

Case Report

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A Child with Chronic Severe Malnutrition in Tribal India – A Case Study.

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Introduction:

The first 1000 days of a child's life are important for his/her long-term physical, mental and emotional development especially from a nutritional perspective. Inadequate nutrition during this phase can have severely negative consequences like impaired intellectual development.¹General under-nutrition is more prevalent amongst rural children,

scheduled castes and tribes, and amongst children with illiterate mothers. The contributing factors among these children are household food insecurity and intra-household food distribution, poor diets, inadequate preventative and curative health services and insufficient knowledge of care and infant feeding practices.² Undernutrition amongst women is also

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one of the primary causes of low birth weight babies and poor growth of children.¹

‘Anganwadi’ workers are trained health volunteers under the Integrated Child Development Services (ICDS-centrally sponsored, single major child program in India) who monitor growth and development of all the children in the area covered by that ‘Anganwadi’ and provide health education. Despite 30 years of implementation of ICDS, about half of children below 3 years in Maharashtra were found undernourished. As per National Family Health Survey-3 (NFHS-3), 40 % children under age 3 are underweight, 45% are stunted and 23 % are wasted⁴ and less than 5 % of them have access to care.¹ Being a signatory of the Millennium Declaration of the United Nations’ Millennium Summit, India has

to halve malnutrition among children below five years by 2015.⁵

Improved access to maternal and child health care services, nutrition and sanitation is one of the primary goals of National Rural Health Mission (NRHM). As a part of this goal accomplishment, a ‘Mother and Child Health’ care camp under ‘Manav Vikas Karyakram’ is held every month in a tribal area of Maharashtra.

During one of such camps, a grandmother brought her grandson with complaint of ‘Failure to gain weight’. Considering the burden of malnutrition and associated mortality in the community, it was considered imperative to take a step towards curbing this silent epidemic. Hence the case was investigated in detail to understand the underlying factors that lead to malnourishment.

Aim and objectives

1. To assess nutritional status of the child
2. To find out the nutritional support and interventional facilities available at health services for child.
3. To identify long-term health needs and establish assistance for the child.

Case History:

A one year old male child, residing in a tribal village of Maharashtra was brought by his grandmother with chief complaint of 'Improper weight gain since birth' and history of multiple episodes of diarrhea and vomiting over one year. There was no history of worm infestation, pica, Tuberculosis/ TB contact or any other major illnesses in the past.

It was a preterm, institutional, vaginal delivery at 28 week with no complications. Baby cried immediately after birth, Birth weight- 1kg 300gms. Mother was primi-gravida, registered at a nearby Peripheral Health Centre for Antenatal care, took two injections of Tetanus Toxoid. The family denies any illness in the mother during pregnancy. Neither any records nor detailed history of course of pregnancy or her nutritional status were available.

Sugar water was given as pre-lacteal to the baby. Breast feeding was started 3

hours after birth. The mother exclusively breast fed the baby for three months, approximately 6-8 times a day, each feed lasting around 15-20 minutes. However, during that time the family members perceived the baby to be weak and not gaining weight; and assumed it was because the "mother's milk output was insufficient". As a result, complementary feeding was initiated at three months of age consisting of thin watery kanji (type of soup made from dal/rice) with a bottle along with intermittent breast feeding (2-3 feeds per day). At age of 7 months, child had 3-4 episodes of diarrhea. Consequently the family assumed it to be due to indigestion of kanji by the infant, dilute buffalo milk was given to the child 4-5 times a day from a bottle for approximately two months which was not hygienically maintained (**Fig 1**). Neither treatment nor guidance was taken from any medical facility. After 2 months, again rice kanji feeds were started along with dilute buffalo milk.



Fig-1: Feeding bottle

The child was registered in the ‘Anganwadi’ since birth. The anganwadi worker tried to communicate with the child’s parents that, it would need special care and regular growth monitoring. They were asked to take the child to a tertiary care hospital but, the parents were non-compliant and despite efforts by health workers they remained non-cooperative.

Developmentally, the child only makes babbling noises and is able to stand with support at age one. Child was appropriately immunised at proper intervals.

The child belonged to a Below Poverty Line (BPL) backward class family. Both parents were illiterate and worked seasonally either in brick or farming

industry. The child’s mother was married at the age of 17 years. She delivered her first child (i.e. the case) at the age of 18 years. Her weight during the interview was 40 kg and she appeared malnourished. The family comprising of four members resided in an ill-illuminated and ill-ventilated ‘kaccha’ house. The overall environmental conditions were unsanitary.

On general examination, the child was conscious, cooperative, not irritable, responding to external stimuli and afebrile. Pallor was present. There was loss of subcutaneous fat (“Baggy pant appearance”- **Fig 2**). Vital parameters were stable, but few signs of vitamin deficiency (scarcity of hair, dry skin) were observed. There were no signs of

dehydration or any other clinically significant observations.



Fig 2: Severe acute malnourished child with signs of severe wasting

Anthropometry findings at first visit(11/06/2013) were as follows:

Height	Weight	Mid arm □	Head □	Chest□	Abdominal □	Anterior fontanelle
56 cm	3kg 300 gms	8 cms	39.5 cms	31 cms	31 cms	3x3cms

□- Circumference

On CNS examination, reduced tone and power was observed in all four limbs.

