

PP50

Precision of brainstem biopsies assisted with Varioguide® in children, a single institution report

Santiago Candela Cantó¹, Mariana Alamar Abril¹, Patricia Puerta Roldán¹, Jordi Muchart López², Mariona Suñol Capella³, Angel Montero Carcaboso⁴, Antonio Guillén Quesada¹, Ioannis Roussos Prindesis¹, Andrés Morales La Madrid⁴, Jaume Mora Graupera⁴, Ofelia Cruz Martínez⁴, Gemma García-Fructuoso¹

¹ Neurosurgery Department, Hospital Sant Joan de Déu Barcelona, Universitat de Barcelona, Spain

² Diagnostic Imaging Department, Hospital Sant Joan de Déu Barcelona, Universitat de Barcelona, Spain

³ Pathology Department, Hospital Sant Joan de Déu Barcelona, Universitat de Barcelona, Spain

⁴ Oncology Department, Hospital Sant Joan de Déu Barcelona, Universitat de Barcelona, Spain

Introduction: We have recently started to perform biopsies in children with newly diagnosed brainstem tumors in children. We report the precision and safety of this procedure in our patients.

Methods: We have reviewed all the cases in which we have performed a brainstem biopsy assisted with frameless neuronavigation and Varioguide®. We have measured precision as the deviation between the planned target and the postoperative notch through fusion of preoperative plan and postoperative MRI. We report the results of the histologic review and complications developed after the procedure.

Results: We have performed 4 brainstem biopsies since May 2012 in children 3 to 9 years old. The location of the lesions was: one mesencephalic and three pontine (DIPG). The average deviation of the planned target was 5,1mm (3,2-6,3mm). Histological diagnosis was achieved in all four cases (WHO grade III astrocytoma in all pontine lesions and WHO grade I in the mesencephalic one). None of the patients developed any major complication, but a transient worsening of a preoperative VI cranial nerve paresis.

Conclusion: In our experience, brainstem biopsy in children assisted with Varioguide® is a reliable and safe technique, since histological diagnosis and tumoral tissue was obtained in all cases without severe complications.