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Case Report

Developmental Delay in 14 Month old boy with Grade I Malnutrition

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ABSTRACT

When a child does not meet his or her developmental milestones within the predicted time or age, this is referred to as developmental delay. Developmental milestones are activities that certain children master or acquire at specific ages. Head balance, rolling, crawling, driving, and talking are a few examples. The mechanism of growth and the completion of such developmental milestones are referred to as child development. The patient was a 14 months old male child came to the hospital with complaint of inability to sit also he is unable to hold anything in his hand. As narrated by the mother the child was born to G2P1L1A1 mother at 9 months 5 days of gestation. The child has not yet attained gross motor milestone such as rolling over and no sit with support. The child attained immature pincer grasp at 12 months of age and has not attained mature pincer grasp. Social smile was attained at 6 months, stranger anxiety at 12 months and the child has not attained bye-bye. The child was alert to sounds by the age of 9 months .babbles at 10 months and says mama-dada at 12 months. The child is immunized till age. The marriage of the parents was non-consanguineous marriage. The child was born with a weight of 2.5 kg the mother had LSCS and breech delivery. The child did not cry immediately after birth. The child has history of fever after 3 months of delivery. The child is also interpreted as grade 1 mild malnutritious (71-80) %. Developmental delay and grade 1 mild malnutrition. The above study shows that Neck facilitation exercises in prone lying, Ice technique and proper brush technique for neck facilitation improves neck holding. Rolling facilitation in side lying position and proper handling positions helps in attaining milestones such as Rolling over. Facilitation of extension tone with vestibular rehabilitation helps to facilitate extensors. Family plays an important role in the management of such cases all the exercises should be properly explained to them for more improvement. Supporting the child while sitting, for example, might help him or her develop weight shifting, rotation, coordination, and balance.

Keywords: Developmental Delay, Malnutrition, Developmental Milestones.

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INTRODUCTION

When a child does not meet his or her developmental milestones within the predicted time or age, this is referred to as developmental delay. Developmental milestones are activities that certain children master or acquire at specific ages. Head balance, rolling, crawling, driving, and talking are a few examples. The mechanism of growth and the completion of such developmental milestones are referred to as child development. Developmental delay is described as abnormal delays in development that prohibit a child from meeting these milestones. These may have an effect on a child's motor, speech and vocabulary, and social skills. A child with global developmental delay is one that has delays in all of these aspects. Child milestones emerge in a logical order over time. Children grow at varying rates and with various strengths and disadvantages, making it Impossible to diagnose developmental delay until a child's growth is far behind their anticipated level. Many factors may contribute to developmental delay. A child's growth is increasingly influenced by genetic and environmental influences. If a child is born with a genetic or chromosomal abnormality, such as Down's syndrome, he or she is at risk of developing developmental delays. This irregular development will occur while the baby is still developing in the womb. Premature pregnancy, genetic and heredity abnormalities, and virus transmission before or after birth may also cause developmental delays.

Any child with a developmental delay presents in a different way. Some children can experience delays in one area, such as walking, while the rest of their skills develop normally. A child's

ability to use their muscles is affected by motor developmental delay, which may impair fine and/or gross motor abilities [1].

The big muscles in the arms, legs, or trunk are affected by gross motor delays, resulting in mobility difficulties. Fine motor delays involve the smaller muscles, most often in the hands, causing trouble with handwriting and grasping objects [2]. Global developmental delay (GDD) is characterized as a delay in two or more developmental domains of gross/fine motor, speech/language, comprehension, social/personal, and everyday life behaviors in children under the age of five [3].

Patient Information

The patient was a 14 months old male child came to the hospital with complaint that the child is unable to sit and is unable to hold anything in his hand. As narrated by the mother the child was born to G2P1L1A1 mother at 9 months 5 days of gestation. The child has not yet attained gross motor milestone such as rolling over and no sit with support. The child attained immature pincer grasp at 12 months of age and has not attained mature pincer grasp. Social smile was attained at 6 months, stranger anxiety at 12 months and the child has not attained bye-bye. The child was alert to sounds by the age of 9 months .babbles at 10 months and says mama-dada at 12 months. The child is immunized till age. The marriage of the parents was non-consanguineous marriage. The child was born with a weight of 2.5 kg the mother had LSCS and breech delivery. The child did not cry immediately after birth. The child has history of fever after 3 months of delivery. The child is also interpreted as grade 1 mild mal-nutritious (71-80) %.

Clinical Findings

Birth history**-**The child did not have any history of injury prenatally. Duration of pregnancy: 9 months 5 days**.** Weight at birth**:** 2.5 kg. Type of delivery: LSCS and breech presentation**.** Delayed cry and no admission to NICU.

