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Case Report on Infantile Tremor Syndrome with Severe Acute Malnutrition

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Authors' contributions

This work was carried out in collaboration among all authors. All authors read and approved the final manuscript.

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Case Study

ABSTRACT

A 8 month old female infant presented with a complain of fever since 4 days which was low grade to moderate in nature, intermittent 1-2 spikes/day which was relieved with medication, cough and cold since 2 days which was on and off since last 2 months, and had complain of ear discharge since 1 week from right ear. The discharge was yellowish in color, small in quantity and non foul smelling; the infant was showing tremors of limbs during awake stage. The infant seemed unhealthy and the weight was very low according to the age growth. The infant showed mild tremors which was said to be ITS.

Keywords: *Infantile tremor syndrome; mean corpuscular volume, erythrocyte sedimentation rate; malnutrition.*

ABBREVIATION

ITS : Infantile Tremor Syndrome

MCV : Mean Corpuscular Volume

MCHC: Mean Corpuscular Hemoglobin Concentration

Hb : Hemoglobin

ESR : Erythrocyte Sedimentation Rate

CRP : C-Reactive Protein

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1. INTRODUCTION

Infantile tremor syndrome (ITS) is an uncommon clinical disease in children under the age of one year that is marked by coarse tremors, anaemia, and regression of motor and mental milestones. The exact number of cases is unknown. It accounts for 0.2 to 2% of paediatric hospital admissions in India (1-2 percent in 1960s, 1.1 percent in 1975-77 and 0.2 percent in mid-1990s) [1]. The decreasing incidence rates over time could be explained by improvements in nutritional status, living environment, and weaning procedures. It has mostly been recorded from India and Southeast Asia, but it has also been reported from other developing Asian and African countries [2]. Several nutrient deficiencies (e.g., vitamin B12, magnesium, zinc, vitamin C, etc.) have been linked to ITS. Viral encephalitis and degenerative processes are two other possible causes.

2. CASE REPORT

A 8 month old female infant with 63cm height 5.300 kg weight presented with a complain of fever since 4 days low grade to moderate, intermittent 1-2 spikes/day which relieved with medication, cough and cold since 2 days and was on and off since last 2 month, tremors was observed since 2 months and was observed more in limbs but was present only in awaked stage and had complain of ear discharge since 1 week from right ear and discharge was yellowish small in quantity and non foul smelling. Infant had history of same condition before a week and was admitted and treatment given was injection Augmentin and Syrup PCM as it was diagnosed as bronchopneumonia. Infant has also a history of 2 episodes of convulsion at home. Infant's mother informed that her baby was lagging in growth and development in comparison to the other children of same age and sex in the community. In family infant had elder brother of 9 years old and a sister who died at the age of 9 months due to severe bronchopneumonia. Infant's mother has sickling trait. Infant was exclusively breast feed.

The patient **Developmental History** shows as:

Gross Motor Development: was not able to sit with support; neck holding was present, can roll over at age of 5 month.

Fine Motor Development: Palm Grasp present

Language Development: No words

Social Development: Strange Anxiety Present

Gross Developmental Delay present.
Regression of Milestone is present.



Fig. 1. Patient suffering from ITS

According to WHO child growth standards

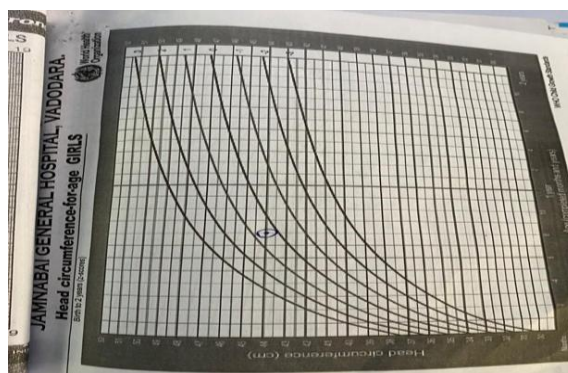


Fig. 2. WHO
(reference from website)

On general examination, the infant has innocent heart murmur which can be probably caused due to anaemia, the infant was found to be underweight (according to WHO child growth standards) and pallor (dark pigmentation in skin) was present. Pulse (126 bpm), temperature (98.2⁰F), respiratory rate (54bpm), CVS (S1 S2 +, murmur present), RS (AEBE B/L Wheeze > crepts).

