

Akinetic mutism

Sana Rajani

Clinical presentation

Akinesia = loss of voluntary motor movements

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Mutism = loss of speech

Clinical presentation

- Nearly complete loss of body movements
- Not a paresis or paralysis
- Lack of motivation, spontaneity and initiative
- Preserved eye movements - alert patient
- Display no emotions, unresponsive to commands
- Inconsistent response to a painful stimulus
- Verbal inertia and hypophonia

Etiopathogenesis

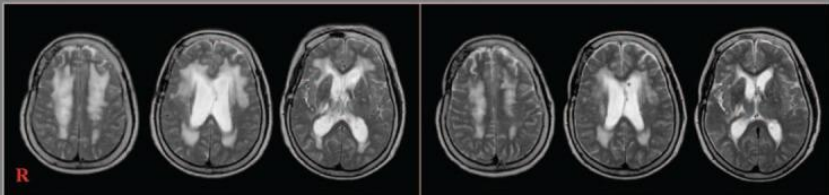
- Infarction of b/l ACA
- Hydrocephalus
- Traumatic brain injury
- Tumor - astrocytoma invading b/l basal ganglia
- SAH
- Anoxia
- Carbon monoxide intoxication - b/l frontal lobe damage
- Creutzfeldt Jacob disease
- Meningitis, encephalitis

Case report

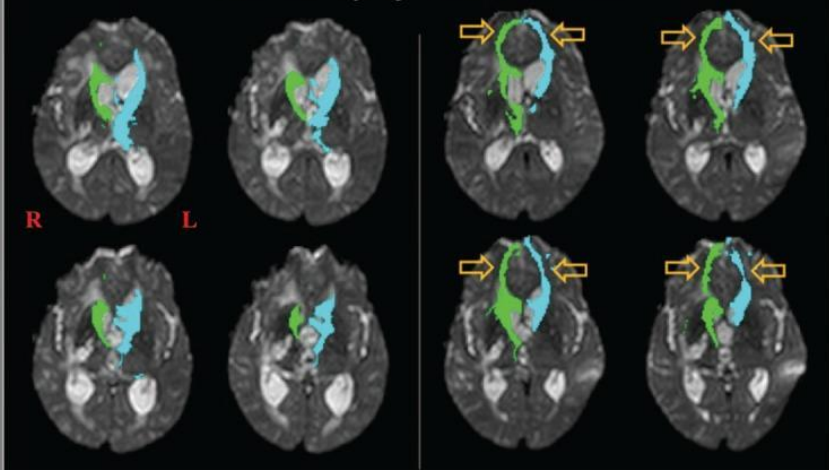
- 76 year old lady
- Aneurysmal SAH of rt post comm artery
- Underwent clipping
- 6 months later presented to the ER
- Did not move or speak spontaneously
- MRI showed leukomalactic lesions in both fronto-parieto-occipital areas, right thalamus, and hydrocephalus
- DTT - 6 months and 9 months after onset

6 - Month

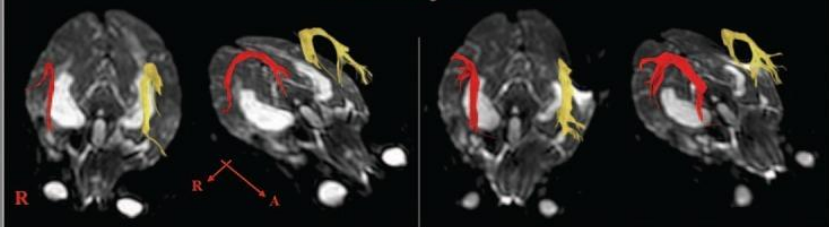
9 - Month



Connectivity of caudate nucleus



Arcuate fasciculus



- B/I low neural connectivity between CN and medial PFC at 6 months
- Recovered neural connectivity at 9 months
- Arcuate fasciculus is intact

