

# Idiopathic intracranial hypertension secondary to ingestion of *Morinda coreia* and *Azadirachta indica* leaves extract in infant

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## ABSTRACT

We report a case of idiopathic intracranial hypertension (IIH) secondary to ingestion of *Morinda coreia* (Nonan) and *Azadirachta indica* (Neem) leaves extract in a nine months old child. This herbal extract is believed to accelerate weight gain in infants and is commonly used in South India.

**Key words:** Infant, neem, nonan, pseudotumor cerebri

## INTRODUCTION

Idiopathic intracranial hypertension (IIH), aka pseudotumor cerebri, is elevated intracranial pressure (ICP) in the absence of any organic lesion in the brain.<sup>[1]</sup> Though it is commonly seen in obese women of reproductive age, this condition is well recognized in children. The common causes of IIH include drugs, infections, connective tissue, renal, endocrine, haematological and metabolic disorders.<sup>[2]</sup> Raised intracranial tension presents in older children with classical symptoms of headache, visual disturbances and vomiting, but presentation in infancy is often vague and nonspecific. In infants, raised intracranial tension usually manifests as bulging anterior fontanelle, irritability, incessant crying, refusal to feed and vomiting. We report a case of IIH in a 9-month old infant due to ingestion of a commonly used homemade herbal extract

prepared from the leaves of *Morinda coreia* (Nonan) and *Azadirachta indica* (Neem).

## CASE REPORT

A 9-month old developmentally normal and previously healthy child presented with complaints of fever, cough and respiratory distress of 2 days duration. There was no seizure, weakness or poor sensorium. The child had tachypnea and subcostal retractions. Respiratory examination showed bilateral extensive rhonci. There was bulging anterior fontanelle but no cranial nerve palsy or any other focal neurological deficit. Other systems were unremarkable. Her chest radiograph revealed bilateral hyper expansion and increased bronchovascular markings. Her hemogram, blood culture, urine routine examination, urine culture were within normal limits. Fundus examination did not reveal papilledema. Lumbar puncture revealed increased opening pressure though the exact measurement was not done. The cerebrospinal fluid microscopy, protein, sugar and culture were within normal limits. Neurosonogram did not reveal any significant abnormality. The child was diagnosed as a case of acute bronchiolitis and was managed conservatively following which respiratory symptoms improved within

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3 days. However, the child continued to have bulging anterior fontanelle. Careful history revealed that the child had bulging anterior fontanelle and irritability for the past 6 months. Mother also disclosed that she was giving home prepared herbal extract to the child since 3 months of age. The herbal extract was prepared by boiling nonan and neem leaves together and filtering the supernatant. Around 5 ml of this preparation was given daily to the child. In view of persistent bulging anterior fontanelle, a computed tomography of brain was done on follow up which showed normal ventricles, no mass lesions or evidence of venous thrombosis. Based on the symptoms, cerebrospinal fluid analysis and neuroimaging finding, the possibility of Pseudotumor cerebri was considered. Mother was advised to stop the herbal extract immediately and the child was followed up. Child had no symptoms of irritability or bulging anterior fontanelle when reviewed after 2 months.

## DISCUSSION

Pseudo tumor cerebri is diagnosed when the following criteria are met.<sup>[1]</sup> A) Presence of symptoms and signs of intracranial hypertension, B) Elevated intracranial pressure, C) Normal CSF composition, D) No evidence of any organic lesion in neuroimaging, E) No focal neurological defects, and F) No other identified cause of intracranial hypertension. Papilledema may not be present in infants with open anterior fontanelle since high pressures are transmitted to soft fontanelles earlier than the optic nerves.<sup>[2]</sup> Cranial nerve palsies may be seen especially involving the 6<sup>th</sup> nerve, but presence of any other focal neurological deficit or poor sensorium usually indicates another cause.

The infant had signs of increased intracranial tension in the form of bulging anterior fontanelle and irritability. Lumbar puncture revealed acellular and sterile cerebrospinal fluid and the protein and sugar were within normal limits. The CT Brain showed normal ventricles without any evidence of mass lesions or any other abnormality. All these features were pointing to the diagnosis of IIH. Though the opening pressure was found to be increased during lumbar puncture, an exact measurement of the CSF opening pressure would have made the diagnosis more objective. Stoppage of herbal extracts intake lead to the resolution of symptoms. However, this can also be attributed to the therapeutic role of lumbar puncture, which by itself is a management option in IIH.<sup>[2]</sup> Other common conditions causing IIH in infancy were carefully considered and ruled out. Hence, the herbal drug extract was suspected to be the cause

for IIH in this child. Causality assessment of the case was done using Naranjo Adverse Drug Reaction Probability scale.<sup>[3]</sup> The score on Naranjo adverse drug scale was 3, suggesting a “possible” relationship of the IIH with the herbal extract.

The nonan and neem are commonly used herbs in siddha which is an alternative traditional system of medicine followed in India. Leaves from these two herbs are boiled together and the extract is given to accelerate weight gain and to treat dysentery in infancy.<sup>[4]</sup> Use of this herbal extract in infants is widely practised in South India.<sup>[4]</sup> Nonan leaves are believed to have antibacterial properties. It is also used for wound healing and as an emmenagogue.<sup>[5]</sup> Neem has wide range of medicinal properties and is extensively used in Ayurveda, Unani and Homoeopathic medicine. Neem leaves have been demonstrated to exhibit immunomodulatory, anti-inflammatory, anti-hyperglycaemic, antiulcer, antimalarial, antifungal, antibacterial, antiviral, antioxidant, antimutagenic and anticarcinogenic properties.<sup>[6]</sup>

## CONCLUSION

We are reporting a case of IIH in a 9 months old child secondary to ingestion of a commonly used homemade herbal extract prepared from the leaves of nonan and neem leaves. Mothers should be discouraged to use this herbal extract in infants and the physicians should be aware of the possibility of this potential adverse effect.

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