

Muscle biopsy findings in primary Sjögren's syndrome – correlation to muscular pain

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Introduction. Muscular involvement such as myalgia and fibromyalgia is common in primary Sjögren's syndrome (SS). Symptoms of myositis do also occur. The aim of this work was to analyse morphological and immunohistochemical findings in muscle biopsies from patients with SS and to correlate the findings to the presence of different types of muscular pain.

Material and methods. 36 patients with SS diagnosed according to the European criteria, from the Department of Rheumatology at the University Hospital, Linköping, were enrolled in a consecutive manner. There were 33 women (age 36-83 years, mean 62) and 3 men (age 55-79 years, mean 67). The patients were examined and interviewed concerning the occurrence of pain. Muscle biopsies from the anterior tibial muscle were performed and analysed by conventional light microscopy for the presence of morphological changes and signs of inflammation. The expression of major histocompatibility complex (MHC) class I and II and 'membrane attack complex' (MAC) was analysed by immunohistochemistry.

Results. 17 (47%) of the patients experienced no muscular pain. 10 (28%) had signs and symptoms of fibromyalgia, while 9 (25%) had other forms of muscular pain. In 10 (28%) biopsies no signs of inflammation were found. The remaining 26 biopsies (72 %) revealed various grades of inflammation, (19 mild, 6 moderate and 1 severe). The inflammatory cell infiltrates had a perivascular localisation. In addition, 9 cases had endomysial and 12 perimysial inflammatory infiltrates. Various grades of degeneration were found in 20 biopsies (56%) and a combination of degeneration and inflammation compatible with morphological findings of myositis were found in 17 cases (47%), although, in most cases the findings were discrete. Morphological findings of inclusion body myositis (IBM), i.e. rimmed vacuoles, inflammation, and atrophic fibres, were found in 10 (28%). No clinical correlates to IBM were found in these patients. The immunohistochemical analyses revealed a pathological expression of MHC class I in 18 (50%) and MHC class II in 16 (44%). A capillary expression of MAC was found in 27 (75%) of the biopsies. No correlation was found between pain and inflammation, degeneration, myositis, expression of MHC class I or II, or MAC. The pathological expressions of MHC class I and II were correlated to the degree of inflammation.

Conclusions. Although this study confirms that muscle involvement is common in SS, we did not find any specific morphological or immunohistochemical findings in muscle biopsies from patients with SS. Nevertheless, certain characteristic findings are worth stressing. Perivascular inflammation is common, and the expression of MHC class II is higher than in common polymyositis. These findings, together with a high degree of MAC expression points towards an immune-mediated and complement-dependent process engaging capillaries, similar to the findings in dermatomyositis. The high frequency of morphological findings typical for IBM, without characteristic clinical symptoms of this disorder, may be interpreted as a degenerative effect of earlier inflammatory activity. No correlation between muscular pain and morphological or immunohistochemical changes were found.