Minimally invasive approach for intradural extra-medullary spinal tumors

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Complete resection of intradural extra medullary spinal tumor is the gold-standard treatment, particularly for tumors with less aggressive potential, such as meningiomas, neuromas or ependymoma. Accordingly, sufficient exposure for visibility and maneuvering space are crucial to this type of surgery. Therefore, extensive approaches were preferred in the past, with full laminectomies of 2 or more segments. These approaches led to problems in terms of large wounds with high infection rates and blood loss and may pre-disposed patients to spinal instability and deformities, like the swan neck that was observed especially in young patients who underwent multilevel laminectomy. This led to an increase the use of additional spinal instrumentation to solve this expected long-term complication. With technology advancing, several reports have elucidated that possibility to achieve a comparable quality of resection with minimally invasive approaches, thus dropping exposure-related comorbidities to a minimum. Our work objective is to share our experience with intradural extra medullary spinal tumor resection and show the feasibility and safety of tumor excision using a Minimally Invasive (MIS) approach. Our results showed that one and two level intradural extra medullary spinal tumors could be resected through a minimally invasive surgical corridor without an increased risk for adverse neurologic complications. The use of the tubular retractor system allows for adequate visualization while minimizing local tissue damage. MIS approach resulted in less post-operative pain, intra-operative blood loss, surgical time and length of hospital stay. In conclusion, MIS can be an appropriate alternative to an open approach for one or two level intradural extra medullary lesions. Although our initial experience is promising, these results will require validation through methodologically sound randomized, prospective trials before routine recommendation of MIS approaches for spinal tumor resection.

Biography

Basem I. Awad is an Assistant Professor of Neurosurgery from Egypt, currently working at Mansoura University School of Medicine, in Mansoura, Egypt. He is the Educational Neuro officer at the AOSpine Egypt Council Board. He has completed his Master Degree of Surgery at Mansoura University, Egypt and Doctorate Degree at Joint between Case Western Reserve University, Cleveland, OH and Mansoura University. He also received the Crockard International Spine Fellowship at Cleveland Clinic and the AOSpine International Fellowship at the Center for Spinal Disorders, CO, USA. Recently, he completed Bioinformatics PostDoc Fellowship at Luxembourg Center for Systems Biomedicine, University of Luxembourg. Dr. Awad is also member of many international socitles e.g. American Association of Neurosurgery (AANS), Congress of Neurosurgery (CNS), AOSpine, and North Americam Spine Society (NASS). He was selected to be on of the EDITORIAL BOARD for the Global Spine journal and World NEUROSURGERY Journal. His neurosurgical and scientific sub specializations includes spinal disorders and surgery, spinal trauma, spinal cord injury, neuro-oncology.

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