Conclusion: We experienced excellent short term local control and low incidence of complication for acoustic schwannomas undergoing frameless SRS treatment. Our data compare favorably with the literature. Additional follow-up will be necessary to evaluate long term results of treatment.

EP-1118
Impact of susceptibility-weighted imaging MRI on radiosurgery for melanoma and RCC brain metastases
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Purpose or Objective: A patient with malignant melanoma and 4 visible lesions on a gadolinium (Gd)-enhanced T1 MRI scan of the brain was reported at the tumor board as having at least 7 probable metastases on the basis of the matching susceptibility-weighted imaging (SWI). SWI detects cerebral microbleeds and may therefore be more sensitive than Gd-T1 MRI in the detection of small haemorrhagic metastases and prediction of future sites of intra-cranial relapse. Our aim was to explore the potential usefulness of SWI in 1) the selection for radiosurgery and 2) the follow-up of patients with brain metastases from malignant melanoma and renal cell carcinoma (RCC).

Material and Methods: At the time of referral for radiosurgery, a 3-D Gd-T1 MRI was evaluated at the neuro-oncology multidisciplinary tumor board to determine the number of brain metastases. We retrospectively analysed the synchronous SWI sequence to explore any difference in the number of detectable lesions and hence putative metastases. Subsequent enhanced T1-weighted MRIs were evaluated for new metastases at the site of SWI abnormalities.

Results: T1 MRI scans detected 16 metastases in a sample of 11 patients with melanoma and RCC who were treated with primary or postoperative linear accelerator-based radiosurgery in our center. 25 regions of signal change were reviewed by a board-certified neuro-radiologist who confirmed that the 9 additional SWI lesions were non-metastatic. To date, none of the additional lesions have developed into enhancing brain metastases. Indeed, additional SWI changes on postoperative imaging resolved completely on subsequent imaging. Thus the 16 SWI changes with metastatic features correlated perfectly with the 16 metastases on Gd-T1 MRI. (Figure 1)

Conclusion: SWI sensitively detects blood products in primary and secondary brain tumours, but also in veins, vascular malformations and postoperative bleeding and calcification. An expert neuro-radiology opinion in the context of the tumour board is essential for the accurate interpretation of SWI to avoid “overdiagnosis” of metastases, particularly in the post-operative setting. Occasionally however, additional lesions that are highly suspicious for metastases may be detected on SWI. The sensitivity and specificity of SWI for metastases should be determined in a larger cohort as it may assist patient selection for radiosurgery in borderline cases.

EP-1119
Treatment of Subependymal giant cell astrocytoma (SEGA): Is there a place for radiotherapy?
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Purpose or Objective: SEGA is a WHO grade I glioma that is almost exclusively seen in young patients with tuberous sclerosis complex (TSC). Despite the benign histology, SEGA can be severely symptomatic as it typically arises intraventricularly and can cause obstructive hydrocephalus. The current standard treatment of SEGA includes surgical resection and chemotherapy, the m-TOR inhibitor everolimus. Based on expert opinion, there is an international consensus that radiotherapy should not be used in the treatment of SEGA. Here, we present a case of a patient with TSC, with inoperable bilateral ventricular SEGA. Years long before the availability of everolimus or its approval for treating SEGA, we treated this patient exclusively with radiotherapy.

Material and Methods: With stereotactic fractionated radiotherapy, a dose of 60 Gy in 30 fractions of 2 Gy, was delivered on the GTV. The patient was afterwards followed up with MR imaging. We did volumetric assessment of tumour size on each follow up MRI and tracked the changes in tumour size after radiotherapy. We performed an extensive literature study to verify the sources of the consensus against radiotherapy in treatment of SEGA.

Results: The patient tolerated the treatment very well. No acute or chronic side effects were seen. A follow up over a period of 8 years, using MR imaging, showed about 70% decrease in tumour volume. We found that the advice against radiotherapy appears to be based on very little, if any, evidence.

Conclusion: Radiotherapy can be a potential useful tool in the treatment of SEGA. The slow but progressive response of SEGA to radiotherapy resembles what is seen in other benign brain tumours e.g. meningioma. Radiotherapy has been discarded prematurely as a therapeutic option for SEGA and could be very well used to consolidate effect of everolimus. Prospective registration of patients and treatment outcome is needed to enhance knowledge.

EP-1120
Experience with robotic SBRT in treatment of intraspinal tumours
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Purpose or Objective: The role of radiotherapy in the treatment of intraspinal tumors constitutes a paradigm, justified by tolerance of spinal cord. Advances in SBRT (Stereotactic Body Radiation Therapy) as robotic and image-guided treatments have revolutionized in this group. The aim of this study is to analyze our preliminary experience treating intraspinal tumors using robotic SBRT.

Material and Methods: Clinical and dosimetric data on 19 patients between 2011 and 2015 were reviewed, patients with lesions in spinal canal including intramedullary and intradural extramedullary were selected solely. All patients were treated with robotic SBRT image-guided in real time (Cyberknife).