Botulinum toxin type A interest in diagnosis and treatment of exertional leg pain

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Keywords: Botulinum toxin type A; Leg pain; Chronic compartment syndrome; Popliteal artery entrapment; Accessory soleus muscle

Introduction.– Etiologies of exertional leg pain are numerous and may be associated. This diversity requires a precise diagnostic break-up, and makes its therapeutic management sometimes complex. How should some abnormalities (supernumerary muscles, functional popliteal arteries entrapment) be handled when their imputability in pain is uncertain? Botulinum toxin type A (BTX-A) has been successfully used for several years in some lesions of the locomotor apparatus. Our objective is to demonstrate its diagnostic and therapeutic interest in the chronic compartment syndrome (CCS), functional popliteal artery entrapment syndrome and the accessory soleus muscle. Observation.– We are presenting a few studies or case series which are in the process of being analysed or published. The first open and prospective study demonstrates the diagnostic and therapeutic interest of BTX-A in 31 patients with antero-external CCS of the leg of a mean duration of 31 months. Pain disappeared in 97% of cases. A moderate muscular deficiency is nearly constant and disappears between 1 and 5 months in 94% of cases, preventing only exceptionally an early resumption of running. Intramuscular pressures, three months after BTX-A, had normalized. Eight patients presented a recurrence of pain between 6 and 30 months. In three patients with painful accessory soleus muscle treated by BTX-A injection within the muscle by stimulodetection, pain had disappeared. Two patients relapsed at distance.
Five patients presenting with a functional trapped popliteal artery without anatomical lesion were treated by BTX-A injection. The results are in the process of analysis. A first patient was able to resume sport, as pain had disappeared and the echographic dynamic abnormalities had normalized. Discussion.– The precise use of BTX-A is a useful adjuvant in the diagnostic break-up of exertional leg pain, in addition to the absolutely essential complementary tests. It allows precising the imputability of anatomical or functional abnormalities in the origin of pain. BTX-A has its own therapeutic action allowing a prolonged amendment of some types of pain. In case of recurrence, it is an excellent pre-surgical test in non-responding pain with uncertain surgical results.

http://dx.doi.org/10.1016/j.rehab.2012.07.127

Axial myofascial pain syndromes and botulinum toxin

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Introduction.– Botulinum toxin (BT) can be used in the treatment of neck and upper limb pain and in the management of low back pain with or without sciatica. Its use and justification in these indications are based on the myofascial pain concept according to Travell, which would be a malfunction of the motor endplate with excessive release of acetylcholine.

http://dx.doi.org/10.1016/j.rehab.2012.07.129

Algodystonia in the context of upper limb complex regional pain syndrome (CRPS)

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Keywords: Algodystonia; Botulinum toxin; Dysstonia,complex regional pain syndrome

Introduction.– CRPS remains a phenomenon not clearly understood physiologically. Three phases follow one another: hot, cold and retractive. A symptomatic element of dystonia may appear from the cold phase, characterized by tonic muscle contractions and abnormal postures.

Observation.– A 42 year old woman presents with a epicondylar fracture of the left humerus further complicated by ulnar nerve compression which was treated by arthroscopic surgery. Two years later, with no obvious trigger, the patient develops pain and swelling of the left arm, and a progressive stiffness of the hand attributed to (CRPS). Clinical examination of passive range of motion revealed the following limitations: shoulder abduction of 30°, flexion at 40°, elbow pronation of 60°, supination to −45°, wrist extension of −60°, radial rotation at −20° and palmo-palmar distance of II to V fingers at 0 mm. The patient was treated with marcarene for regional local nerve blocks followed by intensive rehabilitation, without results. Three years later, the patient was referred to us for further treatment of her dystonia. We used botulinum toxin to inject the trapezius, teres major, pectoralis major, pronator teres, flexor carpi radialis, superficial and deep common flexors of the second to fifth fingers. We used alcohol nerve blocks administered to the palmar muscles, common flexors, and flexor pollicis longus 15 days later resulting in a clear measurable functional improvements with shoulder abduction of 80°, shoulder flexion of 150°, elbow pronation 90° and supination to 80°, wrist rotation at 30°, radial rotation of 0°, and the palmo-palmar distances of 80 mm, 50 mm, 60 mm, 70 mm for second, third, fourth, and fifth fingers, respectively.

Discussion.– The literature on CRPS dystonia is very scarce, the use of botulinum toxin as well as intensive active and passive rehabilitation in conjunction with psychotherapy can be an effective therapeutic combination.

Further reading

http://dx.doi.org/10.1016/j.rehab.2012.07.129