

# ANATOMOTOPOGRAPHIC PARTICULARITIES OF THE VASCULONERVOUS FORMATIONS AT THE INFRATEMPORAL REGION LEVEL

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**Abstract:** The infratemporal region represents one of the most difficult territories, from the anatomical and surgical point of view, due to the crowded relations between the vascular and nervous elements. The nerves and vessels of the region could present non-systematic, different trajectory and divisions, the presence of common emerging trunks being relatively frequent. This will result in a modification of the topographic relations of the nerves and vessels in this region.

**Keywords:** infratemporal region, vascular and nervous formations, anatomy, topography.

**Rezumat:** Regiunea infratemporală reprezintă cel mai dificil teritoriu „anatomic și chirurgical” al capului, acest fapt datorându-se numeroaselor formațiuni vasculonervoase care au un raport topografic „înghesuit”. Atât nervii cât și vasele regiunii pot avea un traiect și o ramificație diferită, nesistematică, prezența trunchiurilor vasculare și nervose comune, de urgență este relativ frecventă. Acest fapt va avea ca rezultat modificarea raporturilor topografice ale vaselor și nervilor de la acest nivel.

**Cuvinte cheie:** regiune infratemporală, formațiuni vasculonervoase, anatomie, topografie

## MATERIAL AND METHOD

This paper studied a number of 4 corpses, analysing the topographic relations between the vascular and nervous elements at the level of the infratemporal fossa. The corpses were kept in solutions containing formol, alcohol, water, glycerine, phenol, substances which play a part in preserving and maintaining the anatomic pieces in a condition as suitable as possible for research and dissection.

The infratemporal region is not a superficial region of the body and for this reason it should be dissected after having studied the regions which covered it.

In the first stage, the delimitations of the anatomotopographic superficial regions of the head and neck were made on the body.

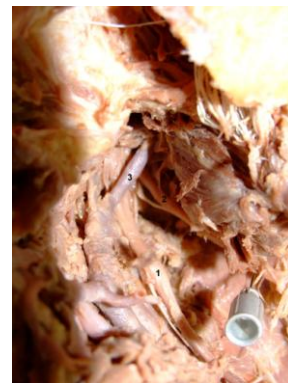
Afterwards, we marked the delimitations with the dermatographic pencil, then we made the incisions of the skin and started the proper dissection.

## RESULTS AND DISCUSSION S

Morphometrical studies are in accordance with the data from the specialized literature, emphasizing the topographic relations between the respective nerves and the reference points, which may be useful in the nerves identification.

During dissection, we emphasized the topographic relations between the vessels and the nerves of the region taken into consideration and the anatomic variants presented at this level. In one of the cases, the inferior alveolar nerve represented the most voluminous terminal branch, being placed between the two pterygoid muscles, posteriorly and laterally to the lingual nerve and crossed to the maxillary artery and to the chorda tympani (fig 1).

**Fig.1**



1. inferior alveolar nerve
2. lingual nerve
3. maxillary artery

A particular case is represented by the inferior alveolar nerve, being made up of two roots, both of them being placed laterally to the maxillary artery (fig.2).

**Fig.2**

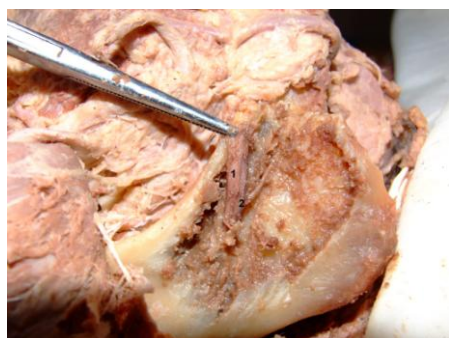


1. lingual nerve
2. inferior alveolar nerve
3. medial pterygoid muscle
4. maxillary artery
5. inferior alveolar artery

In all cases, the inferior alveolar nerve presents a flexuous trajectory at the entry into the mandibular mouth.

In one of the cases taken into consideration, the inferior alveolar nerve had former reports regarding the inferior alveolar artery at the level of the mandibular mouth; in the initial mandibular channel, it is placed previously to the artery, then above it. (fig.3).

**Fig. 3.**



1. inferior alveolar nerve
2. inferior alveolar artery

In one of the cases, the inferior alveolar artery is accompanied by a branch of the inferior alveolar nerve detached from this one, which is attached to the artery immediately after its emergence from the maxillary artery. (fig.4)

**Fig. 4**



1. inferior alveolar nerve
2. inferior alveolar artery
3. branch for the inferior alveolar artery

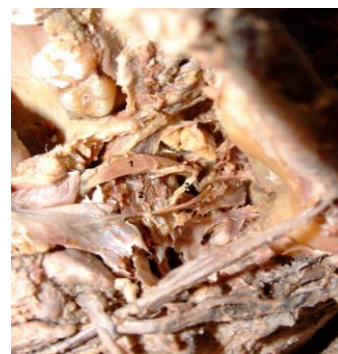
In one of the cases, the inferior alveolar nerve presents an anastomose with the lingual nerve and only in one case, an anastomose with the chorda tympani nerve. In one of the cases, the lingual nerve presented the most voluminous branch of the mandibular nerve (fig.5).

**Fig. 5.**



1. lingual nerve
2. inferior alveolar nerve
3. medial pterygoid muscle
4. maxillary artery
5. In two cases, the lingual nerve issues a nervous branch for the innervation of the medial pterygoid muscle (fig.6).

**Fig.6.**



1. lingual nerve
2. medial pterygoid muscle
3. medial pterygoid muscle nerve

In both cases, the lingual nerve and the inferior alveolar nerve were placed medially to the maxillary artery.

**Fig. 7. Corpse 1**

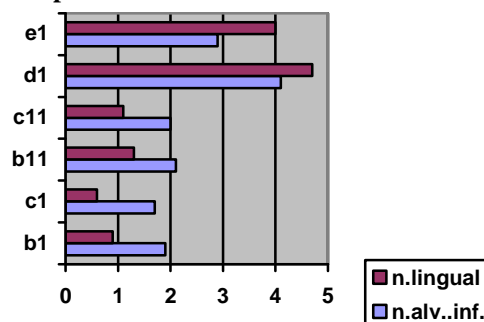
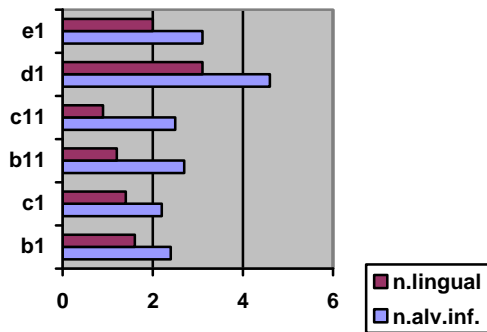


Fig. 8. Corpse 2



### CONCLUSIONS

1. Our research confirms the existing data regarding the topographic relations between the branches of the mandibular nerve, maxillary artery with its branches and the bone reference points at the level of the infratemporal and retromolar region.
2. The profound positioning of the infratemporal region, the richness of the vasculonervous elements at this level, the quite large number of the anatomic variants encountered, turned it into a region difficult to be approached.
3. The inferior alveolar nerve presents in certain cases communicating branches with the lingual nerve, and the milohyoidian nerve may give nervous fillets for the molar of the inferior arch.
4. In 43% of the cases taken into consideration, the maxillary artery presented a profound positioning - cases where reports were presented, either at medial level, or laterally to the inferior alveolar nerve and to the lingual nerve. No case was found, where the inferior alveolar nerve and the lingual nerve should comprise the maxillary artery.

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