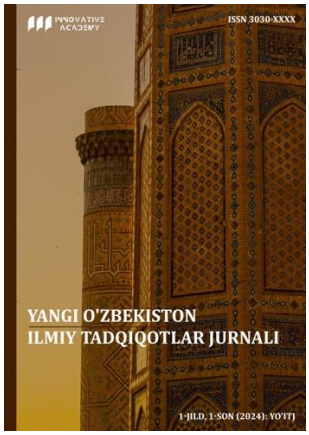

FORMATION OF SPINAL NERVES. POSTERIOR BRANCHES OF SPINAL NERVES.

Shukurjonova Nafisa Toxir kizi
Bo'riyev Behruz Xamza ug'li
Xamidullayev Lazizion Asatilla ug'li
Students of the 1st year group 106-b of the Faculty of Dentistry of the Tashkent State Dental Institute
Khalilov Sanjar Abdivohid ugli
Assistant teacher of the Department of Anatomy of the Tashkent State Dental Institute
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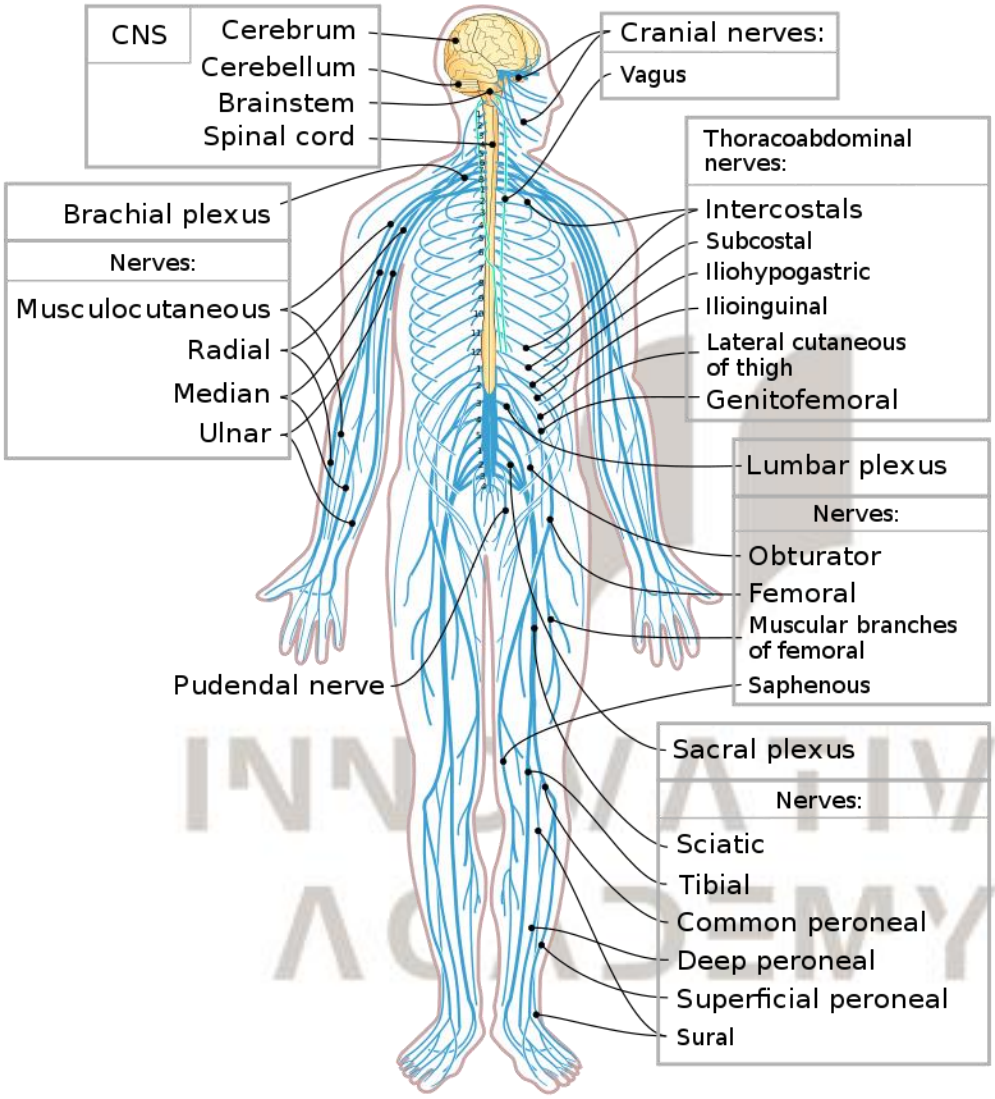
ABSTRACT

