



Focal neurogenic muscle hypertrophy: an unusual clinical case.

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We report on the diagnosis and follow-up of a patient with progressive neurogenic muscle hypertrophy (NMH) circumscribed to the right vastus lateralis and rectus femoralis, which started after the incidental penetration of a piece of wire within the ipsilateral vastus medialis.

A fifty-six year-old man came to our attention complaining of pain, fasciculations, and cramps at the anterior-lateral lodge of his right thigh. These symptoms having started about 4 years ago, progressively worsened with the appearance of marked stiffness and enlargement of the right quadriceps. Episodes occurred of muscle stiffening and cramps so severe to impair gait and standing maintenance. Family and personal history was negative for muscular disease. Neurological examination showed the right thigh girth 9 cm longer than that of the left clearly due to hypertrophy of the vastus lateralis and rectus femoralis which presented also with spontaneous and evoked fasciculations; reduction of flexion-extension movements of the right leg and patellar reflex. Routine blood analyses were normal except for slightly increased CK (392 IU/L). Electromyography showed chronic denervation-reinnervation with continuous complex repetitive discharges (CRD) in the right vastus lateralis and rectus femoralis only. Muscle biopsy disclosed the picture of chronic neurogenic process with type 2 fibres hypotrophy and type 1 and 2 fibres hypertrophy. Magnetic Resonance Imaging (MRI) showed L3-L4 right-sided disk protrusion without evident nerve root compression; an MRI study of the thighs showed an increase in muscle-volume of the right vastus lateralis and rectus femoralis and a wire of about 1 cm in length within the right vastus medialis. After refusal the surgical removal of the wire, carbamazepine (600 mg/day) was started which led to marked improvement of clinical and electrophysiological picture consisting in remission of pain, cramps and fasciculations and in reduction of hypertrophic muscles-volume and CDRs. This amelioration remained stable during two years follow-up except during a attempt self-managed by the patient of carbamazepine withdrawal.

This study is the first reporting on circumscribed NMH and CRD affecting the vastus lateralis and rectus femoralis. The improvement of the clinical picture and the CRD reduction in our patient after carbamazepine suggest that the CRD can determine the NMH. By lacking definite evidences of denervation in L3-L4 roots territories is particularly intriguing to hypothesize a role of pacemaker of the wire in determining NMH and/or CRD.