HISTOLOGICAL PICTURES OF MUSCLES AND AN EVALUATION OF CELLULAR INFILTRATIONS IN HUMAN PM/DM (POLYMYOSITIS/DERMATOMYOSITIS), AS COMPARED TO THE FINDINGS IN EXPERIMENTAL MYOSITIS IN GUINEA PIGS

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PM/DM belong to idiopathic inflammatory myopathies of unknown origin. We tested whether intramuscular injections of dermatomyositis patients’ sera into guinea pig muscles can be used to transfer myositic alterations to these animals. Sera samples (0.3 ml) were injected into the animals’ quadriceps muscles. Muscle excisions were taken 24 or 72 h after the injection. The material was fixed in Bouin’s solution and embedded in paraffin. Immunohistochemical staining was done for guinea pig Pan-T-cells, monocytes/macrophages and the neuronal marker PGP 9.5.

Histological evaluation of myositic alterations was performed using excisions taken for diagnosis. In the affected muscles, mononuclear infiltrations in the endomysium, vacuolar degeneration, necrosis, phagocytosis, and signs of regeneration of muscle fibers were noted.

In guinea pig muscle excisions, there were histological changes similar to those observed in PM/DM muscles. The findings were especially evident 72 h after sera injections. Immunohistochemical stainings showed that cellular infiltrations in experimental muscles had similar proportions of T lymphocytes to macrophages as observed in diseased PM/DM patient muscles.

Our studies proved that the factor(s) responsible for the appearance of characteristic alterations in diseased muscles during the course of DM are present in patient serum. It is not clear what kind of cells reveal PGP 9.5 positive granules in the regions of infiltrations in guinea pig muscles preinjected with patients’ sera.