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A Case Study on Autism Spectrum Disorder with Low Level Attention

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Abstract
Autism spectrum disorder (ASD) is now more widely recognised in both the public and medical spheres. Developmental impairment known as autism spectrum disorder (ASD) is brought on by variations in the brain. Individuals with ASD may struggle with confined or repetitive activities or interests, as well as social communication and engagement. Moreover, people with ASD may learn, move, or pay attention in various ways. Due to the increased number of children and teenagers seeking earlier guidance, evaluation, and diagnosis, there is a strong need for services. All clinicians working with children, including primary care teams, allied healthcare professionals, educational and social care staff, must have a solid understanding of the presentation and assessment of autism spectrum disorders (ASD) and an understanding of the co-morbidities to maximise detection and minimise harm. There are standards in the identification, referral, and diagnosis of autism, even if entry points for referrals can change due to a variety of presentation and local service provision. In order to improve a child's potential, provide appropriate support, and implement focused interventions for ASD and co-occurring problems with the hope of improving outcomes, early identification is advantageous. This case study discusses autism spectrum disorder (ASD) diagnosis and offers professionals who come across a child with suspected ASD an assessment strategy.

Keywords : *Autism Spectrum Disorder, ASD, Low Level attention, Speech delay, Pivotal Response Training PRT, Discreate Trail Training, Behaviour Analysis.*

1.Introduction

Autistic spectrum disorders are a complex developmental disorder with social and communication dysfunction at its core. It has a wide clinical spectrum with a common triad of impairments — social communication, social interaction, and social imagination. Even mild or subtle difficulties can have a profound and devastating impact on the child, (Singhania, R., 2005). It is one of a group of neurodevelopmental disorders known as pervasive developmental disorders (PDD). These disorders are characterized by three core deficits: impaired communication, impaired reciprocal social interaction and restricted, repetitive, and stereotyped patterns of behaviors or interests. The presentation of these impairments is variable in range and severity and often changes with the acquisition of other developmental skills. (Faras., 2010) The new diagnostic criterion of ASD focuses on two core domains: social communication impairment and restricted interests/repetitive behaviors. The prevalence of ASD has been steadily increasing over the past two decades, with current estimates reaching up to 1 in 36 children. Hereditary factors, parental history of psychiatric disorders, pre-term births, and fetal exposure to psychotropic drugs or insecticides have all been linked to higher risk of ASD. Several scales such as the Childhood Autism Rating Scale (CARS), The Autism Spectrum Disorder–Observation for Children (ASD-OC). Nearly 75% of ASD patients suffer from comorbid psychiatric illnesses or conditions, which

may include attention-deficit hyperactivity disorder (ADHD), anxiety, bipolar disorder, depression, Tourette syndrome, and others. Both pharmacological and non-pharmacological interventions are available for ASD. Pharmacological treatments include psychostimulants, atypical antipsychotics, antidepressants, and alpha-2 adrenergic receptor agonists. These medications provide partial symptomatic relief of core symptoms of ASD or manage the symptoms of comorbid conditions. Non-pharmacological interventions, which show promising evidence in improving social interaction and verbal communication of ASD patients, include music therapy, cognitive behavioral therapy and social behavioral therapy. Hormonal therapies with oxytocin or vasopressin receptor antagonists have also shown some promise in improving core ASD symptoms, (Sharma., 2018). ASDs, similar to other neurodevelopmental disabilities, are generally not "curable," and chronic management is required. Although outcomes are variable and specific behavioral characteristics change over time, most children with ASDs remain within the spectrum as adults and, regardless of their intellectual functioning, continue to experience problems with independent living, employment, social relationships, and mental health. Neuropathologic studies are limited, but have revealed differences in cerebellar architecture and connectivity, limbic system abnormalities, and frontal and temporal lobe cortical alterations, along with other subtle malformations (Johnson CP & Myers SM., 2007), (Skefos J, et al 2014) (Stoodley CJ, et al., 2017). The primary goals of treatment are to minimize the core features and associated deficits, maximize functional independence and quality of life, and alleviate family distress. Facilitating development and learning, promoting socialization, reducing maladaptive behaviors, and educating and supporting families can help accomplish these goals. Ideally, interventions should help mitigate the core features of ASDs, which include impairment in social reciprocity, deficits in communication, and restricted, repetitive behavioral repertoire educational interventions, including behavioral strategies and habilitative therapies, are the cornerstones of management of ASDs. These interventions address communication, social skills, daily living skills, play and leisure skills, academic achievement, and maladaptive behaviors. (Howlin P, et al.,2005). ASD is a neurobiological disorder influenced by both genetic and environmental factors affecting the developing brain. Ongoing research continues to deepen our understanding of potential etiologic mechanisms in ASD, but currently no single unifying cause has been elucidated. (Seltzer MM., 2004). A small explorative study of neocortical architecture from young children revealed focal disruption of cortical laminar architecture in the majority of subjects, suggesting problems with cortical layer formation and neuronal differentiation Brain overgrowth both in terms of cortical size and additionally in terms of increased extra-axial fluid have been described in children with ASD and are areas of ongoing study both in terms of furthering our understanding of its aetiology, but also as a potential biomarker (Shen MD., et al., 2017), (Hazlett HC., et al 2017). The World Health Organization (WHO) estimates the international prevalence of ASD at 0.76%; however, this only accounts for approximately 16% of the global child population (Baxter AJ, et al, 2015). The Centres for Disease Control and Prevention (CDC) estimates about 1.68% of United States (US) children aged 8 years (or 1 in 59 children) are diagnosed with ASD (Baio J, et al, 2014), (Palinkas LA, et al., 2019). ASD occurs in all racial, ethnic, and socioeconomic groups, but its diagnosis is far from uniform across these groups. Caucasian children are consistently identified with ASD more often than black or Hispanic children (Baio J, et al., 2014). ASD is more common in males (Demily C, 2017) but in a recent meta-analysis (Loomes R, et al., 2017), true male-to-female ratio is closer to 3:1 than the previously reported 4:1, though this study was not done using the DSM-5 criteria. This study also suggested that girls who meet criteria for ASD are at higher risk of not receiving a clinical diagnosis. The female autism phenotype may play a role in girls being misdiagnosed, diagnosed later, or overlooked. Not only are females less likely to present with overt symptoms, but they are also more likely to mask their social deficits through a process called "camouflaging", further hindering a timely diagnosis (Volkmar F, et al, 2014). Several genetic diagnoses have an increased rate of co-occurring ASD compared to the average population, including fragile X, tuberous sclerosis, Down syndrome, Rett syndrome, among others; however, these known genetic disorders account for a very small amount of overall ASD cases. (Sztainberg Y & Zoghbi, 2016), (Johnson CP & Myers SM., 2007), (Reddy

