



Case Report

Median Nerve Palsy Secondary To A Ganglion Cyst: A Case Report

Yurdal Serarslan ^{a*}, Yunus Dođramacı ^b, Aydıner Kalacı ^c, Ahmet Nedim Yanat ^d, Anıl Emir ^e

^a Department of Neurosurgery, Mustafa Kemal University Antakya, Hatay, Turkey

^b Department of Orthopaedics and Traumatology, Mustafa Kemal University, Antakya, Hatay, Turkey

^c Department of Orthopaedics and Traumatology, Mustafa Kemal University, Antakya, Hatay, Turkey

^d Department of Orthopaedics and Traumatology, Mustafa Kemal University, Antakya, Hatay, Turkey

^e Department of Orthopaedics and Traumatology, Mustafa Kemal University, Antakya, Hatay, Turkey

ARTICLE INFO

ABSTRACT

Article history:

Received 07 / 05 / 2009

Accepted 18 / 06 / 2009

We report a case of ganglion cyst inside the carpal tunnel presenting as median nerve palsy. We consider that the median nerve palsy in this case was due to direct nerve compression within the carpal tunnel caused by a ganglion cyst.

*Correspondence to:

Yurdal Serarslan

Mustafa Kemal University,

Tayfur Ata Sökmen Medical Faculty,

Dept. of Neurosurgery,

31700 / ANTAKYA / HATAY / TURKEY

E-mail: yserarslan@yahoo.com

Keywords:

Carpal Tunnel,

Carpal Tunnel Syndrome,

Ganglion Cyst

Median Nerve

Median Nerve Palsy

Surgery

1. Introduction

Acute carpal tunnel syndrome (ACTS) is caused by a sudden increase in carpal canal pressure that shuts down microcirculation to the median nerve. It has been reported on a number of occasions, predominantly associated with fractures(2). Spontaneous acute onset of symptoms has been reported in patients with bleeding diathesis or a history of anticoagulation therapy, pyogenic hand infection, inflammation and associated with pregnancy. Acute carpal tunnel syndrome due to ganglion cyst has not been reported previously in the English language literature. We report a case of acute median nerve palsy secondary to a ganglion cyst inside the carpal tunnel because of its rarity.

2. Case Report

A 16-year-old female student presented in the accident and emergency department with severe pain in the fingers and right dominant wrist of 4 hours duration. She also complained of severe weakness of grip with numbness in the thumb, index



Fig. 2



Fig. 3



Fig. 1 The cyst was 2x2 cm in diameter, arising deep to the flexor tendons from the capsule of the intercarpal joint. Total excision of the cyst was performed (Figures 2 and 3).

and middle finger of the right hand. There was a history of a lump on the volar aspect of the wrist, increased in size in the past few weeks. However, the symptoms suddenly worsened after writing of a long paragraph. On physical examination, there was a palpable tense mass in the palmar wrist and tenderness over the swelling in the palm. The patient had

decreased sensation to light touch and pin prick on the thumb, index, and middle fingers. There was a positive Tinel's sign over the median nerve at the wrist. Radiographs of the wrist were normal. Laboratory investigations including full blood count, erythrocyte sedimentation rate, and rheumatoid factor were all within normal range. The symptoms worsened despite of the analgesic medication and short-arm plaster slab immobilization. Due to the severity of the pain, surgical decompression of the carpal tunnel was carried out. Exploration revealed direct median nerve compression by a cystic lesion (Figure 1).

Histopathologic findings were consistent with ganglion cyst. The patient recovered with complete pain relief within few hours of the operation. At the 6-month follow up appointment she had no further problems in her right wrist.

3. Discussion

Carpal tunnel syndrome (CTS) resulting from ganglion cyst within the carpal canal is a rare condition. Cases of occult ganglia has been reported, as space occupying lesions presenting with unilateral CTS(8,9). However, ACTS secondary to ganglion cyst is extremely rare. To our knowledge this is the first case of spontaneous acute median nerve palsy due to a ganglion cyst within the carpal tunnel. Spontaneous onset of ACTS is very unusual. Most of the reported cases of ACTS, were associated with fracture or surgery(1).

