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Letter to Editor

Spinal molecular imaging by (68) Ga-DOTATATE-positron emission tomography

Sir,

We have read with interest the article of Slotty *et al.*[1] about spinal molecular imaging (MI) by (68) Ga-DOTATATE-positron emission tomography (PET) of a spinal meningioma. The authors describe herein a new diagnostic method for the spine. As recently stated by us, such reports about MI of spinal tumors are relatively rare in the literature.[2] The interesting key question remains not only whether the magnitude of biochemical alterations demonstrated by spinal MI reveals prognostic value with respect to survival, but also whether it identifies early disease and differentiates benign from malignant lesions. In the current case of Slotty *et al.*[1] MI helped a dear identification of treatment failure and significantly influenced patient management by providing more objective decision criteria for evaluation of specific therapeutic strategies.

In general, the diagnosis of spinal tumors has developed enormously in the recent few years. The principal improvement in this context is achieved by MI, that is nowadays more than only an option to detect spinal tumors.[2-4] Recent spinal MI have combined histological[5-7] assessments with a multimodal neuroimaging approach[4,8] to further uncover our preoperative understanding of the pathological basis as well as pathophysiologic architecture of the underlying spinal tumor. Spinal meningiomas, as mentioned by Slotty *et al.*,[1] are of special interest in this context, as different histological subtypes alter surgical outcome.[5] Such noninvasive preoperative information during the diagnostic work-up gives important additional information to decide better about the appropriate treatment options.[3]

Not at least, spinal MI has a very high positive predictive value (>98%).[4] In the case of operation, the improvement of microsurgery and minimally invasive surgery, also of the spine, needs nowadays detailed preoperative planning to narrow the surgical field for the desired successful less invasive neurosurgery.[9]

In the present case of Slotty *et al.*,[1] it is noteworthy that not only spinal tumor itself can be assessed by MI as discussed by the authors. Recently, it has been found that focal glucose hypermetabolism at the level of spinal cord compression predicts an improved surgical outcome suggesting a reversible functional damage of the underlying myelopathy.[10] These findings would favor a multi-tracer PET rather than a single tracer PET as suggested by the authors. However, such additional molecular information substantially helps to select those patients during the diagnostic work out who will profit from a neurosurgical operation. Somatostatin receptor ligands, as described by Slotty *et al.*,[1] are one possibility among others[4,11] to achieve this goal. However, the detailed indication of each tracer has still to be found for spinal MI[4] instead of cerebral MI, where this is already more established.[8,12]

Supplementary imaging tools like spinal MI that was previously introduced by our group,[4] represent a promising diagnostic tool to visualize spinal tumor but also spinal cord tissue and underlining therefore a molecular based preoperative diagnostic work-up.

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