Case study

Case Report on Infantile Tremor Syndrome with severe acute malnutrition.

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.

Introduction:

Infantile tremor syndrome (ITS) is a rare clinical disorder, characterized by coarse tremors, anemia and regression of motor and mental milestones in children of around one year of age. Exact incidence is not known. In India, it accounts for 0.2 to 2 % of pediatric hospital admissions (1-2% in 1960s, 1.1 % in 1975-77 and 0.2% in mid-1990s) [1]. Improvement in nutritional status, living conditions and better weaning practices could explain the reducing incidence rates over the years. It has been primarily reported from India and South East Asia and has also been reported from other developing countries in Asia and Africa [2]. Various nutrient deficiencies (e.g. Vit B_{12}, Magnesium, Zinc, Vit C etc.) have been found to be associated with ITS. Other causative theories include viral encephalitis and degenerative processes.

Case Report:

A 8 month old female infant presented with a complain of fever since 4 days low grade to moderate, intermittent 1-2 spikes/day which relieved was with medication, cough and cold since 2 days was on and off since last 2 month, tremors 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. Infant's mother had sickling trait. Infant was exclusively breast fed.

Figure 1 Patient suffering from ITS

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.

According to WHO child growth standards

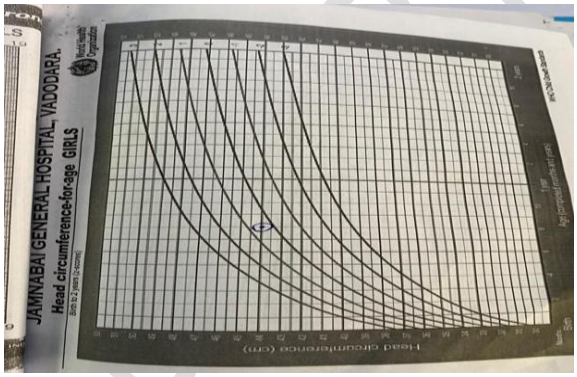

Figure 2 reference from website

On general examination, the infant was found to be underweight and pallor was present. Pulse (126 bpm), temperature (98.2^{0}F), respiratory rate (54bpm), CVS (S1 S2 +, murmur present), RS (AEBE B/L Wheeze › crepts)

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)

Table1 : 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. ALBENDAZOLE	5 ml / PO / Stat
Syp. VIT.A	1 ml / PO / Stat
Syp. PCM	4 ml/ PO/ SOS
Syp. NERVITAS GOLD	3 ml /PO / BD
Syp. ZINC	2.5 ml /PO /OD
Syp. Calcium gluconate + D3	2.5 ml /PO/BD
Inj. ELDERVIT	0.5 ml /IM /OD

Discussion :

A classical picture of ITS is a plump looking infant between 6 to 18 months with presence of malnutrition. Usually, these children are listless, apathetic and disinterested in surroundings. Scalp hair is sparse and light colored. Dark pigmentation is present over dorsal aspects of hands, nail folds, feet, knees, ankles, buttocks and axillae. There is regression of milestones in the recent past. Tremors have an acute onset following an acute infection or stress. Initially they are intermittent but become continuous in a few days. They are more prominent in distal parts of limbs, head, face and tongue. These tremors disappear during sleep. Most of the classical findings were present in our cases. Tremors have been attributed to structural and functional alterations of extrapyramidal system [3]. There is presence of anemia, which may be macrocytic, microcytic or normocytic.

The etiology of ITS is still elusive. Among various theories, nutritional theory is the most accepted. Vitamin B_{12} deficiency has been found to be associated with ITS in many studies [1]. It is usually seen in children who are exclusively breast-fed for prolonged periods by vegetarian mothers. The low levels of vitamin B_{12} and its transport protein Transcobalamin II (TC II) in the cerebrospinal fluid (CSF) maybe responsible for the neurological features of this syndrome [4]. Iron, magnesium and zinc deficiency have also been postulated to cause ITS. It is usual to find direct or indirect evidence of associated other nutritional deficiencies like protein, vitamin A, D, C and B-complex and other micronutrients [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. 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.

Table 2 : Abbreviation: Compliance with ethical standards:

ITS	Infantile Tremor Syndrome
MCV	Mean Corpuscular Volume
MCHC	Mean Corpuscular Hemoglobin Concentration
Hb	Hemoglobin
ESR	Erythrocyte Sedimentation Rate
CRP	C-Reactive Protein

Reference:

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