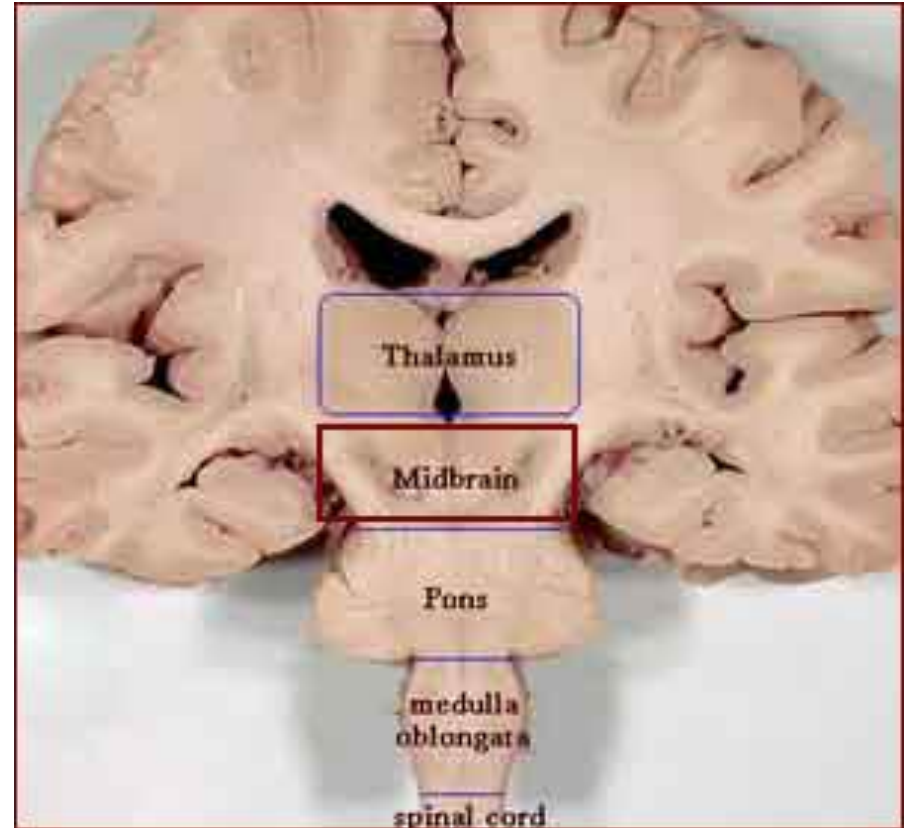
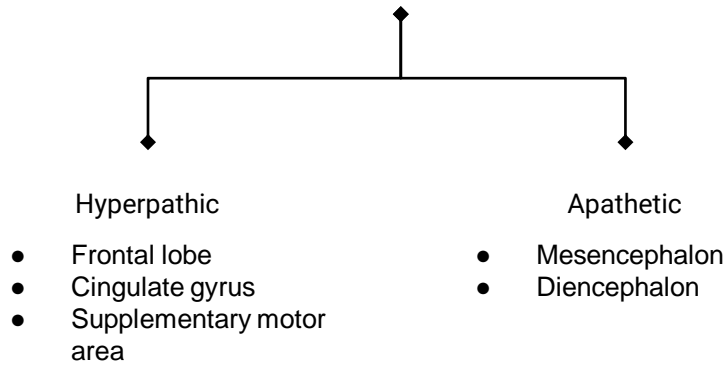
Jang SH, Chang CH, Jung YJ, Lee HD. Recovery of akinetic mutism and injured prefronto-caudate tract following shunt operation for hydrocephalus and rehabilitation: A case report. *Medicine (Baltimore)*. 2017;96(50):e9117.