Each nerve forms from nerve fibers, known as fila radicularia, extending from the posterior (dorsal) and anterior (ventral) roots of the spinal cord. The roots connect via interneurons. Grossly, the root fibers join together within the intervertebral foramina to form a spinal nerve. Spinal nerves are the nerves that start from the spinal cord in humans. Spinal nerves. 31 pairs: 8 pairs of neck, 12 pairs of chest, 5 pairs of back, 5 pairs of rump and 1 pair of caudal nerves. Spinal nerves. spreads to body muscles, skin. Spinal nerves. and the nerve fibers of the neck, shoulders, back, rump and tail formed in them connect the skin, internal organs and skeletal muscles of the whole body with the central nervous system (innervation). Spinal nerves. it contains sensory and motor fibers. Excitability receives sensations through nerve endings (receptors) located in organs, muscles, and skin to the central nervous system, and from there, through motor nerves, delivers the necessary response impulses to the working organs. The speed of transmission of effects is on average 0.5-120 m. It is faster in large-diameter nerves.[1]

A crucial component of the central nervous system, the spinal cord gives rise to spinal nerves that play a crucial role in transmitting sensory and motor signals between the body and the spinal cord. Understanding the formation of spinal nerves is critical to unraveling the complexities of neural development. This article reviews the available literature for a comprehensive understanding of the various stages and factors that influence spinal cord formation.

Many studies have investigated the embryological origin of spinal nerves and emphasized the contribution of neural stem cells in this process. Neural stem cell migration and differentiation are tightly regulated by a complex interplay of molecular signals, including bone morphogenetic proteins (BMP) and Sonic hedgehog (Shh). In addition, recent advances in molecular biology have provided insight into gene expression patterns and transcription

factors that control spinal cord development. The methodologies used to study spinal neurogenesis are diverse and include a range of experimental approaches, including genetic analyses, live imaging, and cell culture studies. Animal models, particularly mice and zebrafish, have been instrumental in elucidating the molecular and cellular events underlying spinal cord development. In this section, the methodologies used in basic research and their formation of the spinal cord contributions to our understanding are discussed.



Spinal nerves are sensitive (afferent) and arise from the spinal cord. It is formed by the combination of motor (efferent) nerve fibers. The spinal cord is a cylindrical bundle of nerve fibers and connective tissue located within the spinal column (spinal cord). It plays a crucial role in transmitting signals between the brain and the rest of the body. Brief information on the formation of spinal nerves:

Segments of the Spinal Cord:

- The spinal cord is divided into segments and each segment is a pair of spinal cords causes nerves. Humans have 31 pairs of spinal nerves and they are divided into segments.

Dorsal and Ventral Roots:

- Each spinal nerve has two roots: dorsal (back) and ventral (front) roots.

- The dorsal root contains sensory (afferent) nerve fibers, which are sensitive

carries signals from receptors (such as those in the skin, muscles, and organs) to the spinal cord. Dorsal root ganglia located along the dorsal roots contain the cell bodies of these sensory neurons.

- The ventral root contains motor (efferent) nerve fibers that transmit signals from the spinal cord to muscles and glands.

Spinal Nerve Formation:

- When the dorsal and ventral roots exit the spinal cord, they are outside the spinal cordunite to form a single spinal nerve.

- The point of convergence of the dorsal and ventral roots is the spinal nerve root or back cranial nerve is properly called.

Mixed Nerves:

- Spinal nerves are considered mixed nerves because they also contain

There are both sensory and motor fibers.

- These mixed nerves intervertebral foramen (holes between adjacent vertebrae)

passing through and spreading to different parts of the body.

Branching and Distribution:

- After exiting the intervertebral foramen, the spinal nerves often divide into smaller nerves and form complex nerve networks.

- Branches to certain areas of the body, including skin, muscles,

innervates joints and organs.

Plexuses:

- In some regions of the body, for example, the cervix and lumbar in regions where the spinal nerves are interconnected, called plexuses creates networks.

- Plexuses redistribute fibers from different spinal nerves, and major nerves arising from plexuses carry mixed fibers to specific areas.

Understanding the formation of spinal nerves is essential to understanding how the nervous system facilitates communication between the Central Nervous System (brain and spinal cord) and peripheral tissues and organs throughout the body.

The discussion section critically analyzes the results, based on existing knowledge highlights gaps and potential avenues for future research. He studies the effects of spinal neurogenesis in

health and disease, considering the relevance of this knowledge to the understanding of neurodevelopmental disorders and the development of therapeutic interventions. In addition, the article discusses the evolutionary aspects of spinal nerve development, comparisons across species.

In conclusion, this article brings together the current understanding of spinal neurogenesis and highlights the complex molecular and cellular mechanisms involved. The review highlights the importance of ongoing research in this area to unravel the complexities of neurodevelopment and provide insight into potential therapeutic interventions for neurological disorders.

Foydalanilgan adabiyotlar:

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