Myelencephalon Encyclopedia Article

Myelencephalon

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Myelencephalon

The myelencephalon, or **medulla oblongata**, is one of the last portions of the brainstem to be contained in the **cranium**. It lies just above the occipital condyles and connects to the **spinal cord**, which exits through the foramen magnum. It is a rather small swelling of the hindbrain that lies directly below the **pons**. Between each side of the anterior medulla there is a longitudinal fissure that separates each half. On the posterior side, a fissure extends upward to the fourth ventricle. The medulla itself is rather small. It measures about and inch in length, three quarters of an inch wide, and only about one half and inch in thickness.

At the superior (top) region of the medulla are two swellings of **tissue** called the pyramids. The two pyramids are bundles of white matter. Some tracts contain afferent nerve tracts while others contain efferent nerve tracts. This organization of incoming and outgoing signals is part of the neuronal coordination of the medulla

On each side of the pyramids is a small oval shaped structure called the olivary body or just plain olive. It contains a rippled layer of **gray matter**, the inferior olivary nucleus. This body acts as a relay station for signals on their way to the **cerebellum**. It is separated from main body of the medulla by a small depression from which the hypoglossal nerve emerges.

In addition to the origination of the hypoglossal nerve (XII), the glossopharangeal (XI), accessory (XI) **cranial nerves** originate in the medulla. Not only is the medulla the site of the nuclei for the formation of these cranial nerves it is also responsible for the control of coughing, sneezing, vomiting, and perspiring. This small structure is also responsible for three other important functions. The cardiac center makes adjustments to the rate and force of heartbeats. Another important location is the vasoconstrictor center, which regulates **blood** pressure by adjusting the vessel diameter. It may reroute blood from one place in the body to another depending on need. The respiratory center controls the rate and depth of **breathing**.

The medulla oblongata is believed to be one of the more primitive regions of the **brain**. It is formed early in development and regulates some of the basic functions of the body.