

Rehabilitation using neurodevelopmental and sensory integration therapy approaches in an 8-month-old infant with self-gratification behavior: A case report

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ABSTRACT

Self-gratification behavior is a normal behavior in infants or children and is usually misdiagnosed with dystonic development delays, repeated movement disorders, or even epilepsy. This case report aims to share our clinical experience in managing a child with self-gratification disorder through physical therapy techniques. An 8-month-old female infant presents with concerns related to poor social interaction, reduced play, irritable behavior, frequent crossing, and stiffness in the legs which she started showing at 3 months of age. She was earlier diagnosed with dystonic developmental delay and referred for a thorough development and sensory assessment. Rehabilitation with sensory integration and neurodevelopmental techniques was delivered to the child. Ages and Stages Questionnaire, Denver's score, and Sensory profile were assessed at 8–9 months, 9–10 months, and 10–11 months to monitor prognosis. There was a significant improvement in self-gratification habits and improved attention in the child. Self-gratification behavior is a normal behavior in infants or children and is usually misdiagnosed. Treatment mainly constitutes neurodevelopment, sensory integration techniques, and parent education.

Key words: Development delays, Infants, Self-gratification, Sensory profile


Self-Gratification behavior, also known as “benign idiopathic infantile dyskinesia”, is a form of masturbatory behavior that is often mistaken for epilepsy, abdominal pain, paroxysmal dystonia, cerebral palsy, or dyskinesia. It occurs in children between the ages of 3 months to 3 years and peaks at adolescence. The exact mechanism is not described in the literature, but environmental stress, family stress, excitement, and genital infection are a few contributing factors [1]. Gratification behavior has been reported in 90–94% of boys and 50–55% of girls. Diagnosis is usually done based on descriptive history, observation, neurological, or development assessment. In infants, self-gratification is benign and limited and often spontaneously disappears by the age of 2 years. Although, in the future, these children are often at risk of attention deficit hyperactivity disorder [2].

There is very little literature about self-gratification observed in early childhood or infancy and less is known about the factors influencing this entity. Thus, we report a case of self-gratification disorder in an 8-month-old female child who was initially diagnosed

with dystonic developmental delay. She had developmental milestones to be achieved and some associated neurological manifestations. An extensive rehabilitation program helped her achieve her goals and explored the risks of future developmental, behavioral, or neurological abnormalities. In the Indian societal domain, self-gratifying behavior is considered taboo, hence, it is equally important to have a parent counseling explaining to them it is a normal behavior observed in a baby and resisting or not acknowledging these behaviors as a medical issue may result into negative reinforcement and a child with low self-esteem.

CASE PRESENTATION

An 8-month-old female child was presented in our rehabilitation department with concerns related to poor social interaction, reduced play, irritable behavior, frequent crossing, and stiffness in the legs which she started showing at 3 months of age (as reported by the parent). She was born at full term through a lower segment cesarean section with a birth weight of three kilograms and cried immediately after birth. The mother reported polyhydramnios

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during her antenatal period. Lactation was induced right from birth through breastfeeding but later had to be discontinued as the baby was colic and was diagnosed with (Cow milk protein intolerant) and regurgitation. Nutramigen was given for nutritional support to the baby. Her sleep was irregular and disturbed, and she often needed to hold and move for the same.

On examination, she showed poor social interaction, limited transitions and participation during play, poor postural and balance control, poor eye contact, and responsiveness to name. Her parent reported self-stimulating behaviors like stretching and crossing her legs when happy or stressed, playing with her legs more than her hands, irritable behavior before sleep, inappropriate loud sounds and coughing between playing, and keeping her mouth mostly open during play (hyperventilation) from 8 months of age.

She underwent a pediatric assessment that included an evaluation of gross motor skills, fine motor skills, personal, social, and communication perspectives. She was initially diagnosed with dystonic developmental delay, underwent rehabilitation for the same, and showed some improvement in the exploration of objects and the environment. At 8 months, she showed self-gratifying signs and was referred for a thorough sensory and development assessment.