3. LABORATORY INVESTIGATION

On investigation infant was found to be anemic with Hb (8.10 gm/dl), RBC (6.78 /cmm) MCV (70 fL), MCH(22 pg), MCHC(31.40 gm/dL), RDW (14.50 %), ESR (12 mm), Eosinophils (7%). Infants sickling test was found positive. CRP (positive). Cerebro-Spinal Fluid, Peripheral Blood

Film and Vitamin B12 examination was not conducted.

THERAPEAUTIC PLAN of infant was as followed:

Drugs	Dose/route/frequency
Ig F ₇₅	55 cc / 2 hrly
Inj. AUGMENTIN	155 mg/IV/8 hrly
Inj. AMIKACIN	30 mg/ IV/ 8 hrly
Syp.	5 ml /oral /
ALBENDAZOLE	Stat(immediately)
Syp. VIT.A	1 ml / oral/ Stat(immediately)
Syp. PCM	4 ml/ oral/ SOS (when required)
Syp. NERVITAS GOLD	3 ml /oral/ BD (twice a day)
Syp. ZINC	2.5 ml /oral /OD(once a day)
Syp. Calcium gluconate + D3	2.5 ml /oral/BD(twice a day)
Inj. ELDERVIT	0.5 ml /Intra Muscular/OD (once a day)

4. DISCUSSION

A plump-looking infant between the ages of 6 and 18 months with malnutrition is a classic ITS image. These kids are usually bored, indifferent, and uninterested in their environment. The hair on the scalp is sparse and pale in colour. The dorsal aspects of the hands, nail folds, feet, knees, ankles, buttocks, and axillae all have dark pigmentation. In the recent past, there has been a regression of milestones. Tremors appear suddenly after an infection or a stressful situation. They are intermittent at first, but after a few days, they become continuous. They are particularly noticeable in the distal portions of the limbs, the head, the face, and the tongue. These tremors go away as you sleep. In our cases, the majority of the traditional findings were present. Tremors are thought to be caused by structural and functional changes in the extrapyramidal system [3]. There is presence of anemia, which may be macrocytic, microcytic or normocytic.

The cause of ITS is yet unknown. Nutritional theory is the most widely acknowledged of the numerous hypotheses. Vitamin B12 insufficiency has been linked to ITS in a number of studies [1]. It's most common in vegetarian women who solely breastfeed their children for long periods of time [11-13]. The neurological symptoms of this disease may be caused by decreased levels of vitamin B12 and its transport protein

Transcobalamin II (TC II) in the cerebrospinal fluid (CSF) [4]. ITS has also been linked to iron, magnesium, and zinc deficiencies. Other dietary deficits such as protein, vitamin A, D, C, B-complex, and other micronutrients are frequently found, either directly or indirectly [1, 5, 6]. Other speculations for its etiology include viral encephalitis and degenerative processes.

The treatment was given based on the anemia and the malnutrition deficiency. Due to lack of awareness and unable to afford the cost we were unable to go for further investigations and the main cause of ITS [7-13]. Infant was given a multivitamins for treating the malnutrition and as the tremors were not severe we had avoided anti seizure drugs while as the infant was suffering from bronchopneumonia we had given antibiotic to that infection.

5. CONCLUSION

A plump-looking infant aged 6 to 18 months with malnutrition is a classic ITS picture. These children are usually bored, indifferent, and uninterested in their environment. The hair on the scalp is scant and light-colored. Hands, nail folds, feet, knees, ankles, buttocks, and axillae all have dark pigmentation. Because the infants were diagnosed based on the aforementioned criteria, they were provided anaemia and malnutrition treatment. Anti-seizure medications were not prescribed because the tremors were not severe.

ETHICAL APPROVAL

As per international standard or university standard written ethical approval has been collected and preserved by the author(s).

CONSENT

Informed consent was obtained from the individual participant included in the study.

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COMPETING INTERESTS

Authors have declared that no competing interests exist.

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