

Brief Review on the Surgical Approaches to the Craniocervical Junction



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Abstract

Craniocervical junction abnormalities and lesions usually need surgical interventions for treatment. Such surgical interventions require having knowledge about the detailed anatomy of the area and presurgical planning to achieve the best results with lowest possible complications. This brief review tries to summarize the surgical approaches to the craniocervical junction which having knowledge about them is of great importance for the surgeons.

Keywords: Craniocervical junction; Surgical approaches; Presurgical planning; Anterior surgical approaches; Lateral surgical approaches; Posterior surgical approaches

Body

Craniocervical junction abnormalities and lesions in many of the cases require surgical intervention and this surgical intervention requires having detailed knowledge about the anatomy of the area and presurgical planning. The best surgical approach would be determined by the extent of the lesion and possible abnormality and their anatomical location [1]. In the axial plan, craniocervical junction abnormalities and lesions can be approached from anterior, lateral and posterior [2]. Anterior approaches include transoral, transcranial, transcervical and transnasal [3]. Transoral approach can be subclassified into translabioglossomandibular, buccopharyngeal, endoscopic, trans labiomandibular and transpalatal approaches. Transcranial approaches can be subclassified into pterional, orbitozygomatic and transfrontal approaches. Transnasal approach can be subclassified into transsphenoidal, endoscopic and transmaxillary. Lateral approaches include preauricular infratemporal, presigmoid, translabyrinthine, preauricular transtemporal, subtemporal transpetrosal and transcochlear.

Posterior approaches include retrosigmoid, suboccipital and extreme lateral [4]. Lateral intradural lesions and ones which have involved the temporal bone can be treated more effectively by employing a lateral approach. Extradural lesions can be best treated by employing anterior approaches. Posterior approaches are effective to treat intradural posterior lesions. To treat the intradural lesions, anterior approaches should be avoided since employing such approaches for these lesions may cause cerebrospinal fluid leakage, meningitis occurrence and also can

increase the risk of contamination with the organisms of the pharynx [5-7].

Conclusion

It is important for the surgeons to have detailed knowledge about the anatomy of the craniocervical junction and also have knowledge about the lesions and abnormalities which can affect this area. Also having detailed knowledge about various surgical approaches to attack the pathologies in this area is of great importance in selecting the best surgical approach during presurgical planning and in achieving the best surgical results with lowest possible complications.

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