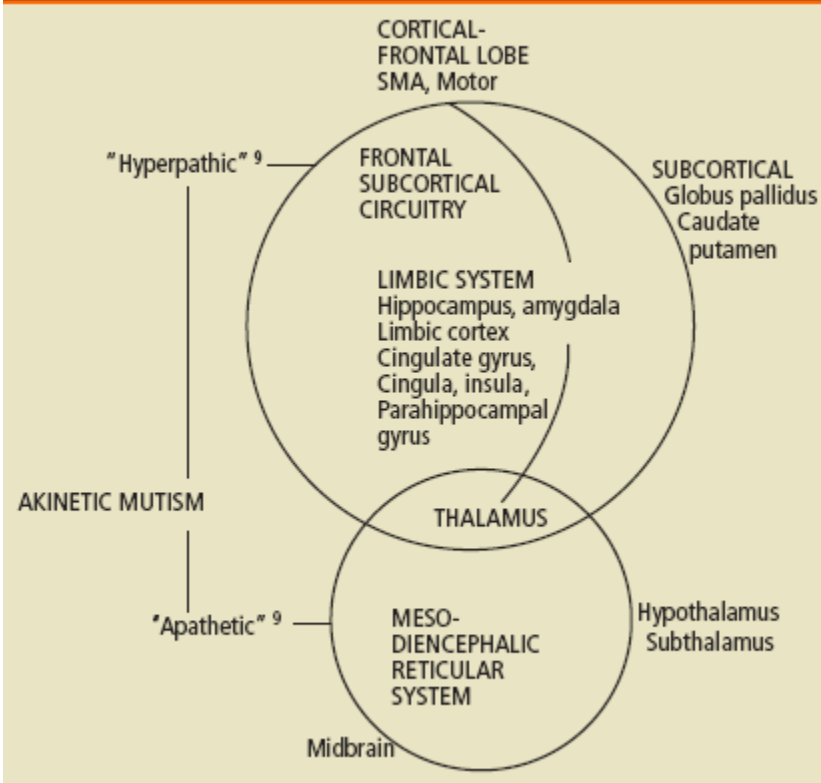
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- OT, PT, pramipexole, amantadine, ropinirole, levodopa - 2 months
- VP shunt for hydrocephalus + rehab - 1 month
- AM began to resolve

Recovery of the injured PCTs in both hemispheres contributed to clinical recovery of AM. The reporter believes that the relief of hydrocephalus by shunt operation was the primary reason for the recovery of the injured PCTs, and rehabilitation contributed additionally to recovery from AM in this patient.

Akinetic mutism





- Abulia is a part of spectrum of motivational impairment with akinetic mutism as the most extreme state
- Minimally conscious state (MCS) - subject obeys simple commands inconsistently
(telephone effect and paradoxical performance)
- Locked-in syndrome - ventral pontine lesion - quadriplegic, mute, conscious and aware, communicate by means of vertical gaze. EEG activity is generally normal

Table 1 | Characteristic clinical features of disorders of consciousness

Disorder	Arousal and attention	Cognition	Receptive language	Expressive language	Visuoperception	Motor function
Coma	No sleep–wake cycles*	None	None	None	None	Primitive reflexes only
Vegetative state	Intermittent periods of wakefulness*	None	None	None	Inconsistent visual startle	Involuntary movement only
Minimally conscious state	Intermittent periods of wakefulness	Inconsistent but clear-cut behavioural signs of self-awareness or environmental awareness	Inconsistent one-step command-following*	Aspontaneous and limited to single words or short phrases*	Visual pursuit* Object recognition*	Localization to noxious stimuli* Object manipulation* Automatic movement sequences*
Post-traumatic confusional state	Extended periods of wakefulness	Confused and disoriented*	Consistent one-step command-following	Sentence-level speech, often confused, perseverative Reliable yes–no responses*	Object recognition	Functional use of common objects*
Locked-in syndrome [‡]	Normal sleep–wake cycles	Normal to near-normal	Normal	Aphonic	Normal	Tetraplegia

*Key distinguishing features. †Locked-in syndrome is not a disorder of consciousness, but is included here for purposes of comparison with syndromes associated with significant disturbance in consciousness.

Treatment

Dopamine receptor agonist -

It has been postulated that the underlying mechanism of akinetic mutism is injury to dopaminergic pathways

Thank you.