A MORPHOLOGICAL AND IMMUNOHISTOCHEMICAL INVESTIGATION OF GUINEA PIG SKIN AFTER THE INTRODUCTION OF SUBSTANCE P AND VIP

HANNA GENDEK-KUBIAK, JACEK DANOWSKI and BOGUMIŁ L. KMIEĆ
Department of Histology and Embryology, Medical University of Łódź,
Narutowicza 60, 90-136 Łódź, Poland

In the skin, the presence of numerous neuropeptides (NPS) has been described. However, their meaning in the physiology and pathology of the skin has not yet been fully explained. NPS might potentially be efficacious medicines in different diseases, but their local effects in the skin have not yet been investigated. The aim of the study was to examine a morphological picture of skin injected with substance P and guinea pig vasoactive intestinal peptide (VIP) in order to estimate their local influence. Male guinea pigs aged 5-6 months, weighing 350-400 g each, were used. 0.3 ml samples of NPS solutions were applied intradermally into the shaved dorsal area of the skin. Material was taken after 3 and 24h. As a control, skin from the opposite side of the body of the same animals was used. Routine histological stainings were done, together with the immunohistochemical reactions for T lymphocytes and for macrophages. After SP application, the formation of subepidermal clefts and the widening of cutaneous lymphatic vessels were observed. In the deeper layers of the skin, the number of T lymphocytes increased. 24 hours after SP injection, the changes were observed to have intensified. VIP evoked the extension and overfilling of the blood vessels, and, sometimes, erythorrhages to the tissues. Cellular infiltrations around the nerves and blood vessels were also observed. The intensity of the changes were greater after 24 hours. The local effects of the above-mentioned neuropeptides require further investigation.

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