Advanced Chemical Engineering

Extended Abstract

Carpal Tunnel Syndrome in Chronic Haemodialysis: Incidence, Risk Factors,Treatment and Evolution.

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Abstract

To evaluate the incidence of CSC and to identify the factors that influence the development of CSC in haemodialysis patients, as well as the results of its surgical treatment.

Introduction

Carpal tunnel syndrome, which is also known as median nerve compression, is a condition resulted due to tingling, numbness and weakness in the hand. It happens as a result of pressure on the median nerve, that runs along the length of the arm, passing in the radio carpal joint known as the carpal tunnel, and ends in the hand. The median controls the movement and feeling of the thumb and fingers other than the little finger and therefore the movement of all the fingers other than little finger. This condition is often characterized by tingling, burning or itching numbness in the palm, thumb, index or middle finger mostly. Sometimes this tingling feeling can progress to the length of arm. Shock like feeling is often experienced besides the weakness in the hand. At initial stages shaking of the hand may relieve the numbness however at later stages this may not be helpful. As the carpal tunnel syndrome progresses, muscles in the hand shrink resulting in less grip and strength associated with muscle cramping and pain. Risk factors include repetitive wrist movements and motions, like typing. Health conditions like obesity, rheumatoid arthritis, diabetes and hypothyroidism. Pregnancy also acts as risk factor. However women are more prone to Carpal tunnel syndrome likely three folds more than men due to smaller carpel tunnel. In some conditions genetic factors also play a vital role

Material and methods

Cross-sectional study carried out in December 2014 on 100 haemodialysis patients in the nephrology department of CHU, Casablanca.

Results

We collected 26 cases of CSC in 14 patients (14%). These were 9 women and 5 men (sex ratio = 0.55), with an average age of 50 years (24 -62 years). The average age at dialysis was 31 years (16 -51 years). The mean duration of haemodialysis was 19.6 years (11 - 32 years). ; And were all dialyzed with a cuprophan membrane; with an average KT / V of 1.94 (1.49-2.59). 1 patient had asymptomatic involvement of the shoulder and 2 patients had asymptomatic tendinitis as ATCD. All patients presented acroparesthesia with hypoesthesia in the median nerve area. The outcome was bilateral in 12 cases. We noted 9 cases of SCC on the side of the arteriovenous fistula (FAV). All patients underwent electromyography (EMG), confirming CSC diagnosis, with moderate to severe forms (1 case was associated with metabolic neuropathy of the median and ulnar nerves on both sides). Surgical treatment consisted of the release of the flexor retinaculum. Histology of the annular ligament and synovium revealed amyloid deposits in 1 case. The evolution was marked by the disappearance of clinical signs in all patients, recurrence in 5 cases with reoperation in 3 cases.

Discussion

The prevalence of CSC in HDC is 9 to 32%, increases with dialysis age, and with advanced age at dialysis. The physiopathological mechanism is threefold: vascular flight in relation to FAV, uremic neuritis and amyloid deposits of the synovium. Conclusion:CSC is a disabling disease in HDC, requiring early screening by EMG routine screening to improve prognosis.

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