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VARIATION OF THE CERVICAL BRANCH OF THE FACIAL NERVE

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The impairments of the facial nerve have both clinical and social impacts on people's life quality. Patients are subjected to psychological suffering, especially if the patient is a female. Taking into consideration that number of women who apply to re-juvenating procedures and plastic surgery has an increasing tendency and many of those women are of young age, that is why we decided to review the morphological specific features of the cervical branch of the facial nerve. The aim of our study was to mark out the variation of divisions, connections and topography of the cervical branch of the facial nerve that is of great clinical significance in head and neck surgery. The following variations were marked out: 1 CB in 42 cases (76.4%), 2 CB in 10 cases (18.2%), 3 CB in 1 case (1.8%), 4 CB in 1 case (1.8%), 6 CB in 1 case (1.8%). Considering the prevalence of 1 CB in 1/3 of cases there is a high iatrogenic risk for CB injury in neck surgery.

Key words: *cervical branch, facial nerve, connections, neck surgery.*

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ВАРИАНТЫ ШЕЙНОЙ ВЕТВИ ЛИЦЕВОГО НЕРВА

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Нарушения лицевого нерва оказывают как клиническое, так и социальное влияние на качество жизни людей. Пациенты подвергаются психологическим страданиям, особенно если пациентом является женщина. Принимая во внимание то, что в последнее время отмечается тенденция к росту числа женщин, которые применяют омолаживающие и пластические процедуры, многие из которых женщины молодого возраста, мы решили изучить более детально морфологические особенности шейной ветви лицевого нерва. Целью нашего исследования было определение вариантов ветвления, соединений и топографических особенностей шейной ветви лицевого нерва, имеющих клиническое значение в хирургии головы и шеи. Были отмечены следующие варианты: 1 шейная ветвь (ШВ) в 42 случаях (76,4%), 2 ШВ в 10 случаях (18,2%), 3 ШВ в одном случае (1,8%), 4 ШВ в одном случае (1,8%), 6 ШВ в одном случае (1,8%). Учитывая то, что в 1/3 случаев у человека имеется только одна шейная ветвь, существует

высокий риск ятрогенного повреждения ШВ при хирургических вмешательствах на шейной области.

Ключевые слова: шейная ветвь, лицевой нерв, соединения, хирургия шеи.

Introduction. The rejuvenating procedures and facial aesthetic surgery may result in dramatic facial palsy, and unfortunately in some cases the lesions are irreversible [1, 3, 4]. The cervical branch of the facial nerve has a great significance in contraction of the platysma muscle assuring the blood drainage from the superficial veins of the neck, and more that this by contraction it changes the facial expression.

Aim of study: The purpose of our study was to mark out the variation of divisions, connections and topography of the cervical branch of the facial nerve.

Material and methods. Our study was carried out at the Department of Human Anatomy of *Nicolae Testemitanu* State University of Medicine and Pharmacy of the Republic of Moldova in line with International Ethics Regulations. According to the goal of study 55 embalmed cadaveric semiheads were dissected. The unilateral pattern of dissection was applied on 23 semiheads and bilateral pattern on other 32 semiheads. The number of cervical branches, their course, connections and topographical relations to the neighbouring anatomical structures were observed and the results were statistically processed.

Results and discussion. The facial nerve is one of the most susceptible cranial nerve to iatrogenic injures in facial and neck surgery, due to superficial location of its branches.

According to Yokoyama et al. [5] (2014) the "facial nerve stretching during surgery has a significant serious effect on postoperative facial palsy".

For facial trunk identification were used both soft tissue and bony landmarks such as: posterior belly of the digastric muscle, retromandibular vein, great auricular nerve, posterior margin of mandibular angle, the styloid and mastoid processes [2].

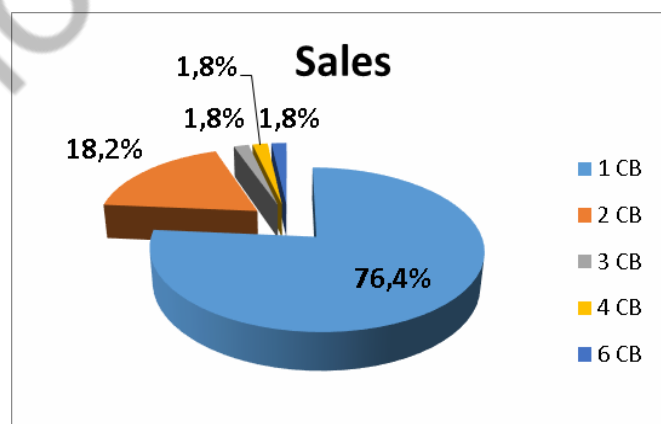


Figure 1. Percentage of cervical branch variation.

The cervical branch of the facial nerve was single in 42 cases, two cervical branches were marked out in 10 cases, and there were revealed 3 cases of multi-

ple cervical branch respectively 3 CB, 4 CB and 6 CB. The last two cases with 4 and 6 cervical branches were observed in the same female cadaver. The percentage of cervical branch variation was represented by a diagram (figure1).



Figure 2. Double cervical branch with triple connection between both cervical branches. Temporofacial division (1); cervicofacial division (2); anterior cervical branch (3); posterior cervical branch (4); superior connection between cervical branches (5); middle connection between cervical branches (6); inferior connection between cervical branches (7), double connection between cervical branch and great auricular nerve (8).

In all our cases the CB was connected to the transverse cervical nerve of the cervical plexus forming the superficial cervical loop. In one case of double CB they were connected to each other by triple superior, middle and inferior connections, and the posterior CB was twice connected to the great auricular nerve (figure 2). In all cases of multiple cervical branches the superior CB was connected to the marginal mandibular branch.

Conclusions: The cervical branch of the facial nerve is subjected to variability, and a surgeon should keep in mind that in many people there is only one cervical branch (in our study it was characteristic for 76,4% of cases), and its injury in neck surgery can lead to severe paralysis.

REFERENCES

1. Baker DC, Conley J. *Avoiding Facial Nerve Injuries in Rhytidectomy. Plast Reconstr Surg*, 1979, 64:781-785.
2. Davies JC, Agur AMR, Fattah AY. *Anatomic landmarks for localisation of the branches of the facial nerve. OA Anatomy* 2013, 1(4):33.
3. Hwang K. *Surgical anatomy of the facial nerve relating to facial rejuvenation surgery. J Craniofac Surg*, 2014, 25(4):1476-81.
4. Volk GF, Pantel M, Guntinas-Lichius O. *Modern concepts in facial nerve reconstruction. Head & Face Medicine*, 2010, 6(1):25.
5. Yokoyama J, Ooba S, Fujimaki M, Anzai T, Kojima M, Ikeda K. *Impact of removing mastoid process for advanced parotid cancer on facial nerve identification, preservation and reconstruction. Head & Face Medicine*, 2014, 10:6.