

In the case of minimum values of these interspike intervals, APs generated by coupled neurons overlapped each other; this resulted in the formation of spikes looking like "complex APs." Within some time intervals, interspike intervals could increase, and such APs began to be decomposed.

Conclusion: The above-described data are considered the electrophysiological proof of the existence of tight functional coupling between a significant part of cortical neurons spatially close to each other, i.e., members of a micro population, which was obtained in an *in vivo* experiment.

Keywords: multichannel microelectrode recording, motor cortex of mammals, neuronal micropopulations.

SKIN AGING

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Similar to entire organism, skin aging is the imminent intrinsic process, this being also caused by exogen factors. Skin aging and photoaging are especially caused by the ultraviolet radiations, this being the main reason of skin transformation in sun exposed areas.

Despite morphological and pathophysiological differences, the intrinsic and extrinsic skin aging share several similarities on molecular level.

Primary skin aging aspects are defined by the formation of oxygen reactive species and the induction matrix of metalloproteinases. The accumulation of fragmented collagen fibrils prevents neocollagenoses and causes the deterioration of extracellular matrix through positive feedback methods.

The importance of the extrinsic skin aging initiated the development of several preventive therapeutic methods.

BIOCHEMICAL STUDY OF NASAL SECRETIONS IN CHRONIC HYPERTROPHIC RHINITIS

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Introduction: Chronic hypertrophic rhinitis (CHR) affects the air passage by the respiratory lane of the nasal fossae, making the act of respiration harder and reducing considerably the life's quality of the patients (about 16-50% of the population suffer from CHR).

Morphologically, the hypertrophy of all the nasal turbinate layers occurs including the glands and nasal mucosa.

Nowadays, the diagnosis of CHR is made on clinical examination and patient's anamnesis. However, the pathogenetic mechanisms of this disease induce important changes at the cellular and biochemical levels, undetectable in its prodromal period and which anticipates the clinical manifestations. Exactly these primary alterations are the trigger, on which the further evolution of the disease will depend.

Methods: Therefore, our aim was to investigate the changes in nasal secretion's biochemical composition, in patients with CHR and the normal one. We consider that these data allow us to understand better the etiopathogenesis of the disease, to reveal indirectly the affected cellular constituents (channels, ion pumps, transporters, enzymes), their role in the genesis and evolution of the disease, as well as to elaborate a new, etiotropic and pathogenetic, conservative treatment (nowadays, the main method of treatment of CHR remains the surgery).

Results: For this purpose, a group of 15 patients, previously diagnosed with CHR, was selected. Their age was between 8 and 21 years old: 8 females and 7 males. Control group included five participants, without clinical signs of any upper respiratory disorders. Samples were taken by swabbing (in the case group) and by nasal lavage (in the control group).

Due to some chemical reactions, specific for each nasal secretion's component, colored compounds were first obtained and then dosed by the spectrophotometric method.

Conclusions: So, we established the normal and pathological (CHR) concentration of the next 8 nasal secretion's components: total protein, albumin, Ca^{2+} , Pi , Fe^{3+} , Na^+ , Cl^- and Mg^{2+} .

The results show increased levels of the albumin, Ca^{2+} , Pi , Na^+ , Mg^{2+} in the nasal secretion of the patients with CHR, compared with that of control group's representatives.

Also, we can remark a decreased concentration of the total protein, Cl^- and Fe^{3+} .

Biochemical reactions and the spectrophotometric method allowed us to determine the concentration of some constitutive elements of the normal nasal secretion and of that in CHR. It helped us to compare, to analyze and to highlight some of the specific features of the pathogenesis of this disease - data which present real clinical interest for establishing an effective conservative treatment.

Keywords: chronic hypertrophic rhinitis, nasal secretion, biochemistry.

SOME CHARACTERISTICS OF BRAIN VASCULARIZATION

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Introduction: This study concerns some aspects of individual anatomical variability on cerebral vascularisation, particularly arterial circle of Willis. In polymorphism it is important to know the arterial ring once deficiencies in brain may alter pounds.

Objectives: The criteria have guided us in making this research as: literature review with reference to the concerned issue; determination of morphometric parameters of the polygon forming arterial vessels; investigate parameters that brain arteries often show polymorphisms location; establish individual anatomical variations of the arterial polygon and arguing their clinical importance.

Materials and methods: The work is based on 12 prepared anatomical researches and 18 digitized scientific angiography (DSA).

Results: According to the data from the record investigated preparations we found that: In 9 cases the components of the arterial circle of Willis are integral; in 7 cases there was noticed an absence of the posterior artery; in 6 cases it turns out that one of posterior cerebral artery manifests independence and it is not related to basilar trunk; in 4 cases one of the cerebral arteries is atrophied, in counterpart to the second that is being developed to excess; in one singular case independence of the both was registered;