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Ultrasound study of aneurysm of the ulnar artery compressing the trunk of the ulnar nerve at the wrist, about a clinical case

Etude échographique d'un anévrisme de l'artère ulnaire comprimant le tronc du nerf ulnaire au poignet

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Summary : We report a clinical case of thrombosed aneurysm of the ulnar artery. It is an infrequent and poorly understood pathology that is regularly associated with hypothenar hammer syndrome, found specifically in manual workers and athletes exposed to repeated manual trauma.

Keywords: Aneurysm - Ulnar artery – ulnar nerve- Doppler ech.
Mots clés : artère ulnaire - nerf ulnaire –anévrisme, echodoppler

I. Introduction : The aneurysms of the arteries of the hand are most often of traumatic etiology. The false aneurysms of the arteries of the hand follow acute trauma, repeated microtrauma (hypothenar hammer syndrome) are responsible for true aneurysms [1]

Von Rosen. S. was the first to describe post-mortem trauma syndrome in the hypothenarian region, and ulnar artery aneurysm in the off-road cyclist. [2]

Conn J.J et al in 1970 describe for the first time the hypothenar hammer syndrome or Hammer hypothenar Anglo-Saxon syndrome. [3]

We report a clinical case of thrombosed aneurysm of the ulnar artery. This is an infrequent pathology and poorly known, regularly associated with hypothenar hammer syndrome, found specifically in manual workers and athletes exposed to repeated manual trauma.

II. Observation: Patient aged 29, with no particular antecedents, nurse by profession and athlete at the same time, consults for pain in the hypothenar region, the little finger and the ring finger following a sports injury on the right wrist that occurred 5 days before the first consultation. The clinical examination shows a pale purplish appearance of the integuments, and a difference of temperature (coldness) of the concerned region compared to the rest of the hand, there was no motor disorders. [4]

The necessary course of action was ultrasound surveillance.

The one-month control did not show a large clinical and radiological evolution.

A control ultrasound showed the presence of aneurism compressing the trunk of the ulnar nerve, we proceeded to the resection of the thrombosis and the operative follow-ups were good. (Figures 1, 2).

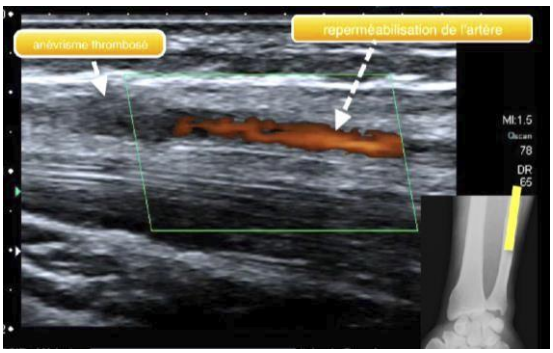

Figure 1: Ultrasound image of the right wrist, axial section showing thrombosis at the ulnar artery level. (Ain Naadja Military Hospital Algeria 2016)

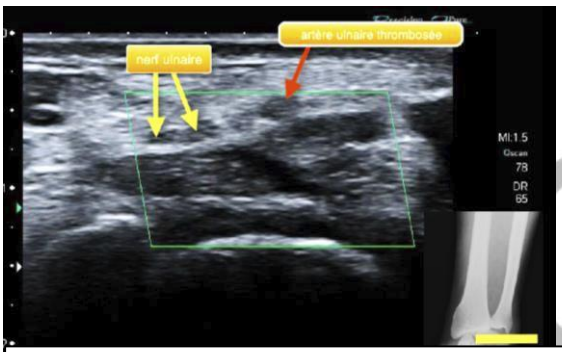

Figure 2 : Longitudinal ultrasonographic section showing the reversal of the ulnar artery at the distal quarter of the ulnar diaphysis. The aneurysm sits next to the distal radial shaft but the thrombosis is extended from the aneurysm to the distal.

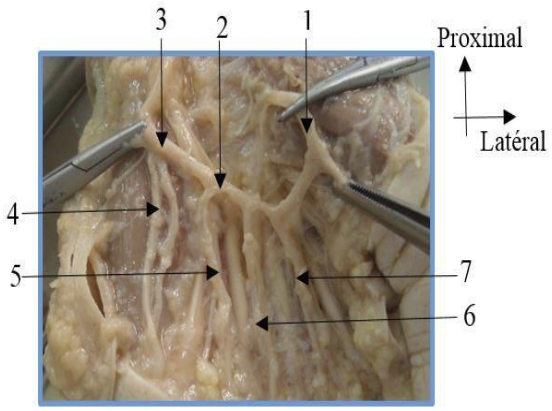

Figure 3 : Embalmed left hand, superficial arterial palmar arch.

III. Discussion : The compression of the ulnar nerve at the wrist is a rare pathology, much less common than its compression at the elbow. The only noticeably, noticeable difference between ulnar nerve injuries in the elbow and wrist is whether or not the muscles of the forearm innervated by this nerve are affected.

In the ulnar canal, the ulnar nerve is surrounded by adipose tissue, is separated from the canal surfaces, and is never really compressed by the fibrous structures. The only elements that can lead to compression of the nerve are the aneurysm of the ulnar artery and the anterior synovial cysts.

At the level of the wrist, the ulnar nerve is placed within the ulnar vessels and divides into its terminal branches: one superficial and the other deep.

At the level of the wrist, the ulnar nerve is placed within the ulnar vessels and divides into its terminal branches: one superficial and the other deep. (Figure 3)

IV. Conclusion: the aneurysm of the ulnar artery remains a rare pathology. The presence of a mass in the hypothenar eminence, of soft consistency following direct or repeated trauma of paresthesia of signs of ischemia and a test Allen's positive is suggestive of the diagnosis.

Doppler ultrasound can confirm the diagnosis.

surgical indication remains the treatment of choice because of the risks of embolic complications.

Bibliograph references:

1- Journal des maladies vasculaires, volume 39 num 6 pages 426-429. Dec 2014 faux anévrisme traumatique chez un adolescent.
2- Von Rosen. S. fut le premier à faire une description du syndrome consécutif à des traumatismes de la région hypothénarienne, et l'anévrisme de l'artqre ulnaire chez le cycliste tout terrain. [2]
3- Conn J.J et al en 1970 décrivent pour la première fois le syndrome du marteau hypothénarien ou Hammer hypothénar syndrome des anglo-saxons. [3]
4- Military hospital radiology department Ain Naadja Algiers 2018