STRUCTURAL ORGANIZATION OF THE FACIAL NERVE
IN THE CANAL OF THE TEMPORAL BONE

Lupyr M.V, Staritsyna P.A.
Kharkov national medical university
Kharkov, Ukraine

СТРУКТУРНАЯ ОРГАНИЗАЦИЯ ЛИЦЕВОГО НЕРВА
В ОДНОИМЕННОМ КАНАЛЕ ВИСОЧНОЙ КОСТИ

Лупырь М. В., Старицына П. А.
Харьковский национальный медицинский университет
Харьков, Украина

Relevance of the topic. The questions of the study of the structure of the facial canal and intracanal part of the nerve are illuminated in the few works, and especially poorly understood features of its structural organization in the different parts of the facial canal. Meanwhile, developments in the hearing improving operations, improving of the operational procedures on the middle ear formations requires more precise information on the progress of the nerve in the facial canal, as well as data of the intratruncural structure over the canal. This prompted to undertake this study.

Aim of this study was to investigate the structural organization of the facial nerve in the same canal of the temporal bone.

Methods: macroscopic-microscopic, and microscopic gistotopography.

Results of the study. We have identified three parts of the facial nerve: a labyrinth, tympanic, mastoid. On our material intermediate nerve often lies under the facial, which is consistent with a number of researchers. However, in three preparations intermediate nerve is located medially to the facial nerve, more rare (2 preparations) - above and behind the trunk of the facial nerve. In the internal auditory canal of the facial nerve trunk in cross section had a rounded or oval shape. The cross sectional area of the facial nerve is 12-19% of the cross-section of the internal auditory canal. On the 3 preparations, intermediate and facial nerves are connected in the middle section of passage or near the internal auditory opening. On a number of preparations (5) observed thin connecting branches between the intermediate and facial nerve before the merger them into a single trunk.

In the labyrinth section of the canal the trunk of the facial nerve in the cross section is rounded and held from 25 to 50% of its area. On the border of the labyrinth and tympanic parts 14 preparations of nerve separated from 3 to 7 thin trunks to tympanic plexus.

Analysis of the myeloarkhitectonic of the facial nerve was carried out on three levels: 1) in the inner ear canal separately the spine of the facial nerve and the intermediate nerve, 2) in the labyrinth section of the facial nerve proximally to the geniculate, and 3) at the level of the stylo-mastoid opening. In the region of the internal auditory canal in the number of facial nerve myelin fibers was in the range from 4600 to 12500 (8458,5 ± 976,4), in the intermediate - ranged from 1100 to 3500 (2289,6 ± 208,4). At the 2nd level in the nerve was determined from 6550 to 14800 (10723 ± 993,2) myelinated fibers. Below the stylomastoid opening their numbers ranged from 4250 to 12380 (8720,4 ± 887,6). Analysis of the composition of myelinated fibers of different size groups in the trunk of the nerve at the level of the internal auditory canal showed that it is dominated by medium and thick fibers. Fat content is from 20 to 80%, medium - from 10 to 73%, and thin from 7 to 40%. Proximally to the node of the genicullum in the trunk of the nerve fiber content indicators changed insignificantly different modalities (thick contained 15 to 70%, average - 20 to 60%, thin 10% to 35%).

CONCLUSIONS.

As a result, our research found:

1). In different parts of the canal the ratio of its walls and trunk of the facial nerve different.

2). Intratruncural structure of the facial nerve in the studied departments have differences.

3) In the myeloarkhitectonic of the facial nerve in each of the studied parts are marked as features as similarities. A common feature of all studied sections of the facial nerve is its presence in the myelin component fibers, Groups A-alpha, B and C. Differ quantitative structure of myelin component. So, the greatest number of myelinated fibers observed in the labyrinth department nerve (10723 ± 993,2). In the facial nerve and extracranial department in the total number of myelinated fibers was almost the same (8458,5 ± 976,4 and 8720,4 ± 887,6 respectively).