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BARGAIN BIN TRAP: CHEAP PHENYTOIN TODAY MAKES TOMORROW COSTLY

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Abstract

RIGHT SWITCH AT THE RIGHT TIME AND OPTIMIZING THE PATIENT CARE AND MINIMIZING TOXICITY IS THE MAIN MOTIVE IN SELECTING AND STRESSING ON THIS CASE . CEREBELLAR ATROPHY REFERS TO THE DEGENERATION OF NEURONS IN THE CEREBELLUM WHICH CAN BE DUE TO MULTIPLE ETIOLOGIES. IT CAN EITHER BE INHERITED OR ACQUIRED ETIOLOGY, HERE , WE REPORT CEREBELLAR ATROPHY, WHICH IS PROBABLY PHENYTOIN INDUCED.

Index Terms- Cerebellar atrophy, Phenytoin, Neurodegeneration, Toxicity, Antiepileptic medication 6. Neuronal damage

INTRODUCTION

Cerebellar atrophy is a serious neurological disorder defined by the progressive loss of Purkinje cells and other neurons in the cerebellum, crucial for motor control, balance, and cognitive processing. This degeneration leads to significant symptoms such as ataxia, dysarthria, and impaired coordination. It is imperative to recognize that cerebellar atrophy can stem from multiple causes, including hereditary spinocerebellar ataxias and acquired factors like toxic exposures, infections, and certain medications. Long-term use of antiepileptic drugs, particularly phenytoin, is clearly linked to cerebellar degeneration, highlighting the critical need for vigilance in balancing therapeutic benefits against potential neurotoxic effects. As the management of epilepsy and other neurological conditions increasingly depends on pharmacological treatments, it is essential to understand the risks associated with drugs like phenytoin to optimize patient care and minimize the threat of long-term neurological damage. This report effectively presents a case of probable phenytoin-induced cerebellar atrophy, underscoring the urgent need for meticulous medication management and monitoring to prevent or mitigate this condition

A 40 year old male was brought to the opd with chief complaints of swaying while walking since 4 months, it was insidious in onset, and gradually progressive, there was also a history of difficulty in reaching objects . patient denied complaints of any limb weakness, speech and swallowing difficulties , numbness or tingling sensation, fever. He is a known epileptic and is on oral phenytoin for the past 14 years . perinatal and neonatal period was uneventful. There was no history of alcohol intake or smoking. There was no similar complaint in the past.

EXAMINATION

Patient is conscious, coherent and co-operative
Height : 158cm ,
weight : 58kg,
bmi : 23.2kg/sq m,
Pulse: 82bpm regular normal volume,
Blood pressure: 110/70mmhg in right ul



CRANIAL NERVE EXAMINATION: NORMAL

	Right	Left
Biceps	++	++
Triceps	++	++
Supinator	++	++
Knee	++	++
Ankle	++	++
Plantar	Flexion	Flexion

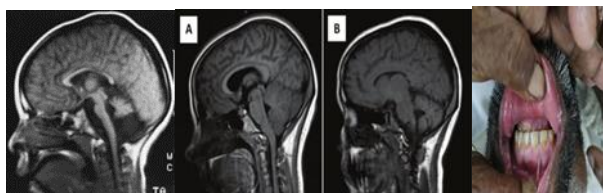
Sensory and motor examination: NORMAL

Cerebellar signs

Impaired :finger nose, finger finger nose, heel shin test
Nystagmus with a fast component towards the side of gaze
Impaired tandem gait,
Gait: ataxic gait
Skull & spine: normal
No signs of meningeal irritation.

INVESTIGATIONS

- MRI brain: 17/9/2024 suggestive of diffuse cerebellar atrophy
- Serum phenytoin levels: 28mcg/ml(therapeutic levels: 10-20mcg/ml)
- EEG:-s/o generalised seizure disorder



MANAGEMENT

Patient was started on oral levetiracetam and phenytoin was stopped, physiotherapy was advised

DISCUSSION

Aetiology of cerebellar atrophy includes inherited and acquired causes includes friedrichs ataxia, sca, paraneoplastic degeneration is seen in small cell ca lung (anti-hu antibody).

Transient cerebellar sign can be seen with acute phenytoin toxicity, which is usually reversible. More persistent ataxia with documented ataxia with documented purkinje cell loss can be seen in long term phenytoin therapy.

CONCLUSION

Thus, cerebellar atrophy, in this patient is probably due to long term toxic levels of phenytoin, so, therapeutic drug level, monitoring of phenytoin is recommended.

In cases of cerebellar atrophy, it is better to avoid phenytoin as it might have toxic effects on cerebellum which leads to worsening of ataxic symptoms.

Gabapentin/levetiracetam doesn't worsen the symptoms in such cases.

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