World Journal of Advanced Research and Reviews
eISSN: 2581-9615 CODEN (USA): WJARAI
Cross Ref DOI: 10.30574/wjarr
Journal homepage: https://wjarr.com/

(CASE REPORT)

A case of Parkinsons plus with classical MRI findings

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World Journal of Advanced Research and Reviews, 2023, 17(03), 449–451

Publication history: Received on 24 January 2023; revised on 10 March 2023; accepted on 13 March 2023

Article DOI: https://doi.org/10.30574/wjarr.2023.17.3.0371

Abstract

Progressive supranuclear palsy (PSP) is a rare brain condition. It is predominantly a sporadic disease that occurs between 45 and 75 years of age, typically after the age of 40. We herein report a presentation of radiological features of psp in a 60-year-old male patient.

Keywords: Humming bird sign; Parkinsons plus; MRI Signs; Micky Mouse

1. Observation

A 60-year-old male came with complaints of difficulty in walking, imbalance, and backward falls progressive over a period of 1 year. On physical examination patient had normal vital signs (blood pressure 130/80mmhg, pulse 82/min, temperature 97.2 F), preserved mental status. On neurological examination there were features of akinetic Parkinsonism with brisk rigid reflexes, pupils were bilaterally equal and reactive to light, extra-occular movements associated with vertical supranuclear gaze palsy. Patient didn't had any bowel or bladder involvement. Hematological profile of the patient (Hb-13.7gm, platelet-1.74lakh, Tlc-7600) was in normal limit. Patient was on treatment with levodopa.

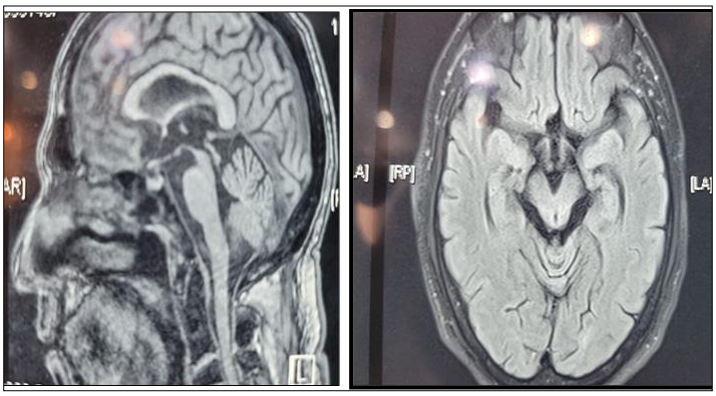

Figure 1 The Humming bird sign and micky mouse sign

On MRI classical HummingbirdSign also known as Penguin sign is seen. It occurs because of the flattening or concave outline of the superior aspect of midbrain which should be upwardly convex.[1,2]

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Mickey mouse appearance is also seen on mri which occurs due to the reduction of anteroposterior midline midbrain diameter at the level of the superior colliculi on axial imaging (from interpeduncular fossa to the intercollicular groove<12mm).[2,3]

2. Discussion

Progressive supranuclear palsy is a degenerative disorder that involves the brainstem, basal ganglia, diencephalon and selected areas of cortex. It is a most common phenotype of Parkinsonism after Parkinsonism disease. It's prevalence varies with age and estimated to be 5-7 cases per 100, 000.[4,5] It was first described by Steele, Richardson and Olszewski in 1964.[4]

Clinically it begins with falls and executive or subtle personality changes such as mental rigidity, impulsively or apathy. Dysarthria, dysphagia and symmetrical axial rigidity can be prominent features. A stiff, unstable posture with hyperextension of neck and a slow, jerky, toppling gait are characteristic. A progressive oculomotor syndrome which begins with Square wavy jerks, slow saccades will result into progressive supranuclearopthalmoparesis.[6] Although neuropathology is gold standard for diagnosing psp, certain clinical features may be slightly sensitive and specific such as vertical supranuclear palsy, which was evident in our patient.

In our patient combination of clinical presentation with atypical Parkinsonism, eye movement abnormalities and characteristics MRI features make the diagnosis of progressive supranuclear palsy highly likely.

The best imaging techniques to evaluate psp are MRI and DTI (diffusion tensor imaging). Features in mri of psp are the atrophy of midbrain tegmentum and superior cerebellar peduncles with relative preservation of pons, which are best represented in mid-saggital T1-weighted images, showing the appearance og Hummingbird (Hummingbird sign). Also in axial T1-weighted images, the neuronal loss of superior cerebellar peduncle superior decussation determines the decrease of anteroposterior midbrain diameter in association with dilation of interpeduncular cistern (classically known as Mickey Mouse appearance). Above both mri findings were evident in our patients mri. Along with that another sign known as Morning Glory sign can be seen on mri in patients of psp which occurs due to the loss of lateral convex margin of the tegmentum of midbrain.[7]

3. Conclusion

Patients with clinical features of Progressive supranuclear gaze palsy should undergo a proper MRI Brain study and the presence of classical MRI signs would be helpful in confirming the diagnosis.

Compliance with ethical standards

Disclosure of conflict of interest

No conflict of interest.

Statement of informed consent

Informed consent was obtained from all individual participants included in the study.

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