

# Topography and blood supply to the mandibular lymph node of the Baikal seal (*Pusa sibirica* Gmelin, 1788) in ontogenesis

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**ABSTRACT.** The research purpose is to study the topography and blood supply to the mandibular lymph nodes of the Baikal seal which is an endemic animal of Lake Baikal. The lymph nodes perform a number of vital functions, which should be taken into account when analyzing the pathogenesis of diseases. It was identified that the mandibular lymph nodes are grouped near the angle of the lower jaw and closely located. Their color varies from rich burgundy to light pink. The shape can be triangular, circular, or oval. The length is identical in all age groups. Diameters of oval and round shapes are almost identical in all age groups. The main sources of blood supply to the mandibular lymph nodes are the external jaw artery, the cranial thyroid artery (their branches are directed to the nodes grouped cranially), and the caudal thyroid artery (it supplies blood to the second largest lymph node located caudomedially).

**Keywords:** Baikal seal, topography, blood supply, lymph node, ontogenesis

## 1. Introduction

The lymph nodes belong to the peripheral organs of the immune system. The lymph nodes of terrestrial mammals have been studied in detail. The lymph nodes of aquatic mammals are underexplored (Kutyrev, 2005; Volodina et al., 2018; Grushko et al., 2019). The lymph nodes perform a number of vital functions, which should be taken into account when analyzing the pathogenesis of diseases. The research aims to study the topography and blood supply to the mandibular lymph nodes of the Baikal seal.

## 2. Material and methods

The research material is mandibular lymph nodes of immature ( $n = 5$ ) and mature ( $n = 3$ ) Baikal seals. To describe the topography and taxonomy of names of the anatomical formations of the lymph nodes, the International Veterinary Anatomical Nomenclature was used (Mezhdunarodnaya..., 2013). Blood supply was studied by preparing and producing corrosive preparations after preliminary infusion of blood vessels with Invamat construction foam (Ryadinskaya, 2011). Morphometric data were statistically processed.

## 3. Results and discussion

3-4 mandibular lymph nodes of various sizes and shapes are grouped near the angle of the lower jaw. The largest node weighing  $0.5 \pm 0.09$  g in immature animals and  $1.1 \pm 0.25$  g in mature seals is burgundy. It is of a triangular shape, located at the point of attachment of the masseter and biceps muscles. The length of its sides is  $17.1 \pm 1.41$  mm in immature animals and  $18.4 \pm 1.64$  mm in mature ones. The second largest node is pink, located caudomedially from the first node. It has a shape of an isosceles triangle with rounded corners. In immature seals, the length of its sides is  $16.8 \pm 1.12$  mm; and in mature seals, it is  $18.0 \pm 0.93$  mm. One more node is light pink, rounded, with a diameter of  $6.2 \pm 1.12$  mm in immature animals and  $7.6 \pm 1.28$  mm in mature ones. It is located medially from the first lymph node. The fourth node is light pink, oval, with a diameter of  $7.3 \pm 1.05$  mm in immature animals and  $8.4 \pm 1.37$  mm in mature ones. It is located medially from the third node.

The main source of blood supply to the first, third and fourth mandibular lymph nodes is the external jaw (with a diameter of  $1.7 \pm 0.11$  mm in young individuals and  $2.0 \pm 0.43$  mm in adults) and the thyroid artery (with  $1.8 \pm 0.09$  mm in diameter in young animals and  $2.2 \pm 0.16$  in adults). The second mandibular node

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receives a branch from the caudal thyroid artery with a diameter of  $2.3 \pm 0.71$  mm in young animals and  $2.8 \pm 1.24$  mm in adults.

#### 4. Conclusion

The mandibular lymph nodes of the Baikal seal are grouped near the angle of the lower jaw. They have a shape of an isosceles triangle, circle or oval. They differ in color, size and weight. The morphometric indicators are almost identical in all age groups. The main source of blood supply to the mandibular lymph nodes is the external jaw, cranial and caudal thyroid arteries.

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