

Early Intervention in Developmental Delay

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ABSTRACT

A 10-month-old child with prenatal history of vaginal bleeding in mother at 8 weeks of pregnancy, delivered by cesarean section and history of neonatal jaundice was brought with poor social smile, poor eye contact, and inability to sit independently. He was enrolled in early intervention programme, which included relaxation exercises, passive exercises, visual stimulation and auditory stimulation. By the end of 8 months of the therapy, he could walk independently, was able to pick glassful of water and keeping away after drinking, was using disyllabic words meaningfully, could indicate for hunger and toilet and was able to recognize the parents and self. [Indian J Pediatr 2008; 75 (4) : 393-395] E-mail: arunk_cip@rediffmail.com

Key words : Developmental delay; Early intervention; Schaffer's profile graph

Developmental delay is a major delay in the process of a child's growth. It can occur in one or many areas — for e.g., motor, language, social or cognitive (understanding) skills. Delay is said to exist when a child does not reach developmental milestones at the expected age (with adequate leeway for the broad variation among normal children).¹ Early intervention is a systemic and planned effort to promote development through a series of manipulations of environmental or experimental factors, initiated during first five years of life.² Although early intervention is a fairly known modality, the empirical evidence based reports are infrequent in Indian literature. A study by Kaur *et al.* reported that in children with developmental delay, were delivered *via* normal vaginal delivery (55%), cesarean section (20%), at full term (68%) and in hospital (60%). There was history of delayed birth cry in 37%. Mental retardation was present in 88% and the IQ mean (SD) of the studied group was 50(24.3). Nearly 30% children were unable to crawl or stand with support and 43% were unable to walk.³

CASE REPORT

A 10-month-old male child, with nil contributory family history, born out of non consanguineous marriage, whose mother suffered from bleeding *per vagina* at 8 weeks of

pregnancy for few days. She was put on bed rest until delivery at 40 weeks by cesarean section. Child's birth weight was 3.5 Kg. He had neonatal jaundice within first week of life, for which he received phototherapy for 48 hours. He was brought to us with poor eye contact, poor social smile, and inability to sit independently, as was expected of his age. At the time of presentation, he responded to different light intensities, used adaptive movements rather than reflexive reactions, vocalized randomly, quit when picked up.

He preferred to play alone with toys. He received immunizations with BCG, polio and DPT vaccines.

On physical examination, his weight was 7.7 Kg and occipito-frontal circumference was 45.6 centimeter. He could hold neck straight, turn and babble. He also had poor visual fixation with nystagmus. He was not responding to sound but at times paid attention. His upper extremities were normal for power and tone, but there was an increase in tone of lower limbs with muscle power of grade III.

In the investigation work-up, ultrasonography of head revealed normal echogenicity of both the hemispheres, but prominent lateral, third and fourth ventricles with prominent sulci. Rest all investigations were within normal range including brainstem evoked response audiometry. His developmental age was calculated to be in the range of 0-2 months (*as per* assessment on Schaffer's developmental profile graph). A diagnosis of static encephalopathy (cerebral palsy) was made, based on above-mentioned information. However, before coming to us, various physicians loosely diagnosed this case as a case of multiple disabilities with poor prognosis of illness.

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It caused great stress to the parents of child, before they consulted us.

He was enrolled in early intervention programme, which included relaxation exercises, passive exercises, visual stimulation and auditory stimulation. Pre and post therapy assessment was done using Schaffer's profile graph (Fig. 1).⁴ It assesses a child in domains of perceptual fine motor, cognition, language, social/emotional, self-care and gross motor skills.

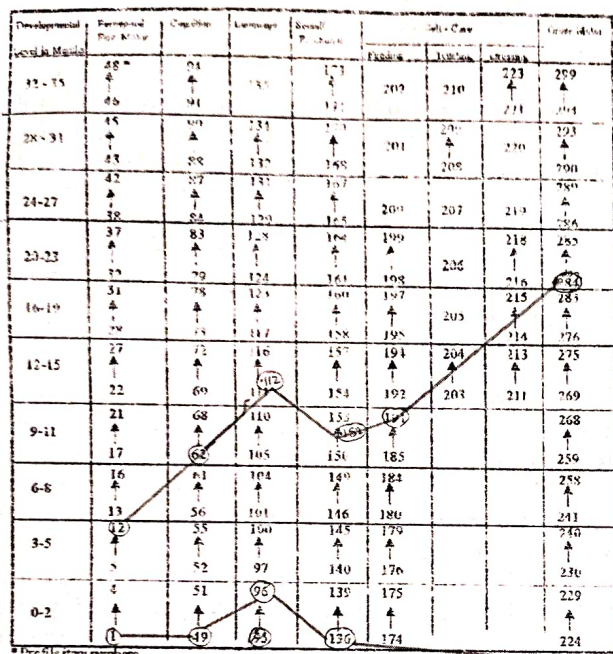


Fig. 1 Pre and Post intervention schaffer's profile graph of patient

By the end of 8 months of therapy, he could walk independently, was able to pick glassful of water and keeping away after drinking, was using disyllabic words meaningfully, could indicate for hunger and toilet and was able to recognize the parents and self.

DISCUSSION

Developmental delay is major concern for parents as well as the society. It can occur in any area like gross/fine motor, speech/language, cognition, social/personal, and activities of daily living. Although delay may result from biologic factors such as a chromosomal disorder or an environmental factor such as maternal depression, the primary model for the pathogenesis of developmental delay is a "transactional" one, wherein the process of development is viewed as an interaction between the child and the environment.⁵

As per guidelines of IDEA (Individuals with

Disabilities Education Act) of United States, "Early intervention services are designed to meet the developmental needs of children, from birth to three years of age, who have a delay in physical, cognitive, communicative, social, emotional or adaptive development or have a diagnosed condition that has a high probability of resulting in developmental delay".⁶ Early childhood intervention consists of multidisciplinary services provided to developmentally disabled children from birth to age 3 years and their families. They are designed to enhance child development, minimize potential delays, and remediate existing problems to prevent further deterioration.⁷ Children with multiple risks, benefit most from early childhood development interventions.⁸

Early intervention for all types of communication disorders is effective and almost certainly more efficient than intervention provided at later age.⁹ In a study, Infants with baseline developmental quotient (DQ) of 70 showed improvement of 10-50 points in their DQ, in home based intervention programme with parental involvement.¹⁰

This report clearly highlights the need of awareness for early recognition, appropriate referral and early intervention for a child, having developmental delay to prevent the disability arising due to it and to reduce burden on the family and community.

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