Letters to the Editor

Myopathy presenting with severe muscle pain

Sirs,

In certain cases muscular pain can be associated with a primary muscle disease (1). While diagnosing a patient with musculoskeletal pain of degenerative origin due to muscular imbalance one should always include primary myopathy/myositis in the differential diagnostic consideration. Muscular weakness may not be prominent in all cases of myopathy/myositis. With the following case we would like to demonstrate a young women with severe muscular pain and the difficulties to establish a definitive diagnosis.

We report a case of a 30-year-old Caucasian woman with exercise-induced severe muscle pain. She had a long history of severe widespread muscle pain and many inconspicuous in- and outpatient diagnostic examinations, with the exception of muscle biopsy, until admission to our Department. The patient had avoided any physical stress since her childhood. She suffered from muscle pain for 2-4 days each time after exercising or doing light sporting activities. Furthermore, she reported increased fatigue and prolonged sleep periods, as well as increased perspiration during the night. There was no relevant medical history within her family and she had not travelled abroad and there was no indicator for any toxic influence to the patient (2).

Examination on admission showed a funnel chest, a 2/6 systolic murmur over Erb's point and a generalized hypermobility of both the spinal column and the joints. Fibromyalgia was ruled out clinically. The muscle strength was normal and there were no neurological and/or ophthalmological abnormalities. Slightly increased levels of aldolase at 10 U/l (normal range 1.2 – 7.6) and creatine kinase at 164 U/l (< 150) were found. There were no signs of inflammation, autoantibodies including ANA, anti-SSA, anti-SSB, anti-SM, anti-U1snRNP and anti-Jo1 were absent; the lactate exercise test (3) was normal, as was the MRI examination of the muscles of the femoral region. Polyphasic motor unit potentials with normal duration and amplitude were recorded by EMG in both the rectus femoris and the tibialis anterior muscle without spontaneous activity or myotonic series.

Paraffin-embedded and frozen sections of biopsies of the femoral muscle revealed considerable variations in fibre size ranging from 20 μm to 100 μm (Fig.1). Numerous muscle fibres presented an increased number of internalised nuclei. Split fibres and regenerating fibres were observed occasionally throughout the specimen (Fig.1). Although some of the atrophic fibres were arranged in groups, there was no fibre type grouping apparent in the ATPase staining at pH 4.2 or in the immunohistochemical stains for fast and slow myosin. The muscle biopsy sample did not show any pathological alterations in the Gomori trichrome stain. Neither the periodic acid-Schiff stain nor the Oil-red-O stain showed any signs of metabolic storage disease (4). Immunolabelling of spectrin, dystrophin, all sarcoglycans, laminin, caveolin, emerin, dysferlin and merosin were inconspicuous. Electron microscopy showed a normal distribution of heterochromatin in the nuclei. No pathological changes could be observed in myofibrils and mitochondria (5), and there were no signs for spinal muscle atrophy. In addition, chromosome 5 analysis showed no homozygous deletion or gene conversion of the telomeric SMN gene (SMN1) (6).

The clinical symptoms and the changes described in the muscle tissue, as well as the electrophysiological changes, are multifaceted and do not cover a specific disease or syndrome. There was no dystrophinopathy, sarcoglycanopathy, metabolic disturbance or myositis present in the patient. No tumour or other rheumatological disease was found in former examinations.

On the basis of the clinical examination, laboratory, EMG and muscle biopsy findings, the authors failed in making a definitive diagnosis in this special patient. Pseudomyopathic muscle atrophy, type Kugelberg-Welander (7), must be considered. A centronuclear myopathy (8), a myotonic dystrophy (9), as well as a congenital fibre type disproportion myopathy (10) must also be taken into consideration. An inflammatory myopathy could be excluded.

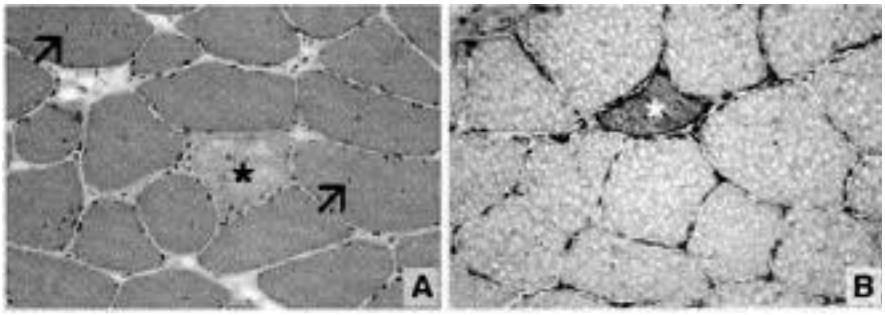

Fig. 1. H & E staining of a representative frozen transverse section (**A**) and immunohistochemistry for vimentin (**B**) of a biopsy of the femoral muscle with considerable variation in fibre size. Numerous muscle fibres presented an increased number of internalised nuclei (**arrow**) and occasional necrotic muscle fibres (**asterisk**). Expression of vimentin marks regenerating of myofibres. Original magnification 100x.

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