Differential diagnosis of non traumatic, spontaneous ACTS includes; spontaneous hemorrhage inside the carpal tunnel(3,4,10,11), thrombosed persistent median artery(8), pyogenic hand infection(1), pseudogout(12) and tumoral calcinosis(15). Spontaneous ACTS secondary to hemorrhage has been reported in patients with hemophilia(11), von Willebrand's disease(10) and in patients on anticoagulation therapy(3,4). Chidgey et al.(5) reported a case of ACTS as a result of pigmented villonodular synovitis. They described an 89 years old female who developed symptoms following

aspiration of her wrist. Ward et al.(14) reported a case of spontaneous acute carpal tunnel syndrome of the right wrist without any antecedent trauma. Surgical exploration revealed hemorrhage secondary to diffuse giant cell tumor of tendon sheath as the underlying cause.

The importance of early surgical release to maintain median nerve capillary blood flow is well documented(13). Chidgey et al.(5) performed carpal tunnel release within 24 hours of admission in the patient with pigmented villonodular tenosynovitis of the wrist, and the patient had full recovery. Likewise, Rahimtoola et al.(11) operated within 12 hours of admission in two cases of hemophiliacs with ACTS and both patients experienced complete resolution of their neurologic deficit. Ford and Ali(6) treated four patients with ACTS following trauma. One patient underwent surgical release four hours after presentation and had full recovery. Of the remaining patients who underwent decompression four to 96 hours after presentation, only one patient recovered normal median nerve function. In our case decompression was achieved within 6 hours and the patient had full recovery of median nerve function.

In conclusion, ganglion cyst inside the carpal tunnel, must be considered in the differential diagnosis of spontaneous ACTS. Early decompression is essential for a rapid and complete recovery of median nerve function.

REFERENCES

- Bailey, D., Carter, J.F., 1955. Median-nerve palsy associated with acute infections of the hand. *Lancet*. 268, 530-532.
- Bauman, T.D., Gelberman, R.H., Mubarak, S.J., Garfin, S.R., 1981. The acute carpal tunnel syndrome. *Clin. Orthop. Relat. Res.* 156, 151-156.
- Black, P.R., Flowers, M.J., Saleh, M., 1997. Acute carpal tunnel syndrome as a complication of oral anticoagulation therapy. *J. Hand. Surg. [Br]*. 22, 50-51.
- Bonatz, E., Seabolt, K.E., 1993. Acute carpal tunnel syndrome in a patient taking Coumadin: case report. *J. Trauma*. 35, 143-144.
- Chidgey, L.K., Szabo, R.M., Wiese, D.A., 1988. Acute carpal tunnel syndrome caused by pigmented villonodular synovitis of the wrist. *Clin. Orthop. Relat. Res.* 228, 254-257.
- Ford, D.J., Ali, M.S., 1986. Acute carpal tunnel syndrome: complications of delayed decompression. *J Bone Joint Surg Br*. 68, 758-759. Khashaba, A., 2002.
- Carpal tunnel syndrome from thrombosed persistent median artery. *J. Emerg. Med.* 22, 55-57.
- Nakamichi, K., Tachibana, S., 1993. Unilateral carpal tunnel syndrome and space-occupying lesions. *J. Hand. Surg. [Br]*. 18, 748-749.
- Nakamichi, K., Tachibana, S., 1993. Ultrasonography in the diagnosis of carpal tunnel syndrome caused by an occult ganglion. *J. Hand. Surg. [Br]*. 18, 174-175.
- Parthenis, D.G., Karagkevrekis, C.B., Waldram, M.A., 1998. Von Willebrand's disease presenting as acute carpal tunnel syndrome. *J. Hand. Surg. [Br]*. 23, 114.
- Rahimtoola, Z.O., van Baal, S.G., 2002. Two cases of acute carpal tunnel syndrome in classic hemophilia. *Scand. J. Plast. Reconstr. Hand. Surg.* 36, 186-188.
- Spiegel, P.G., Ginsberg, M., Skosey, J.L., Kwong, P., 1976. Acute carpal tunnel syndrome secondary to pseudogout: case report. *Clin. Orthop. Relat. Res.* 120, 186:185.
- Szabo, R.M., 1998. Acute carpal tunnel syndrome. *Hand. Clin.* 14, 419-429.
- Ward, C.M., Lueck, N.E., Steyers, C., 2007. Acute carpal tunnel syndrome caused by diffuse giant cell tumor of tendon sheath: a case report. *Iowa. Orthop. J.* 27, 99-103.
- Weiber, H., Linell, F., 1987. Tumoral calcinosis causing acute carpal tunnel syndrome. *Scand. J. Plast. Reconstr. Surg. Hand. Surg.* 21, 229-230.