesis. Triamcinolone acenotide, methylprednisolone acetate (Depo-Medrol®, Pfizer, USA), dexamethasone (Decadron®, Merck & Co., USA), triamcinolone hexacetonide, hydrocortisone (Solu-Cortef®, Pfizer, USA), and betamethasone acetate (Celestone®, Merck & Co., USA) are the commonly used CS types. Dexamethasone and hydrocortisone are non-particulate; methylprednisolone acetate and triamcinolone acenotide are particulate CSs. Particulate CSs have a longer residence time in the tissue. The particle status and duration of action of CSs are important in adverse events.[7] Although CS injections provide significant benefits in terms of pain and functionality, they can also cause a variety of adverse events from mild to serious. Septic arthritis, tendon rupture, necrotizing fasciitis, skin side effects, facial flushing, vasovagal reaction and hyperglycemia are some of these.[8]

Skin hypopigmentation, subcutaneous adipose tissue atrophy and fat necrosis are among the dermal side effects of CSs. The risk increases with more superficial injections, and the leakage of CS along the needle in the injection line also increases this possibility.[8] Skin hypopigmentation has been reported in 1.3-4% of patients receiving local CS injections; it usually occurs 1-4 months after injection. Skin hypopigmentation and subcutaneous adipose tissue atrophy are also side effects of CSs. Subcutaneous adipose tissue atrophy usually resolves within 1 year, but cases of persistent atrophy have also been reported.[5,9] The pathophysiology of skin hypopigmentation and subcutaneous fat tissue atrophy due to CS injection has not yet been elucidated. Dysfunction without any change in the number of melanocytes has been reported in some histopathological studies. It has been claimed that subcutaneous fat tissue atrophy is due to the antiproliferative effects of CS on keratinocytes and fibroblasts. It has been stated that extracellular matrix protein metabolism changes lipid synthesis in the skin and a decrease in the number and size of adipocytes is among the reasons.[10,11]

Triamcinolone acetonide is a low-solubility CS with high potency and particle size. It is mostly recommended for use in deep soft tissue and large joint injections.[8] High-resolution CSs such as betamethasone (Celestone® Soluspan, Merck & Co., USA) sodium and dexamethasone are recommended for use in more superficial tissue injections. It has been stated that the potency and solubility of CSs are effective in the development of skin hypopigmentation and subcutaneous fat tissue atrophy.[5,12]

Corticosteroid injections can be performed blinded or under ultrasound guidance. Ultrasound-guided injections are recommended in order to increase the chance of success in mastering anatomical variations and to reduce the possibility of side effects [4]. However, there are also studies showing that there is no difference in terms of clinical improvement and skin hypopigmentation between ultrasound-guided and blind KS injections.[13] There are several cases showing the development of skin hypopigmentation and subcutaneous adipose tissue atrophy in soft tissue KS injections performed using different techniques.[9,11]

CONCLUSION

Some minor and major side effects may occur after extra-articular CS injections. Skin hypopigmentation and subcutaneous fat tissue atrophy at the injection

site were among the side effects in our case. Care should be taken in terms of the duration of action, solubility, application technique and possible side effects of the CS preparation used when planning these injections. The patient should be informed about possible side effects even in rare baseband consent should be obtained. It should be kept in mind that while these side effects are expected to be mostly temporary, they may lead to permanent cosmetic problems.

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