Evidence-based review and guidelines for the management of myxopapillary and intramedullary ependymoma

This systematic review about Intraspinal Ependymoma (ISE), limited to the previously established criteria, was based on 27 papers, including 1,211 patients. Unfortunately, there were not many published case series in the last 10 years about spinal ependymoma and even lesser number of series showing separated data of the two subtypes of ependymoma, myxopapillary and cellular ependymoma, although their clinic-pathological behavior are quite different. The overall recurrence/progression rate was 16.29%. The highest incidence of recurrence disease occurred in patients submitted to partial resection plus radiotherapy 66.66% and the lowest 8% after total resection plus radiotherapy. The mean PFS was 65.5 months, 5 years PFS rate was 74.75%, and 10 years PFS rate 69.5%. Regarding studies including only Myxopapillary Ependymoma (MPE), based on 5 papers, 199 patients were included. The overall recurrence/progression rate was 24.12%, higher than for the average of all ependymoma 16.29% and much higher than for cellular 3.63%. Five and 10 years PFS was 68.75% and 62%, respectively. Interestingly, the highest incidence of recurrence disease occurred in patients submitted to subtotal alone and partial resection plus radiotherapy 100%, followed by subtotal plus radiotherapy 34.78%. Gross-total resection alone resulted in 15.21%, while gross-total plus radiotherapy reduced the recurrence rate to 5.26%. The overall 5 years PFS rate 68.75%, being 78.4% for patients submitted to surgery plus radiotherapy and 49.7% for those submitted to surgery only. The 10 years PFS rate 73%, being 75% for patients submitted to surgery plus radiotherapy, and 37% for those submitted to surgery only. A review of series including sufficient data regarding Intramedullary Ependymoma (IME), was based on 4 papers, including 143 patients. The overall recurrence/progression rate was 3.63%. The highest incidence of recurrence occurred in patients submitted to subtotal resection alone 5.26%, followed by gross-total alone 3.37%. This review provides level IV of medical evidence supporting that early diagnosis and better preoperative neurological status can improve the postoperative neurological outcome in patients treated with intraspinal ependymoma. This review provides level IV of medical evidence supporting the role of gross-total resection in the management of intraspinal ependymoma, especially when such a resection can be accomplished without major morbidity. This review provides level IV of medical evidence supporting the role of post-operative radiation therapy as an option to potentially reduce the recurrence/progression of the tumor in patients with intraspinal ependymoma submitted to incomplete resection. This review also provides level IV of medical evidence supporting the role of routine post-operative radiotherapy as an option to potentially reduce the recurrence/progression of the tumor in patients operated for myxopapillary ependymoma, even in patients who underwent gross-total resection. There were some limitations to this work. As a retrospective study, there was selection bias, limited comparable results and there is lack of a standardized way to describe the main results for most of the papers. Experience with patients having intraspinal ependymoma may be limited, even in larger medical centers. Yet, practicing neurosurgeons will encounter patients with those neoplasms and therefore need to be aware of their clinical presentation, diagnostic evaluation, and especially the best management options. Intraspinal ependymoma is not as benign as proposed by its histology, but has a high potential of recurrence and/or progression, about 16% in general, but can be as high as 24% for myxopapillary and as low as 4% for intramedullary ependymoma. Therefore, there is still controversy regarding the best management of those patients. In this broad and recent systematic review, could be noticed that for intraspinal ependymoma, in general, the highest recurrence rate occurred at the groups of patients submitted to incomplete resection, with or without radiotherapy and the lowest in those who underwent gross-total resection, with or without radiation therapy. The routine post-operative radiotherapy should be considered in patients operated for myxopapillary ependymoma, even in patients who underwent gross-total resection.
Biography

Nicandro Figueiredo is a Spinal Neurosurgeon from Brazil. He is currently working at Medcare Orthopedic and Spine Hospital, Dubai. He completed his Bachelor’s from University of Brasilia (UnB) and his Residency in Neurosurgery in Base Hospital of Brasilia. He also completed his Masters and PhD from the University of Brasilia, Brazil. He was selected for International Fellowship-training in Spinal Surgery in USA, at the Johns Hopkins Hospital, Baltimore and University of Wisconsin, Madison and Post-doctoral Research Fellow in Spinal Surgery in USA at the University of Wisconsin. He is also a Visiting Professor of Neurosurgery and Spinal Surgery in Brazil. He worked as a Consultant Spinal Neurosurgeon for 2 years in Riyadh, KSA, at Dr Sulaiman Al Habib Hospital. He is Board Certified as a Neurosurgeon in Brazil, as a Consultant Neuro-Spinal Surgeon and as a Specialist Spinal Neurosurgeon, Dubai. He is also a member of North American Spine Society, AO SPINE Society (AO-Middle-East), Congress of Neurological Surgeons (CNS-USA), Brazilian Spine Society (BSS), Brazilian Neurosurgical Society (SBN), Brazilian Academy of Neurosurgery (ABNc), Neurosurgical Society of Mato Grosso (vice-president-Brazil), Saudi Association of Neurological Surgery and Pan-Arab Spine Society (PASS). He is also an Academic Editor (Spinal Surgery Section) of the Journal Medicine and has also published many articles.

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