Table 1. Anthropometry

	Observed	Expected	Percentage
Height/ Length	78.5 cm	81 cm	96%
Weight	7.9 kg	11 kg	71%
Head Circumference	45 cm	47 cm	95%

Grades of malnutrition: IAP Grade 1- mild malnutrition (71%-80%). Higher mental function**:** The child was alert and conscious.

Table 2. Developmental milestone

Table 2a: Gross Motor

Gross Motor	Normal age	Age of attainment
Neck holding	3 months	Not attained
Roll over	4 months	Not attained
Sits with support	6 months	Not attained
Sitting without support	8 months	Not attained
Stands with support	9 months	Not attained
Stands without support	12 months	Not attained

Table 2b: Fine Motor

Fine Motor attainment	Normal age	Age
Bidextrous Reach	4 months	6 months
Unidextrous Reach	6 months	8 months
Immature pincer grasp	9 months	12 months
Mature pincer grasp	12 months	Not attained

Table 2c. Social Behavior

Social attainment	Normal Age	Age
Social Smile	2 months	6 months
Recognizes Mother	3 months	6 months
Stranger Anxiety	6 months	12 months
Waves bye bye	9 months	Not attained
Comes when called	12 months	Not attained

Table 2d. Language

Language of attainment	Normal age	Age
Alerts to sound	1 months	9 months
Coos	3 months	3 months
Laugh loud	4 months	11 months
Monosyllables	6 months	9 months
Bisyllables	9 months	12 months
1-2 word with meaning	12 months	Not attained

Tone examination

The child is hypotonic. Deep tendon reflexes were normal. The range of motion of upper limb and lower limb was normal. The child did not have any feeding difficulty. The child has bilaterally moderate hearing loss. The child did not have any respiratory complication.

Diagnosis

The patient was diagnosed with global developmental delay.

Figure 1. Patient sitting with support

Therapeutic intervention

Physiotherapy treatment was started as early as possible as a child's brain can adapt easily therefore they respond well to treatment. Our aim was to Increase muscle strength, to Stretch stiff joints, to improve balance and coordination, to promote normal patterns of movement, to achieve developmental milestones, to achieve maximum potential, to improve quality of life, to promote independence with everyday tasks.

Physiotherapy management was started as soon as possible since the child's brain adapts quickly and so responds well to treatment. The child received physiotherapy for 15 days. The treatment was started with Neck facilitation exercises in prone lying the child was made to lay down in prone lying position while the therapist applies

slight stroking with the help of brush this will help in facilitation of neck. Ice technique and proper brush technique for neck facilitation was done.

Along with neck facilitation, same was explained to the mother. Side lying position was advised to the patient in order to initiate rolling. Postural control in sitting advised. The child was made to sit supported with pillow. Physiotherapy sessions including prone on elbow with the help of pillow was done along with prone on hand. Facilitation of extension tone with vestibular rehabilitation was done in order to facilitate extension. Exercises to improve muscular strength and control so that your child can transfer their body weight and balance more effectively was done. Stretching muscles to lengthen them, minimize contractures, and enhance range of motion was done. Improving head and trunk control through correcting and altering placement. Supporting the child while sitting, for example, might help him or her develop weight shifting, rotation, coordination, and balance. In order to develop Pincer grasp the child was made to grasp certain objects like cloth, pen, Toys, Blocks etc. Blocks of various size and structure encouraged the child to grasp item with his hands.

By the end of 15 days the child was able to sit with support he was able to balance the body and he was able to do pincer grasp. He was able to grasps things.

Home program

The mother was educated about all the exercises in detail. She was advised to give the child proper tummy time. She was counselled that the child has to continue regular physiotherapy sessions in order to attain gross and fine motor skills, the family was counselled regarding the same. The mother was also counselled about proper handling positions. The mother was advised to continue all the exercises.

Follow up and outcome

More improvement was seen after a month when the child came for follow up he was now able to roll over independently. His neck control was improved. The improvement was seen in his fine motor and gross motor skills. He was now able to balance his posture

DISCUSSION

In such a busy general practice, gathering parent reports of development is an excellent first line screen as well as a fast and effective technique of identifying children who need a more extensive examination and/or referral. Early intervention is critical for the delayed child's developmental growth [4,5,6].

Global Developmental delay affects up to 5% of children as young as five years old [7]. Delays in speech development, motor development, social-emotional development, and cognitive development are all examples of developmental delays [8,9]. General practitioners are well placed to play a pivotal role in the early diagnosis of developmental and behavioral issues in children[10].

CONCLUSION

The above study shows that neck facilitation exercises in prone lying, Ice technique and proper brush technique for neck facilitation improves neck holding. Rolling facilitation in side lying position and proper handling positions helps in attaining milestones such as Rolling over. Facilitation of extension tone with vestibular rehabilitation helps to facilitate extensors. Family plays an important role in the management of such cases all the exercises should be properly explained to them for more improvement. Supporting the child while sitting, for example, might help him or her develop weight shifting, rotation, coordination, and balance

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