Table 1.2: Hindi minimental state examination (Contd.)

Maximum score	*Score*	*Orientation*
		Read and obey the following: Examiner says "Look at me and do exactly what I do" and then closes his eyes for 3 seconds (follow example) while the co-examiner observes and record the patient's responses. (1 point) Ask the patient: "Tell me something about your house". Award 1 point to any complete sentence offered in response. Copy a design: A diamond within a square (1 point)
		Total Score

Detailed Higher Mental Function Examination[8]

It is done when MMSE comes out to be abnormal.

- Level of consciousness: See and classify whether patient is in *normal, clouded, delirium, obtunded, stupor, or coma.*
- Appearance and general behaviour: Observe the patient's physical appearance (apparent vs. stated age), grooming (immaculate/unkempt), dress (subdued/riotous), posture (erect/kyphotic), and eye contact (direct/furtive).
- Speech and motor activity: Listen to the spontaneous speech of the patient. Overall, motor activity of the patient should also be noted.
- Affect and mood: Affect is the immediate emotional expression, and mood is the more sustained emotional makeup. Both of them can be classified as dysphoric (depression, anxiety, guilt), euthymic (normal), or euphoric (implying a pathologically elevated sense of well-being).
- Thought and perception: Ask: "Have you ever seen or heard things that other people could not see or hear? Have you ever seen or heard things that later turned out not to be there?" Patient may be having *delusional thinking* (a fixed, false belief), *hallucinations* (false sensory perceptions without real stimuli), or *illusions* (misperceptions of real stimuli).
- Attitude and insight: See for patient's attitude toward the examiner, other individuals, or his illness. He may have a sense of hostility, anger, helplessness, pessimism, overdra-

last for hours or days. Hypersensitivity phenomenon like photophobia, osmophobia, or phonophobia may occur. Precipitating factors may be hunger, lack of sleep, etc. Variants of typical migraine are basilar migraine (associated with brainstem features),[26] ophthalmoplegic or retinal migraine (associated with weakness of extraocular muscles), migraine following head injury, migraine in children, familial hemiplegic migraine, TIAs and stroke with migraine.

2. **Cluster headache:** The typical patient is a young male (M:F ratio 5:1) with severe peri-orbital localization. It is accompanied with vasomotor phenomenon like rhinorrhea, lacrimation, flush and edema of the cheek; generally occurs after 1–2 hours of sleep every night, and this cycle repeats for weeks, only to recur after a year or so.
3. **Tension headache:** It is the most common type of headache. Location is generally bilateral occipitonuchal, dull aching or tightness in character. It is present for prolonged period and gets relieved with sleep. Typical patient is a middle-aged women having anxiety or depression.

SECONDARY HEADACHES

1. **Headache of raised ICP:** Headache in association with visual blurring, papilledema and vomiting is due to raised ICP. It generally occurs in bifrontal region. There is no association with the severity of symptoms and degree of raised ICP.[27] Early symptoms may be irritability, altered behavior, refusal to feed (in children). Headache is often nocturnal or early morning due to two reasons—firstly because of decreased venous return while lying, and vasodilation because of CO_2 retention and increased parasympathetic activity in the night. Pressure over the autonomic structures of brainstem produces the classical features of nausea, vomiting (projectile, i.e. without nausea), hypertension, altered respiration. Presence of hypertension, bradycardia, and slowing of respiration is known as Cushing's reflex. Vomiting relieves the headache due to bringing the patient upright and washing-out of CO_2. ICP can be monitored to diagnose it.
2. **Headaches of brain tumour:** Headache is present in only about 50% of brain tumours.[28,29] Headache occurs due to

Table 2.1: Semiology and types of seizures, clinical manifestation, localizing and lateralizing value (Contd.)

Type	*Clinical manifestation*	*Localization*	*Lateralization*
End of seizure paradoxical clonus	Seizure activity persists longer on the side of epileptogenic focus because the ipsilateral cortex exhausts early	Frontal, temporal	High predictive value
Tonic clonic	Tonic clonic movements	Generalized	Poor
Versive	Turning of face and eyes in one direction	Contralateral frontal lobe, less likely temporal lobe	High
Hypermotor	Pedalling, running, pelvic thrusting	Orbital or mesial frontal regions. Less likely for insular and temporal regions	Less
Automatic	Distal segments of hands, feets, mouth, tongue	Temporal, frontal	Unilateral involvement points to non-dominant mesial temporal lobe epilepsies[3]
Dialeptic seizures	Amnesia of the event of seizure	Poor	Poor
Gelastic seizures	Excessive laughing	Hypothalamic hamartoma	Poor
Atonic	Loss of tone	Generalized (Lennaux Gestaut syndrome), frontal and temporal[4]	Poor
Astatic seizure	Epileptic falls (Myoclonic	Unknown	Unknown

Contd.

in articulation), aphasia/dysphasia (defect in language; dominant hemisphere disorders), aphonia/dysphonia (laryngeal disorders).

History

- **Onset, duration and progression:** Congenital onset causes are like stammering, lisping, lalling (baby speech), etc.
- **Native language, handedness, literacy:** Native language should be enquired from the patient. It has been observed and derivated from Ribot law of retained distant memory that, after aphasia, individuals with proficiency in more than one language improved earlier in their native language. Pitres law states that the language used more often is recovered first. To determine side of cereberal dominance one can enquire of handedness for writing, sewing, etc.
- **Focal neurological deficits:** Enquire about cortical symptoms and signs like hemiparesis, hemianopia, field defects. A right faciobrachial weakness coordinates with Broca's aphasia. Similarly, right hemianopia or quadrantanopia coordinates with Wernicke's aphasia.
- **Oral problems:** It should be asked, as any oral problem can affect speech.
- **Trauma and surgery:** History of these should be enquired.
- **Past history:** Medical disorders like hypertension, diabetes should be enquired, particularly in sudden onset ones.

Examination

- **Higher mental functions:** Examine MMSE, and detailed HMF if there is doubt of cortical involvement.
- **Mutism:** If a normal patient is mute, it is suggestive of psychogenic origin. In lesions of cerebrum, cerebellum, and brainstem, mutism can also occur.
- **Articulation:** It can be checked by listening to the patient or making him reading a book loud. Distinguish the types of dysarthria. First make him speak labials (papa, mama) for finding out facial weakness (peripheral facial palsy, myopathies of facial muscles). Then make him speak linguals (tata, dada) for anterior tongue (hypoglossal) weakness, and then make him speak velars (kaka) for palatal or posterior tongue weakness. If the speech is hypernasal,