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Palliative treatment of multiple level painful vertebral metastases employing O-Arm navigated radiofrequency ablation and augmentation

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Purpose: Today, radiofrequency ablation and augmentation (RFAA) procedures are increasingly employed to treat patients with painful vertebral metastases. The aim of this study was to evaluate additional benefits of treating multiple level painful vertebral metastases with O-Arm navigated (ON) RFAA.

Methods: Since November 2013, all in our department admitted patients with painful multiple level vertebral metastases that were palliative treated with O-Arm navigated (Medtronic Louisville, USA) RFAA (StabiliT® Vertebral Augmentation system; DFINE Europe GmbH, Mannheim) were included in this report. The reference instrument was fixed throughout a small incision at the top of the spinal process in the central involved vertebrae, before starting O-Arm data acquisition for navigation. Evaluated parameters included: 1) pain relief (assessed with 10-point visual analogue scale (VAS) before demission and one month later); 2) clinical follow up and procedure related morbidity; 3) O-Arm assessed vertebrae changes.

Results: A total of 24 levels, with or without fracture, were treated in 10 patients. Median age was 61 years. The median time from initial back pain to treatment was 2 months. The approach to the spine was mono-pedicular in 20 and bipedicular performed in 4 levels. There were not infections or wound disorders. The numerical pain scores were improved from a median of 7.7 preoperatively to a median of 3.6 postoperatively at 10 days, and 2.2 one month later. Postoperative neurological function (Frankel score) was the same or improved in 6 patients who underwent additional minimal invasive decompression procedures. One patient with radiological PMMA leakage into the spinal channel underwent immediately re-intervention and showed a rush neurological recovery. Pain relief significant improved after procedure but was not related with the percentage of vertebrae augmentation.

Conclusion: Treating multiple level painful vertebral metastases with ON-RFAA allows an accurate procedure with rush and long lasting pain relief. The improved accuracy of navigation guided tumour ablation minimizes surgical bleeding and radiation doses exposure of the surgical team. Pain relief seems to be direct related with the ablation.

Biography

Mario Carvi y Nievas has completed his PhD at the Johann Wolfgang Goethe-University Frankfurt am Main and presented his Doctoral thesis at the Heinrich-Heine-University in Düsseldorf, in Germany. He is the Chairman and Head Neurosurgeon of the Südostbayern Kliniken AG. He has published more than 40 papers in reputed journals and has been serving as an Editorial Board Member in 4 as well as reviewer in 15 international journals.

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