СРАВНИТЕЛЬНАЯ АНАТОМИЯ ПОДЪЯЗЫЧНОЙ КОСТИ ЖИВОТНЫХ И ЧЕЛОВЕКА

Кривченко Ю.В., Поликарова Д.В.
Харьковский национальный медицинский университет
Харьков, Украина

COMPARATIVE ANATOMY OF THE HYOID BONE OF ANIMALS AND HUMANS

Krivchenko Y. V., Polikarova D.V.
Kharkov national medical university
Ukraine, Kharkov

Hyoid bone is located in the neck, between the lower jaw and larynx. It consists of a body and two pairs of appendages: small and large horns. The hyoid bone performs several important functions in humans and animals. First, the neck muscles that are involved in breathing, chewing and speech are attached to the hyoid bone. Secondly, the hyoid bone, attaching to the guttural cartilage, promotes the formation of the respiratory cavity.

During the evolution the hyoid bone appeared after the animals had come on land. It was formed from the front part of the visceral (gill) arches.

If the structure of the fish skeleton be examined, it will be noticed that its hyoid bone looks as a gill arch and consists of two lateral and one middle parts. These parts correspond to the front or small horns and less to the hyoid bone's body of higher vertebrates. As for the rear pair of horns (big horns), they are a remnant of the first pair of gill arches. Such residual arcs around the hyoid bone amphibians can have up to 4 pairs, when other vertebrates usually have only one front pair of arcs. The appropriate medial part also composes the body of the hyoid bone.

With the development of tongue the size of the big horns become larger than small ones that reduce and move away from the bones of the skull. As we can notice the hummingbirds, woodpeckers and other birds that have a long retractable tongue, also have big horns of the hyoid bone with a considerable length. They bend around the skull, and front ends of the bone are embedded in the recesses or grooves of the front jaw. Big horns play an important role in peculiar motions of the woodpecker's tongue. Nominating muscles of the tongue depart from the lower jaw and spirally entwine the horns of the hyoid bone and attached to the free end of each horn. This way, during reduction of the muscles, horns slip over the skull, move forward and push the tongue out from the

mouth. The bird may nominate its tongue according to the length of horns.

The American howler monkeys basihyoid concave and has the form of thin-walled tank, that comes webbed guttural sac, which is a projection tracheal mucosa. Such bags Mycetes have two, but only the right one reaches such development and comes into the hyoid bone. This apparatus creates a powerful resonator, which makes monkeys roar audible for miles.

However, human hyoid bone has obvious differences from the same bones of animals, although it similar in structure to the hyoid bone monkeys. In general, the hyoid bone of mammals is movably connected with the bones of the skull while in human body it lies deep in the muscles of the neck . Besides , the hyoid bone of animals , in most cases has a long small horns, which are attached to the bones of the skull , while the same horns of the human hyoid bone have a comparatively small size . This is primarily due to the position of the bone in the human body. So animals basihyoid directed to down. The human, in connection with the upright posture ,have changes with the position of the hyoid bone, the front of the bone body directed to forward. Therefore, the shape of the bone changes into more convenient for the attaching of the neck muscles and tongue. In addition, the lack of connections between the hyoid bone and the skull may be the cause human's speech development, as the absence of joints makes the bone more mobile that allows the tongue to perform a various movements .