# Epilepsy

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# Figure 48.29 (a–c) Characteristic appearance of scaphocephaly due to sagittal suture synostosis. Figure 48.30 Axial computed tomography scan showing severe trigo

nocephaly due to premature fusion of the metopic suture.

MRI is a mainstay , demonstrating, for example, reduced hippocampal volume and distorted architecture in mesial temporal sclerosis. Nuclear medicine modalities, including single-photon emission CT (SPECT) and positron emission tomography (PET), are sometimes used to demonstrate ictal and interictal metabolic abnormalities. Electroencephalography (EEG) entails recording from an array of scalp electrodes and comparison between ictal and interictal recordings. This is especially helpful in lateralising the focus of complex partial seizures in temporal lobe epilepsy and is combined with video monitoring of the seizur videotelemetry suite. A more detailed localisation may be achieved invasively by the preoperative placement of subdural or depth electrodes,

preoperatively or by intraoperative electrocorticography (ECoG). Neuropsychological evaluation is used to evaluate the patient’s preoperative function, looking for concordant focal impairments and, using the Wada test ( Table 48.9 ), assessing the risk of postoperative language and memory deficits in tem poral lobe epilepsy surgery . /uni25CF /uni25CF Surgical management The seizure focus may be resected, generally where it is in non-eloquent brain, or otherwise a disconnection can be performed. Awake craniotomy , allowing mapping particularly of speech centres, is increasingly employed. Mesial temporal epilepsy is commonly medically refractory and can be addressed surgically by amygdalohippocampec tomy or resection of the temporal lobe including the mesial structures. With careful patient selection, cure rates of up to 70% or g reater can be achieved. Functional, or rarely anatomical, hemispherectom ( Figure 48.31 ) may be performed for specific epilepsy syndromes associated with hemiplegia, such as infantile hemiplegia syndrome. This is usually considered in the early years of life when plasticity and potential for functional recovery is greatest. Disconnection procedures include corpus callosotomy , which is used for patients su ff ering drop attacks, and subpial transections to isolate a seizure focus in eloquent brain from the surrounding cortex. Vagal nerve stim ulators can be implanted in severe drug-refractory epilepsy , with electrodes applied to the vagus nerve in the carotid sheath in the neck. This option can achieve Juhn Atsushi Wada , b. 1924, Japanese–Canadian neurologist known for research into epilepsy and human brain asymmetry , including his description of the Wada test for cerebral hemispheric dominance of language function. James Parkinson , 1755–1824, general practitioner of Shoreditch, London, UK, published e in a - significant reductions in seizure frequency , especially in children, although the mechanism is not clear.

# TABLE 48.9 Wada test. Sodium amytal is injected into each internal carotid artery in turn, with simultaneous speech and memory testing to localise function The aim is to con /f_i rm language laterality, and hence that resection on the side of the lesion will not

# signi /f_i cantly impair verbal memory functions Figure 48.31 Coronal T2-weighted magnetic resonance image follow

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