

Review on the posterior suboccipital approach to foramen magnum meningiomas

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Abstract

There are three types of surgical approaches to the foramen magnum meningiomas which have various possible modifications include posterior suboccipital, far lateral and extreme lateral approaches. Endoscopic and ventral approaches have also been described although using such endoscopic and ventral approaches is rare. This is a brief review on the posterior suboccipital approach to the foramen magnum meningiomas.

Key Words: Posterior suboccipital approach – foramen magnum meningiomas

In the cases which the foramen magnum meningiomas are located posteriorly or posterolaterally, posterior suboccipital approach would be the choice. In these cases the brainstem is displaced towards the anterior direction and the cranial and spinal nerves are displaced towards the anterior and superior directions by the tumor. Such displacements cause surgical dissections to be done more safely with low risks to damage the important anatomical structures. The prone position is the choice for surgery. For suboccipital space expansion, the patient's head would be flexed slightly. After that the skin would be incised in the midline from a point below theinion to the third cervical vertebral spine. After that the incision of the skin will become deeper and identification of the foramen magnum's posterior rim and C1 and C2's posterior arch would be done. Dissection of the muscles would be done in a lateral direction. This muscles dissection would be done up to the condylar fossa. Then suboccipital craniotomy will be done. During such suboccipital craniotomy the C1's posterior arch will be removed. After dural opening, the tumor would be identified. Working in between the nerve rootlets, can making the tumor's anterior component removal possible in the cases which the tumor has two components which are anterior and posterior ones. Coagulation of the attachment of the dura and closing the thecal sac would be done after removing the tumor. Although in suboccipital approach there is no necessity to identify vertebral artery specifically when it is done purely, confirmation of the vertebral artery location prevents possible injury to the artery during surgical approach.

It is important for the neurosurgeons to have detailed knowledge about neurosurgical anatomy of the surgical approaches to the foramen magnum to approach the relevant pathologies accurately with lowest possible surgical complications.

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