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A Case Report on Parinaud Syndrome: A Rare Presentation of Pineal Region Tumor

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Abstract: ***Parinaud Syndrome, also known as dorsal midbrain syndrome, is a rare neurological condition characterized by a cluster of clinical signs resulting from the dysfunction of the dorsal midbrain. This case report presents a unique case of Parinaud Syndrome in a 47 year - old female patient, which was ultimately attributed to a pineal region tumor. The patient's clinical presentation, radiological findings, treatment, and outcome are discussed in detail. This report underscores the importance of early recognition and prompt intervention in cases of Parinaud Syndrome, as it may be associated with serious underlying pathologies.***

Keywords: Parinaud Syndrome, dorsal midbrain syndrome, pineal region tumor, pupillary light - near dissociation, vertical gaze palsy, magnetic resonance imaging

1. Introduction

Parinaud Syndrome, named after the French neurologist Henri Parinaud, is a rare neurological disorder characterized by a constellation of clinical signs resulting from the dysfunction of the dorsal midbrain. The classical features of Parinaud Syndrome include vertical gaze palsy, pupillary light - near dissociation, convergence - retraction nystagmus, and lid retraction (Collier's sign).

2. Case Presentation

A 47 - year - old female patient presented to our neurology clinic with a one - month history of visual disturbances and unsteady gait. The patient's family noted a progressive inability to look up and down and reported that the patient's gaze remained fixed in a straight - ahead position. The patient also complained of diplopia and blurred vision when attempting to read.

On examination, the following clinical findings were noted:

1) Vertical gaze palsy: The patient had limited vertical eye movements with intact horizontal gaze.
2) Pupillary light - near dissociation: Pupils showed poor reaction to light but demonstrated normal constriction during accommodation.
3) Convergence - retraction nystagmus: Horizontal nystagmus was observed upon attempted upward gaze, with retraction of the globes.
4) Lid retraction (Collier's sign): Bilateral upper eyelid retraction was noted.

Neurological examination revealed no other significant abnormalities. Ophthalmological evaluation confirmed the presence of Parinaud Syndrome.

Radiological Evaluation:
Magnetic resonance imaging (MRI) of the brain was performed, which revealed a mass lesion located in the pineal region. The tumor exhibited features suggestive of a pineal parenchymal tumor.

Treatment and Outcome:
The patient was referred to the Department of Neurosurgery for further evaluation and management. Surgical resection of the pineal region tumor was performed successfully. Histopathological examination confirmed the diagnosis of a pineal parenchymal tumor.

Postoperatively, the patient's Parinaud Syndrome gradually improved. The vertical gaze palsy resolved, and pupillary light - near dissociation normalized. Ophthalmological signs, including convergence - retraction nystagmus and lid retraction, also improved significantly. The patient underwent postoperative rehabilitation and was followed up with regular neurological and ophthalmological assessments.

3. Discussion

Parinaud Syndrome is a rare but important clinical entity that can be caused by various underlying etiologies, including tumors of the pineal region, infections, and vascular lesions. Early recognition and diagnosis are crucial, as the underlying cause may require specific treatment, as demonstrated in this case.

4. Conclusion

This case report highlights a unique presentation of Parinaud Syndrome associated with a pineal region tumor. Timely diagnosis and intervention are essential for achieving favorable outcomes in such cases. Clinicians should consider Parinaud Syndrome as a potential manifestation of dorsal midbrain dysfunction and conduct thorough evaluations to determine the underlying cause.

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