An extensive rehabilitative routine was started for her with a frequency of four sessions a week, each lasting for about an hour. A combination of neurodevelopment therapy and sensory integration targeting the regulatory, orosensory, somatosensory, olfactory, and vestibular systems. Adjuncts like pro wraps, kinesio taping, Z-vibe brush, swiss ball, and sensory textured toys were also used. Initially, she was treated with entertainment and tactile stimulation targeting her bonding with objects and the surrounding environment. Following these mediums, plays were introduced to induce boundaries around her using water play, soil play, and different types of clothes. During these therapy sessions, a Z-vibe brush and sensory textured toys were introduced to provide sensory stimulation and target her sensory registration, arousal, attention, and response to stimuli by using only one object at a time. The concept of using one object at a time was introduced to give her time to register and explore the object using her tactile, visual, proprioceptive, orosensory, and auditory systems.

Her parents and caregiver were advised to relax and practice breathing techniques before engaging with her. This helped them to become less vulnerable to her dysregulatory behaviors. They were taught how to hold her close to their body, creating resonance and entrainment. Regulatory touch - connecting through voice-engaging with eyes. They were also asked to set boundaries using pillows while handling her, firm touch, voice modulation with eye contact, playing with medium, especially during bathing, dressing, or feeding, bedtime stories, and swaddling. It is equally important for a child with self-gratification that these home-based interventions are followed with vigilance assessment.

Ages and Stages Questionnaire (ASQ), Denver's score, and sensory profile were assessed at 8–9 months, 9–10 months, and 10–11 months.

ASQ-3

ASQ is a parent-reported initial level developmental screening instrument consisting of 21 intervals, each with 30 items in five areas which are personal social, gross motor, fine motor, problem-solving, and communication for children from 2 to 66 months. Table 1 shows the ASQ improved in all the domains, except for a slight reduction in the communication domain from baseline assessment at 8–9 months to the last assessment at 10–11 months [3].

Denvers' Developmental Score Test (DDST)

DDST is a formal developmental screening tool that assesses children from birth to 6 years of age in language, gross motor function, fine motor function, and personal social domains [4]. Table 2 shows relative development age was 5 months in language, 5 months at gross motor and fine motor function, and 3 months in personal social at 8–9 months of age. DDST scores were at 8 months in language, 8 months at gross motor and fine motor function, and 8 months in personal social at 9–10 months of age. DDST scores were 10 months in language, 9 months in gross motor, 12 months in fine motor function, and 8 months in personal social at 10–11 months of age. This means that rehabilitation was effective in development delays.

Sensory Profile

The Sensory Profile helps to understand a child's sensory processing patterns in everyday situations and profile the sensory system's effect on functional performance for diagnostic and intervention planning [5]. The tools' total score and the subsection scores can be used to classify children's sensory impairments into three categories: Typical Performance, Probable Difference, and Definite Difference. Table 3 shows that all domains had a typical performance at 8–9 months, 9–10 months, and 10–11 months except for tactile, vestibular, and orosensory which had definite differences initially and progressed to probable differences with sensory integration techniques. The tactile domain showed typical performance at 10–11 months.

DISCUSSION

Self-gratification disorder is a common presentation in children but can be difficult to diagnose as it is seen mostly in adolescents. It does not generally involve manual genital manipulation and its signs are variable in children, especially in infants and babies. This entity is usually misdiagnosed as a non-epileptic paroxysmal movement disorder, dystonic developmental delays, and gastroesophageal reflux disease [6]. As observed in our patient, she was initially diagnosed with dystonic developmental delay. A similar case study was observed in a case report by Ibrahim *et al.*, where an 18-month-old infant was earlier misdiagnosed with the epileptic disorder. Fleisher and Morrison in their case series where the most common misdiagnosis was repeated movement disorder [1].

