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Acute Carpal Tunnel Syndrome Caused by Hematoma

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ABSTRACT

The authors reported a rare case of carpal tunnel syndrome occurred in old adult anti-coagulated for over ten years for hypertensive and ischemic heart disease with pace-maker. He presented typical symptoms of carpal tunnel syndrome after alternating previscan with lovenox. The echographic diagnosis confirmed a hematoma on the anterior surface of the wrist who had required in emergency the surgical opening of the anterior carpal ligament and the evacuation of the hematoma. In 48 hours we obtained a best recovery.

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Introduction

The carpal tunnel syndrome is a common compression neuropathy of the median nerve. Described in 1921 by MARIE and FOIX(1). In acute carpal tunnel syndrome, the intracarpal pressure rises above a threshold of 20–30 mmHg(2) and capillary blood flow is reduced below the level of median nerve viability. Its prevalence is estimated to be 2-4% of the adult population, translating to 4-10 million patients, with a lifetime incidence of 10-15%, dependent upon occupational risk (3) Carpal tunnel syndrome usually occurs between the ages of 36 and 60 years and is two to five times more common in women than in men. It isn't known why the median nerve becomes compressed in most cases, although certain things are thought to increase the risk of carpal tunnel syndrome developing, such as: a family history of carpal tunnel syndrome, pregnancy – about 50% of pregnant women develop carpal tunnel syndrome, injuries to the wrist, other health conditions, such as diabetes and rheumatoid arthritis.

The acute carpal tunnel syndrome is unusual and few cases post traumatic and iatrogenic hemorrhage have been reported in the literature(4,5).

We report a rare case of acute carpal tunnel syndrome occurred to old adult anti-coagulated for over ten years for hypertensive and ischemic heart disease with pace-maker who in alternating Previscan to lovenox has presented typical symptoms of carpal tunnel syndrome. These lesions had not been described in our knowledge; It should be discussed on its epidemiological, clinical, and therapeutic particularity.

Case Report

A 80-year-old man with no story of carpal tunnel syndrome, has been anticoagulated on previscan 20 mg : ¾ mg for over ten years for hypertensive and ischemic heart disease with pace-maker. He should stopped previscan on 5 days in alternating to lovenox before fibroscopy examination. On second day he presented a spontaneous pain, and edema, tingling with hypoesthesia of the fingers without any story of trauma. The international normalized ratio (INR) at the time of admission was 2.58. He was transferred to the intensive care unit of Ballanger hospital for further treatment. Physical examination

revealed a pain and oedema in the wrist. The paresthesias elicited by tapping the median at the wrist (positive Tinel test). And the Phalen test (paresthesias caused by wrist flexion over 30-60 s) are typical. The tapping on the wrist with a reflex hammer caused an electric shock-like sensation (Tinel Sign). The clinical diagnosis of acute carpal tunnel syndrome was evoked.

The echography revealed an hematoma on the wrist. The patient was operated urgently and surgical intervention required the anterior annular ligament opening in the carp and the hematoma was evacuated. The median nerve decompression were performed under general anesthesia. The subjective and objective recovery in 48 hours was effective.

Discussion

The anticoagulant treatment by anti-vitamines K (AvK) have appeared for more than 10 years as choice drug for the prevention and treatment of deep venous thrombosis, certain complications of myocardial infarctus, pulmonary embolism, atrial fibrillation, or valvular pathologies [6,7]. The hemorrhagic accidents related to this treatment are common in the old population and the frequency of cardiovascular disease have been found in the patients treated with AVK in European countries [8] and in this countries about 10% of the old population are under AVK [9].

Acute carpal tunnel syndrome is rare and may be associated with a variety of conditions. Kakosi [10] report a case who developed a carpal tunnel syndrome and volar for arm compartment syndrome after a radial artery line placement, while receiving intravenous heparin.

The long-term treatment of previscan for over 10 years or the relaying to the lovenox have caused in our patient a hematoma located in wrist which caused a compression of the median nerve with oedema and pain in wrist. The patient INR was 2.58; Letard JC [11] showed that when the INR of the patient is between 2 and 3; coagulation is effective and the combination of this factor and the age of the patient which was 80 years with comorbid conditions that increase the risk of hemorrhagic accidents such as hematoma.

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Their best-known locations are typical often intra cerebral or at the level of the psoas-iliac [12]. The location in the wrist seems exceptional or hasn't been reported in our knowledge. The mechanism of these injuries is a compression occurs within the carpal tunnel where median nerve and flexor tendons pass through a channel defined by the carpal bones and the transverse carpal ligament. Any process that increases the volume within the carpal tunnel can compress the median nerve, causing symptoms, such as pain and paresthesias, and findings such as functional deficits of the thumb and fingers, atrophy of the thenar musculature and prolonged nerve latencies on nerve conduction testing. Hamdi, in a series of 26 cases of syndrome carpal acute post traumatic had found the presence of a hematoma in 89% of cases. This excess pressure acute of the canal with gene of the venous microcirculation that will be at the origin of edema intra neural [13]. This swelling will organize later in fibrosis and exudate that engainent nerve fibers. These exudates will diffuse through the neural spike vessels and cause ischemia that will affect nerve conduction. It is thus that by restoring blood flow to the nerve in the emergency, nerve function is recovering also within a time which coincides with the endoneurial revascularization. Gelberman [14] and Kongscholm [15] ,showed that carpal tunnel in a normal man pressure ranges from 0-3 mmHg in the neutral position and when the wrist is extended or bending over 45 ° this pressure reaches 30 mmHg. Beyond 40 mmHg, it will settle a gene to the venous microcirculation with edema intra neural responsible for nervous suffering. The lifting of the ischemia after 4 to 6 hours allows the return of arterio-venous in minutes flow and the recovery of nerve function. The evolution beyond 8-10 hours, the prolonged ischemia of the nerve will cause impairment of nerve function because the return of the arterial flow is done by arterioles while venous return is altered. The decision as to whether a patient with a carpal tunnel syndrome should remain on anticoagulant therapy is unclear. According to Black and al. [16], the risk of thrombosis outweighs the benefit of discontinuing or reversing anticoagulant therapy. In contrast, Bonatz and Seabol [17] recommend discontinuation of anticoagulation. In this reported case, the patient was returned to AVK.

Conclusion

Acute carpal tunnel syndrome by a hematoma is rare and the treatment is generally successful, but early diagnosis is important. A surgical opening of the anterior annular ligament of the carp and the evacuation of the hematoma within 6 hours allows recovery of nerve function.

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