We examined seizure outcome (*free from seizures however minor vs. continuing seizures however infrequent*) 5 years post-TLES for mesial temporal sclerosis in 82 consecutive patients, aged 8–43 years, who underwent pharmacologically activated sphenoidal EEG pre-operatively (12 with extracranial ictal monitoring (VT), 70 without). Fifty-six had suffered an early-childhood complicated convulsion (ECC+); 56 had strictly unilateral sphenoidal spikes (SphU).

The 70 non-monitored patients were divided according to the presence/absence of ECC+ and of SphU. Those seizure free were: 78%, ECC+, SphU ($N = 37$) + 14% Engel other 1 + 11; 60%, ECC+, *not* SphU ($N = 10$) + 30% Engel other 1 + 11; 47%, *not* ECC+, SphU ($N = 15$); 25%, *not* ECC+, *not* SphU ($N = 8$). VT patients had no better outcome in any group.

Therefore, excellent outcome is achieved for most with both ECC+ and SphU making routine VT unnecessary. Videotelemetry may be indicated (often intracranially) for all without ECC+, and for some (usually only extracranially) with ECC+ but not SphU.

Recording of EEG during functional MRI experiments: Artefacts

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Functional magnetic resonance imaging (fMRI) detects regional blood-flow changes with excellent spatial accuracy but poor temporal resolution. This limit may be overcome with the contemporary use of electroencaephalogram (EEG) recording, which detects brain electrical activity with excellent temporal resolution.

Co-recording of fMRI/EEG may thus represent an invaluable tool for functional neuro-imaging, although several technical issues need to be solved before its promising potential can be realized.

In the past we have addressed the issue of patient safety, with the development of a safety protocol currently used in our clinical studies.

Other problems include artefacts detectable in the EEG obtained during fMRI. Some of these are similar to those routinely encountered, although transformed by interaction with the magnetic field.

Other artefacts, emerging with the combination of the two diagnostic tools, include brief disappearance of the trace during the image acquisition.

The main problem in our experience from recording in eight subjects to date has been the common occurrence of large voltage artefacts time locked to heartbeat. Current studies are investigating the underlying mechanism of this but for practical purposes (e.g. identifying alpha rhythm) we have found it possible to obtain satisfactory traces by paying careful attention to head position and the arrangement of electrodes and leads.

Clinical utility of video-EEG telemetry: optimum use of resources

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In January 1995 the National Hospital for Neurology and Neurosurgery opened a six-bedded, 5-day unit dedicated to video-EEG telemetry. Patients assessed on this unit fall broadly into three categories, patients with sleep disorders, those admitted for a diagnostic assessment of attacks of unknown cause and patients with intractable epilepsy being evaluated for surgery. Our facilities allow continuous recording of up to 64 channels of EEG/cardio-respiratory parameters and video.

From January 1995 until June 1997 there have been 1245 patient episodes, 10.5% (131) sleep disorders, 56.2% (699) diagnostic assessments and 33.33% (415) pre-surgical assessments. To facilitate seizure recording, AED reduction is carried out following a standardized protocol and is applied to all pre-surgical patients without a history of status or frequent generalized seizures. During this period 78 (6%) of all patients had generalized seizures (57/309 of patients who were drug reduced).

The mean study duration is 51 hours. Of patient episodes 68% were judged as having a successful outcome providing new clinical information of direct relevance to patient management.

Use of a drug-reduction protocol and having specialized nursing and technical staff has improved the capture rate of adequately recorded seizures and enabled this high degree of a positive outcome for video-EEG telemetry.