posterior part of the putamen in RT patients and seem to be independent of the D2-receptor status. In conclusion, the presented data corroborate the hypothesis that RT represents a phenotype of PD. Only few differences were found for the cerebral metabolic glucose consumption and the postsynaptic D2-receptor status, which could account for the missing rigidity and hypokinesia in RT patients.

P0517 Atypical Progressive Multifocal Leucoencephalopathy – A Case Report

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Background: Progressive Multifocal Leucoencephalopathy (PML) is an acquired demyelinating disorder of the CNS caused by JC virus. Typically, it presents in immunocompromised patients with characteristic foci of demyelination in the white matter of the cerebral hemispheres, sometimes also involving the brainstem, cerebellum and spinal cord. This case shows an atypical presentation of rapidly progressive cerebellar and brainstem dysfunction, with MRI findings limited to the posterior fossa, in a patient with no suggestion of immunodeficiency.
Case history: This 60-year-old lady presented with four weeks of right-sided inco-ordination and slurred speech. Examination revealed right-sided cerebellar signs and an initial MRI head showed ill-defined increased T2 signal in the white matter of the right cerebellar hemisphere. Clinical and radiological progression was inexorable over the next 10 weeks. The patient required sedation and she died from bilateral pulmonary emboli.
Neuropathological examination was typical for PML, showing multiple foci of active periaxial demyelination associated with small areas of necrosis. Towards the periphery of these lesions, the astrocytes showed bizarre, sometimes multiple nuclei associated with enlarged oligodendroglial nuclei bearing both eisonophilic and basophilic inclusions. Special stains for myelin showed widespread pallor within the affected areas namely cerebellum, pons, medulla and to a lesser extent mid-brain, thalamus, basal ganglia, cerebral peduncles, internal capsule and subcortical white matter adjacent to the callosal radiation.
Conclusions: An atypical distribution of white matter lesions within the posterior fossa on MRI and no apparent immunocompromise are compatible with the diagnosis of PML.

P0518 Brain Cortical Responses to Vibrotactile Stimulation of the Palm: A FMRI Study

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Purpose: The aim of the study was to implement a vibrotactile stimulation paradigm within the MR environment to be applicable in patients after stroke.
Materials and methods: We used a 1.5 T MR scanner. 15 EPI images were acquired parallel to the AC-PC line. A 50 Hz vibrotactile stimulus with an amplitude of 2mm was applied to the right and left hand palm. Series of 10 images during vibrotactile stimulation (condition A) and 10 images without stimulation (condition B) were alternatively acquired up to a total of 60 images (time series: ABABAB). The vibrator consists of an electromotor, which rotates two excenters pumping simultaneously via two circular rubber membranes air into a pneumatic tube, which is fixed onto the palm of the right and left hand above the basic joints of the fingers I-V. A single examination consisted of two fMRI measurements, when the right and the left hand palm were vibrated. The whole study was performed in six healthy volunteers. For data analysis we used SPM 99.
Results: Vibrotactile stimulation of the hand palm revealed contralateral activation of the primary sensorimotor, secondary somatosensory and the premotor cortex. The supplementary motor area was activated bilaterally. An ipsilateral activation foci was seen within the gyrus frontalis superior, within the premotor cortex and within the primary and secondary somatosensory cortex, where the strongest activation was found followed by brain activation within the primary sensorimotor cortex. The premotor cortex and the supplementary motor cortex showed only weak activation.
Conclusions: Sensory afferent stimulation by a vibrotactile stimulus to the right and left hand palm can lead to a brain activation response within the sensorimotor cortex like in active motor paradigms as finger-to-thumb tapping. Obviously, our vibrotactile stimulus elicited the vibratory tonic reflex, which involves the cortical motoneurons. Further, it is known, that there is direct afferent input to the sensorimotor cortex from the periphery. This holds promise for the vibrotactile stimulation as an alternative paradigma to active motor paradigms in stroke patients to study motor cortex functions and to monitor poststroke rehabilitation

P0519 Syringomyelia After Radiotherapy for a Hodgkin Lymphoma

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Background: Radiation necrosis is a well-known complication of radiotherapy of the central nervous system, particularly in the brain but also in the spinal cord.
Methods: we report a case of radiation necrosis and syrinx formation in a 36-year woman seven years after the completion of this treatment with thoracic radiotherapy (Mantle, total dose of 35 Gy) for an advanced Hodgkin linfoma. She progressively developed sensory loss involving pain and temperature sensibility with preservation of posterior column sensory modalities: light touch, vibratory sense and position sense (dissociated sensory loss).
Results: Magnetic resonance imaging (MRI) of the cervical and thoracic spine demonstrated a high-intensity lesion on T2-weighted images, enhancing with gadolinium and with appearance of small syrinx from T3-T5 and T8-T10. There was no hydrocephalus, Arnold-Chiari malformation or intramedullary spinal cord associated.
Conclusions: the mechanism for the production of noncomunicating syrinx in radiation necrosis may be secondary to cystic intramedullary necrosis or to fibrotic changes around and in the central canal, resulting in trapping of a portion of the CSF-containing space and enlargement. Radiation necrosis in the spinal cord seems to be related with treatment time, fractionated dose and lengh of irradiated cord as well as other individual factors

P0520 Brain Activation Changes Within the Sensorimotor Cortex After Short Term Simulated Microgravity

