



BALLISM, DYSTONIA, TREMOR- MIXED MOVEMENT DISORDER IN THALAMIC STROKE

Neurology

Dr. Moses P. Moorthy	Coimbatore Medical College, The Tamil Nadu Dr. M.g.r. Medical University, Chennai, India.
Prof. R. Lakshmi Narasimhan*	Coimbatore Medical College, The Tamil Nadu Dr. M.g.r. Medical University, Chennai, India.*Corresponding Author
Prof. A.v. Srinivasan	Coimbatore Medical College, The Tamil Nadu Dr. M.g.r. Medical University, Chennai, India.

KEYWORDS

24 years male presented with involuntary movements of right upper limb for the past 2 years. Patient was apparently normal 2 years back; developed sudden onset of involuntary movements of right upper limb associated with weakness of right upper and lower limb and right side hemi sensory loss. On examination, patient was conscious afebrile, involuntary movements in the form of ballism of right upper limb, dystonia of right side of neck and right upper limb, tremor of right hand with weakness of right upper and lower limb with power of 4/5, with decreased all modalities of sensation of the right half of the body; no cerebellar signs. Routine lab investigations were normal. On neuroimaging MRI showed chronic infarct in the left thalamus. Patient was diagnosed to be having BALLISM, DYSTONIA, and TREMOR-MIXED MOVEMENT DISORDER due to thalamic stroke.

PATIENT IMAGE



DISCUSSION:

Movement is the state of changing something's position. Movement disorders are clinical syndromes with either excess of movement or a paucity of voluntary movements, unrelated to weakness or spasticity. Movement disorders are synonymous with basal ganglia or extra pyramidal diseases. Movement disorders are conventionally divided into two major categories – hyperkinetic and hypo kinetic.

Dystonia is a neurological movement disorder syndrome in which sustained or repetitive muscle contractions result in twisting and repetitive movements or abnormal fixed posture.

Hemiballismus or hemiballism in its unilateral form is a very rare movement disorder. It is a type of chorea caused in most cases by a decrease in activity of sub thalamic nucleus of the basal ganglia, resulting in appearance of flailing, ballistic, undesired movements of the limbs.

A tremor is an involuntary, somewhat rhythmic, muscle contraction and relaxation involving oscillations or twitching movements of one or more body parts.

The thalamus is a large mass of gray matter in the dorsal part of diencephalon of the brain with several functions such as relaying of sensory signals, including motor signals to the cerebral cortex and the regulation of consciousness, sleep, and alertness.

The basal ganglia are a group of sub cortical nuclei, of varied origin. The basal ganglia are strongly interconnected with the cerebral cortex, thalamus, and brainstem, as well as several other brain areas. The basal ganglia are associated with a variety of functions, including control of voluntary motor movements, procedural learning, habit learning, eye movements, cognition and emotion.

Motor thalamus is implicated in the control of movement because it is strategically located between motor areas of the cerebral cortex and motor-related sub cortical structures such as the cerebellum and basal ganglia.

Stroke is a medical condition in which poor blood flow to the brain results in cell death.

The most common post stroke abnormal movement disorder reported was dystonia followed by ballism/ chorea. The tremor is usually caused by strokes due to small vessel disease of the brain, in the areas supplied by the middle or posterior cerebral arteries which include the basal ganglia.

In this case thalamic infarction due to posterior cerebral artery occlusion resulted in BALLISM, DYSTONIA, and TREMOR – MIXED MOVEMENT DISORDER. Hence THALAMUS AND ITS CONNECTIONS act as a motor movement regulatory centre. (1, 2, 3, 4)

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