Abdomen was distended but there was

no organomegaly. Respiratory and cardiovascular system findings were normal

Table 1: Expected versus achieved milestones of the child

Milestones	Expected	Achieved
Gross Motor	Walking with assistance	Neck holding only
Fine motor	Stops mouthing of objects	Irritable
Social	Cooperates in dressing	Irritable
Language	Says 2-3 words, understands several ones	Monosyllabic words

Clinico-social diagnosis:

One year old male child, the only child of parents, residing in a remote tribal village, belonging to backward social class, 1st by birth order, born of non-consanguineous marriage, preterm vaginal institutional delivery, with history of faulty feeding practices was evaluated for poor weight gain since birth, is most probably a case of **Chronic Severe Malnutrition.**

Long term supportive measures:

The ‘Anganwadi’ staff was motivated to follow all necessary measures for the child, including admission to the Village Child Development Centre (VCDC). The child was started on multi-vitamin (Top Sprink) powder daily. Two meals (Thin rice Kanji) of the day were replaced by ‘Ragi’ biscuits and one cup milk (Provided by ICDS). The mother was

The child was diagnosed clinically according to World Health Organisation criteria as: Severe Acute Malnutrition for Weight for Height < -2 Standard Deviation (SD), Stunted for Height for age < -2SD and Wasted for weight for Height < -2SD.^{6,7}

motivated to give the child semisolid food like ‘khichdi’ (rice & dal) instead of rice kanji. On follow up after one month, the child had improved (**Chart 1**). The mother was advised to follow up regularly in ‘Manav Vikas Karyakram’ camps and she did for two times in last 6 months.

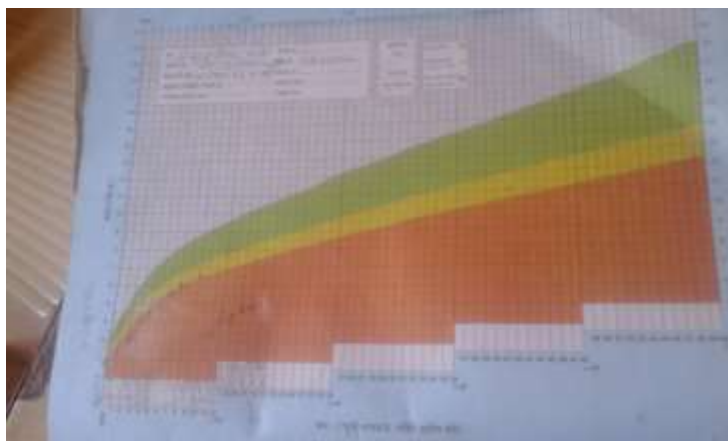


Chart-1: Plotting of weight of the child on growth chart showing improvement

Discussion:

The chain of malnutrition in this child was initiated with early marriage of the mother who was both mentally and physical immature during her pregnancy. Her nutritional status both before and during the pregnancy is positively associated with the child's nutritional status. This finding is similar to the study done by A. Pandey.⁸

The feeding practices were faulty (pre-lacteal feeding, early initiation of complementary feeding, energy deficient food) for a long period. This preterm, low birth weight child was at a high risk of growth faltering. His condition was further worsened because of his ignorant and illiterate parents who lacked awareness of importance of growth monitoring. They furthermore did not follow up regularly in the 'Anganwadi'. The significant association between knowledge of parents and feeding practices is already studied by S. Chatterjee in Kolkata.⁹

A.R. Dongre et al had emphasized the need to improve capacity of ICDS staff so as to address field level operational constraints in reducing child malnutrition.¹⁰ Was it operational constraint felt by anganwadi worker

that child has not received any nutritional intervention? Well, the present study attempts to find the answer. On examining the existing health care systems, it was observed that the village 'Anganwadi' was located merely 100 meters away from the house of the child. The child was not registered as Severe Acute Malnourished (SAM) (Fig 3) till the time of this investigation. As the child migrated with his parents to their work area, he was unavailable at 'Anganwadi' and hence missed for routine growth monitoring. But no proactive step was taken to bring this case to the notice of higher authorities. When A.R. Dongre et al studied malnutrition in a rural area of 'Wardha', they suggested that ICDS needs to design and implement flexible, area-specific and focused activities for 'Anganwadi Workers' (AWW) to efficiently tap their potential for reducing multidimensional problem of malnutrition.¹¹ However, no change has occurred in the system.

Malnutrition is a classic example of iceberg phenomenon and consequently surveillance activities are of paramount importance to explore many hidden cases in community.

The present case of malnutrition may be a just drop in the ocean of malnourished children; nonetheless we hope that this example will carve a new path for earlier detection of growth faltering and encourage holistic approach in the management of such children. This study is first of its kind that attempts to focus on both clinical and social aspects

of malnutrition and concludes that quality care by family members and regular vigilance on nutritional activities by authorities in health care system certainly brings about healthy changes for the child. Thus a multipronged approach was adopted in this study, the importance of which has also been highlighted by Mandal S.¹²

Recommendation:

To understand the hurdles faced by health workers for implementation of the program qualitative studies for health care providers like In-depth and Key Informant interview may be

helpful. Focus group discussions among young mothers in the community for understanding their knowledge and practices in the context of nutrition are also needed.

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