

Spinal cord stereotaxy

The origin of spinal cord stereotaxy can be traced back to the 19th-century work of Woroshiloff, the pioneer of brain stereotaxy. The development of clinical brain stereotaxy began in the mid-20th century, but spinal cord stereotaxy lagged behind. The first stereotactic spinal cord surgery was successfully performed by Hitchcock for pain treatment in the 1960s, and surgery for urinary bladder hyperspasticity performed by Nádvorník followed several years later. Other stereotactic surgeries of the spinal cord movement system could not be considered until Slovak anatomist Čierny used animal experiments (with cats) to discover the exact location of motoneurons for the individual muscles in the anterior horns of the spinal cord. Having compared the data with the pattern of Riley's atlas based on microscopic investigation of the human spinal cord (only motoneuron groups without functional properties), the first stereotactic spinal cord atlas was transferred to human structures. With the construction of a universal spinal cord stereotactic device began a new era in spinal cord stereotaxy. The investigation of spinal cord movement functions will probably become the main focus of this discipline that aims to restore physiologic movement after spinal cord injury associated with paraplegia ¹⁾.

¹⁾

Nadvornik P. Spinal Cord Stereotaxy: An Overview. J Neurol Surg A Cent Eur Neurosurg. 2015 Mar 23. [Epub ahead of print] PubMed PMID: 25798803.

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