Table 1: ASQ scores for 8–9 months, 9–10 months, and 10–11 months

Months	Communication	Gross motor function	Fine motor	Problem-solving	Personal social
8–9 months	15	30	0	35	5
9–10 months	40	30	15	40	10
10–11 months	35	55	50	55	35

ASQ: Ages and stages questionnaire

Table 2: DDST scores for 8–9 months, 9–10 months, and 10–11 months

Months	Language	Gross motor function	Fine motor	Personal social	Interpretation
8–9 months	5	5	5	3	2=Suspect (more than 2 delays)
9–10 months	8	8	8	8	2=Suspect (more than 2 delays)
10–11 months	10	9	12	8	1=No delays 1 caution

DDST: Denvers' developmental score test

Table 3: Sensory profile scores for 8–9 months, 9–10 months, and 10–11 months

Months	Auditory	Visual	Tactile	Vestibular	Orosensory
8–9 months	TP*	TP*	DD*>	PD*>	DD*>
9–10 months	TP*	TP*	PD*>	PD*>	PD*>
10–11 months	TP*	TP*	TP*	PD>	PD*>

The diagnosis of this anomaly can be difficult in infants or children as there may be repeated jerky spasms, normally confused with epileptic spasms. This can cause over-investigations to take place and occasionally lead the patient to be put on antiepileptic drugs, which can only make the situation only worse. The best possible diagnosis can be done by observing the clinical features and detailed history-taking [7]. Samia P *et al.* reported a few clinical features in children that include onset after 3 months and before 3 years of age; variable episodes of different frequencies; facial flushing along with diaphoresis; vocalizations like grunting; no changes in consciousness; crossing legs to put pressure on the perineum; easy distraction, and no findings in medical investigations and laboratory reports [8]. Our patient showed most of the signs namely grunting, crossing legs, and altered consciousness of self-gratification behavior, and the outcomes measures like ASQ, Sensory Profile and Denver's screening score were used as an outcome measure to follow up with developmental milestones or any impact of this behavior on overall development. ASQ and Denver's scales are used for detailed gross motor, fine motor, personal social and problem-solving development, and sensory profile measures individual sensory systems processing [3-5].

Treatment involves parent counseling and educating them to understand that this is normal behavior, and they will always outgrow it. The child can be made to understand that these activities are not appropriate in public places and even otherwise, in a gentle manner [9,10]. The children can be encouraged to participate in play activities as this will keep them distracted and active, which may be an important initiative to prevent these episodes. Scolding children can only instill a sense of wrongdoing and shame in them. A study describes the administration of sodium valproate, ethosuximide, phenobarbitone, vigabatrin, and ranitidine for this condition, which are antiepileptics.

We used rehabilitative interventions that included sensory integration and neurodevelopmental techniques to target the child's problems. These strategies can help to re-educate the child's sensory system to control or change self-gratifying habits. Additionally, stimulating the senses and all the other associated systems can help the child become more aware of the objects and the environment surrounding them. Over time, children can be more aware of their actions and have more focused routines as observed in a study where four children with self-gratification episodes were found to be at risk of attention deficit hyperactivity disorder.

The limitation of this case report is that we did not have enough video recordings to assess and understand the nature of self-gratification behavior in infants. We recommend more experimental studies using sensory integration and neurodevelopmental techniques for self-gratification in infants and children are needed.

CONCLUSION

This case report highlights the effectiveness of neurodevelopmental and sensory integration physiotherapy techniques to achieve age-appropriate gross motor, fine motor, personal-social, problem-solving, and sensory milestones for self-gratification behavior in children. Self-gratification behavior is a normal behavior in infants or children and is usually misdiagnosed with dystonic development delays, repeated movement disorders, or even epilepsy. Misdiagnosis can lead to many unnecessary investigations and even a not needed treatment protocol. Neurodevelopmental and sensory integration therapies along with parent counseling can be effective strategies to manage this behavior.

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