Supplemental Table 17.1i: Lateralizing and Localizing Value of Seizure Semiology

Aura, Ictal/Postictal	Description	Localization or Lateralization
Sensory		
Visual Aura	simple: flashing, spots, lines	Contralateral hemisphere/primary visual
	complex visual aura	Temporal Lobe
Sensory	warmth, tingling	Contralateral hemisphere/somatosensory
Olfactory sensation	burning, bad smell	Amygdala
Gustatory	bitter or bad taste	Insula
Headache		Ipsilateral
Auditory aura	ringing, buzzing	Superior temporal gyrus
Autonomic		
Abdominal	sensation of rising	Insula, common in TLE
Autonomic signs	goose bumps, racing heart	Insula, basal frontal, anterior cingulated
Piloerection	goose bumps	Left Temporal
Unilateral Piloerection		Ipsilateral
Ictal spitting or emeticus		Right Temporal lobe
Ictal/post ictal coughing		Temporal, Right temporal
Lip Smacking		Temporal
Ictal Urinary Urgency		Nondominant hemisphere
Peri-ictal water drinking		Nondominant hemisphere
Psychic		
Déjà vu, jaimais vu		Basal temporal lobe
Fear	typically pre-ictal	Amygdala

Formed Hallucinations		Temporal lobe
Post ictal flat affect		Right Hemisphere
Motor		
Unilateral Automatisms	hand movements, picking	Ipsilateral
Clonic Movements	rhythmic twitching or jerking	Contralateral
Tonic Posturing	flexion, extension, abduction	Contralateral
Dystonic Posturing	slow, sustained, twisting	Contralateral
Figure 4 sign	1 limb extended, 1 flexed	Extended limb is contralateral
Bipedal automatisms	bicycling movements	Frontal
Versive Head Turn	forced head turn up and away	Contralateral
Nonversive Head Turn	not forceful, early in seizure	Ipsilateral
Unilateral Grimacing		Contralateral
Eye Deviation	eyes turn up and away	Contralateral
Unilateral Eye Blinking		Ipsilateral
Nystagmus		Contralateral
Lip smacking		Temporal lobe
Post ictal nose wipe	hand used to wipe nose	Ipsilateral
Post ictal paresis	Todd's paralysis	Contralateral
Unilateral akinesis		Contralateral
Language		
Ictal/Postictal Aphasia		Dominant hemisphere seizure
Ictal/postictal speech preservation		Nondominant hemisphere seizure
Other		

Gelastic Seizures	laughing	Hyothalamic hamartoma

(Bonelli et al., 2007; Jan, 2007; Jordan, 2007; Leutmezer et al., 1998; Loddenkemper & Kotagal, 2005; So, 2006)