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Purpose: The aim of this study was to deprivate the brain from proprioceptive input and thus to evaluate the effects of short term

simulated microgravity on brain cortical activation patterns of the sensorimotor cortex.
Materials and methods: We used a 1.5 T MR scanner and acquired 15 EPI images parallel to the AC-PC line. The on/off motor paradigm was a monitored fist clenching with the left hand pressing a grip with a pneumatic tube connected to a blood pressure monitoring device. Before starting the experiment, the subjects trained themselves by visual feedback to perform the fist clenching with a constant clenching rate of 2 Hz and a constant clenching pressure of 60 mmHg. Series of 10 images at rest (condition A) and 10 images performing fist clenching (condition B) were alternatively acquired up to a total amount of 60 images (time series: ABABAB). The experimental setup consisted of a baseline fMRI examination before 48 hours of sensory deprivation, a fMRI examination immediately after the sensory deprivation and a third fMRI examination one week after the second one. The experiments were performed with four healthy male volunteers. For data analysis we used SPM99.
Results: The baseline fMRI examinations revealed bilateral activation within the primary sensorimotor cortex SM1. Further, the baseline fMRI examination reveals brain activation bilaterally within the supplementary motor area SMA and the premotor area PM. After 48 hours of sensory deprivation in microgravity there is new activation within the ipsilateral Globus Pallidus GP and SMA showed increased activation. Further, there was an increase of activation within the ipsilateral premotor cortex PM. Increase of activation was also seen within the primary sensorimotor cortex on the ipsilateral hemisphere. The same was true for the secondary somatosensory cortex, where the contralateral increase of activation was less pronounced. Performing another fMRI experiment one week after microgravity, these brain cortical activation changes disappeared, and the same activation pattern as before microgravity was observed.
Conclusions: Dry Water Immersion modifies the organization of afferent sensory information which is involved in motor regulation. Following this sensory deprivation, we found a significant increase in activity in higher motor control areas compared to the pretest baseline.

P0521 The Relationship of Hippocampal Volumetry and T2 Relaxometry to Histopathological Reports of MTS in Patients with Intractable Temporal Lobe Epilepsy

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Background: Prolonged T2 relaxation time and reduced hippocampal volume are believed to be the Magnetic Resonance Imaging (MRI) signs of mesial temporal sclerosis (MTS). Here we report the MRI findings on 37 patients with histopathologically confirmed MTS.
Objective: To examine the relationship between contralateral and ipsilateral T2 relaxation time and hippocampal volume measurements and the presence of MTS.
Methods: All patients were scanned using a 1.5T scanner. Normal values were established using 73 control subjects. Quality control procedures showed stability of volume and T2 measurements and high intra- and inter-observer reproducibility.
Results: Seven of 37 MTS patients (19%) had reduced hippocampal volume but normal T2 relaxation time on the resected side. In 1 patient, both hippocampal volume and T2 relaxation time were normal on the side of resection. Five patients had reduced ipsilateral hippocampal volume and bilateral increased T2 relaxation time. Three patients with reduced ipsilateral hippocampal volume had increased T2 values only on the side opposite to their resection.
Conclusions: Patients with histological MTS and ipsilateral decrease in hippocampal volume, do not always have an increase in T2 relaxation time. The observed bilateral T2 increases and unilateral increases in T2 contralateral to surgical resection could be due to bilateral sclerosis and non-specific increases in water content, myelin abnormalities or unidentified dual pathology, respectively.

P0522 Hemifacial Spasm: Contribution of Image to the Diagnosis

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Introduction: Hemifacial spasm (HS) is a condition characterized by involuntary, paroxysmal, painless contractions of the muscles enervated by the VII cranial nerve. Compression of this nerve near its root exit zone (REZ) on the caudal brain stem by loops of otherwise normal appearing vessels is the most frequent cause.
Aim: To evaluate the contribution of CT and MRI to the diagnosis of HS aetiology.
Material and methods: The images (60 CT and 43 MRI) of 77 patients with HS were reassessed for the presence of intracranial abnormalities, visualization of the VII cranial nerve and vessels indenting its REZ, by one senior neuroradiologist blinded to the symptomatic side.
Results: All CT/MRI images were of diagnostic quality. There was no evidence of vessels crossing the ipsilateral REZ or other lesions in 35 cases (20/35 only had CT). Neurovascular contact was observed in 39 cases: the vertebrobasilar system showed tortuous elongation (22 patients), branches of tortuous PICA (5), AICA (6) and AICA/ PICA (3) pushed up against the REZ, and non-identified multiple vessels were seen near the REZ (4). In the other cases, 1 posterior cranial fossa mass, 2 Chiari malformation and 1 temporal arteriovenous malformation were identified. Twenty three of 77 cases had both CT and MRI, and all CT findings were also showed by MRI. In 15/23 cases MRI had a positive contribution to the diagnose showing the neurovascular contact.
Conclusions: Our data suggests that MRI provides vascular and brain tissue diagnosis in a single non-invasive examination and should be recommended as primary neuroradiological procedure in HS.

P0523 MRI and MRA Findings in Patients with Vertigo, Dizziness or Dysequilibrium

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Background: Asymmetry of vertebral artery(VA) had been considered not abnormal finding. Recent reports suggest that unilateral hypoperfusion of VA or elongation of basilar artery(BA) is the cause of vertigo and dizziness.
Objective: We investigated the findings of MRA of vertebrobasilar system and MRI in patients with vertigo and dizziness.
Methods: MRA of the vertebrobasilar system and brain MRA were examined in 91 patients with main complaints of vertigo, dizziness or dysequilibrium. The MRA was performed with a 1.5-tesla system using the three dimensional time-of-flight technique. Elongation, local narrowing and hypoperfusion of the BA and asymmetry of the diameter, hypoperfusion and non-filling of the VA and abnormal signal intensity on the MRI were evaluated. Other assessments included neurological and neurootological findings and risk factors of the cerebrovascular accident(CVA).

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