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# C0464 - LINAC-RADIOSURGERY FOR VESTIBULAR SCHWANNOMA (VS) REACHING BRAINSTEM

*A.V. Menéndez López*[1], *M. Bernisz*[2], *M.J. Pérez*[2], *J. Pérez*[2], *P. Miranda*[2], *A. Tormo*[2] *and C. Botella*[2]

[1]*Albalat dels Tarongers, Valencia, Spain.* [2]*La Fe Universitary & Polytechnic Hospital, Valencia, Spain.*

## Resumen

Objectives: Expose preliminary results using Linac-Radiosurgery, VMAT-based, for VS reaching BrainStem (BS).

Methods: Among 60 consecutive VS treated with SRS between 2014-2018; we've found 20 (13M/7W) reaching BS. Inclusion criteria: None presence of CSF between tumor and BS, regardless tumor volume. Exclusion criteria: Edema within BS or cerebellum, fourth ventricle compression, hydrocephalus. We evaluated dosimetry, volumetric response, clinical and imaging evolution during follow-up and complications. Patient's fixation using Brainlab head frame to minimize intrafraction movement. Volumetric modulated Arc-Therapy (VMAT) technique was done using RapidArc in a Truebeam v2.5 (Varian) with HD MLC and 6D couch. MRI-CT image co-registration was done in iPlan v4.5.4 (Brainlab). VMAT calculation was done with TPS Eclipse v13.0 (Varian). Set-up was based on CBCT.

Results: Clinical presentation with severe hearing loss in the 20 cases (7 deaf), 1 trigeminal neuralgia, 3 previous surgeries. Mean tumor volume 3.38 cc (1.04-8.92). An inner planning treatment volume (PTV), which consisted of a 30-53% of whole volume (mean 1.66 cc), was developed in 12 patients. Mean follow-up 30.6 months. VMAT was employed in 19 cases and conformal dynamic arc (CDA) technique in 1. Mean prescription dose was 11.67 Gy (11-12.5) and, 12.5 Gy (12.3-13) at inner PTV, when used. Mean CI was 1.11 (1.01-1.24). Mean Dmax to Cochlea was 6.78 Gy (tumor coverage prevail over cochlea protection). Mean Dmax to Trigeminal nerve was 9.33 Gy. V12 inside BS was 0. Mean V10 to BS was 0.14 cc. 13 patients had volumetric reduction, increase in 2, non-evaluable in 5 (4 short follow-up, 1 unrelated death). Facial nerve function preserved in every case. No radiation induced toxicity within BS or cerebellum in any patient. 1 patient developed post SRS neuralgia, completely relieved with percutaneous rhizotomy.

Conclusions: For this particular group of patients our preliminary results support the usefulness of Linac-Radiosurgery, VMAT-based, due to its effectiveness and safety.

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