A 45-year-old man presented with increasing visual impairment. MRI showed a nonspecific lesion at the cavernous sinus; an additional $^{68}$Ga-DOTATATE PET/CT showed an extraordinarily high $^{68}$Ga-DOTATATE uptake of the lesion (figure). Stereotactic brain biopsy was performed and revealed an initial manifestation of neurosarcoidosis. $^{68}$Ga-DOTATATE targets the somatostatin receptor (SSR), which is expressed by tumor cells in malignancies such as neuroendocrine tumors and meningioma, but also by activated macrophages, as present in neurosarcoidosis. Targeted radionuclide therapies using SSR ligands labeled with beta-emitting isotopes might offer additional therapeutic options in patients with treatment-refractory neurosarcoidosis, as also effectively applied in SSR-positive malignancies.

**Author contributions**

Dr. Unterrainer: study design, data collection, drafting and revising the manuscript. Dr. Ruf: acquisition and analysis of histopathology, revision of manuscript. Dr. Ilhan: analysis of PET/CT scan, revision of manuscript. Dr. Vettermann: analysis of PET/CT scan, revision of
manuscript. Dr. Holzgreve: study design, data collection, revision of manuscript. Dr. Cyran: analysis of PET/CT and MRI scans, revision of manuscript. Dr. Tonn: data collection, revision of manuscript. Dr. Bartenstein: study supervision and analysis of PET scans, revision of manuscript. Dr. Albert: study design, data collection, drafting and revision of manuscript.

**Disclosure**
The authors report no disclosures relevant to the manuscript. Go to Neurology.org/N for full disclosures.

**References**
Teaching NeuroImages: Advanced imaging of neurosarcoidosis with Ga-DOTATATE PET/CT
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