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ABSTRACT FORM

REMARKABLE MAST CELL CHANGES FOUND IN SO-CALLED "SCREEN DERMATITIS"

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The aim of this study was to investigate possible changes in the mast cell population of so-called "screen dermatitis"/"electrosensitivity" patients' skin. As controls, age- and sex-matched persons working with VDTs (however, without any symptoms) served. Immunohistochemistry using histamine antiserum was utilized. Skin punch biopsies (2, 3 or 4 mm) were obtained under local anaesthesia (Xylocain, 20 mg/ml) in a laboratory with an electric and magnetic field strength of 2-6 nA and 90 μT/s (1-2 V/m; 80-90 nT), respectively, as measured at the biopsy spot with a Friman Instrument MF-4 (size of measuring plate: 21.5 mm x 65.5 mm; 1 m2 coil (type: MF-3) and an RC nT-converting filter; Friman Datakonsult AB, Stockholm, Sweden). From these studies, it is clear that the number of mast cells in the upper dermis is increased in the screen dermatitis patients (n = 15) as compared to normal healthy skin (n = 15). A different pattern of mast cell distribution also occurs in the patient group, namely, the normally empty zone between the dermo-epidermal junction and mid-to-upper dermis has disappeared in the patient group and, instead, this zone has a high density of mast cell infiltration. Finally, in the patient group, the cytoplasmic granules are more densely distributed and more strongly stained than in the control group, and, generally, the size of the infiltrating mast cells is larger.

Recently, a new category of patients has been described in the literature, namely those who claim to suffer from subjective and objective skin- and mucosa-related symptoms after exposure to VDTs as well as other electromagnetic devices, both at their work and in their home. In summary, it is evident from our preliminary data that major biological changes may be present in these patients, however, the underlying cause still has to be established by double-blind provocations. In view of the recent epidemiological studies pointing to a correlation between long-term exposures from magnetic fields and cancer, our data ought to be further analyzed.

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