KS, 2005), (Yoo H, 2015). Other risk factors for ASD include increased parental age and prematurity. (Durkin MS, et al., 2008), (Agrawal S, 2018), (Wang C, et al., 2017). This could be due to the theory that older gametes have a higher probability of carrying mutations which could result in additional obstetrical complications, including prematurity (Parner ET, et al.,2012)

Abbreviations: Autism Spectrum Disorder (ASD), Pivotal Response Training (PRT)

2. Case study

2.1 History:

A seven-year-old, only child, belonging to upper middle class was diagnosed with autism spectrum disorder. Her parents have reported that she was a very curious child and wouldn't sit in one place and according to them showed normal behavior. Maternal grandmother was a primary caregiver, and was the one who enrolled the patient to the school. Speech delay was present and was noticed but, no behavioral changes were noticed by the parents. The school teacher was the one who identified and reported to the parents about behavioral difficulties the child showed during class hours. The parents were in complete denial and did not encourage the need to go to a psychiatrist for the diagnose and treatment. Only when the school decided to discontinue, is when the parents agreed to send her for consultation and followed by therapy. she has below average level of attention and social functioning that is currently affecting her schooling. The child has poor understanding of social relationship and prefers to stay alone. There is a strong presence of repetitive behavior in the child. There is no history of any complicated sexual abuse, trauma, physical or psychiatric illness present in the mother during pregnancy or after. Her formal schooling commenced at age 3, In the 1st grade her mother was the shadow teacher which led to fluctuation and deuteriation of behavior, this led to discontinuation as advised by the school counsellor. During class observation, it is seen that the child finds it difficult to stay with the group and follow activities, poor social understanding was present, unable to comprehend what was asked, difficulty in command following, screaming during class and couldn't share space with other kids. The child likes general knowledge, visuals, building blocks, painting and likes exploring new things. The child is able to perform the activities of daily living independently and needs minimal assistance from the mother.

The mental status examination revealed that eye contact was not maintained, stimming behavior was seen, quantity of speech is reduced and inappropriate and tone is varying, attention and concentration was seen to be intact, child is oriented with place and person, immediate memory is intact. Reaction time is slow, and no compulsive acts are present. The child's insight into illness was grade "one".

2.2 Clinical features:

The child presented with complains of communication, reasoning and social difficulties, understanding social norms and comprehension. Mode of onset was gradual. The dominant symptom during time of admitting was restlessness and very low attention span. The vineland social maturity scale test done indicates that the child has below average social functioning. The client has deficits in the areas of self-help, self-direction, locomotion, and socializing. Colour cancellation test indicates below average level of attention. Speech and language assessment report – presenting complaints of delayed speech, poor eye contact, poor listening skill, difficulty answering questions and poor social interaction. Child is seen to have a delay in receptive and expressive language and her communication is not age appropriate.

2.3 Past Treatment history:

One year of speech therapy at age 5 years, 6 months of behavioral therapy and speech therapy started again at age 6 and continuing till date.

2.4 Intervention:
Psychoeducation, motor skills, cognitive skills, social communication, and behavioral skills intervention is done.

2.5 Psychoeducation:
Educating the parents about the mental health condition and emphasis on personal copying ability and discussion of strategies, emphasis of the child's areas of strength and discussion of how therapy would help and informing them about how goals are setup up according to child's need and the need for consistence. On further intervention, it was found out that, parents are in denial about the child's diagnosis and only due to the school's force regarding admission they are sending the child to therapy. The caregivers are also informed about the certain positive reinforcements that need to be done at home for stabilizing the child's environment.

2.6 Motor skills:
The first therapy session included penning simple sentences and tracing alphabets to increase hand-eye coordination and space. After positioning the forms correctly, beading was done. These tasks can now be completed by her without assistance or reinforcements. The development of all motor skills has been quite positive.

2.7 **Cognitive skills:**
When it comes to picture description, she took some time to grasp the concept and still requires frequent reinforcements while engaging in this activity. She is very knowledgeable about object and colour recognition as well as identifying body parts, but she frequently struggles to respond without being motivated. The therapy session included coloured pattern puzzles, which she was only taught once and then could complete without assistance. She is able to recite the numbers on her own, but she does so very quickly without pausing in between them. It took her some time to comprehend how to construct 2-3 sentences about an object, but now that we have asked her to do so, she can give at least 1-2 sentences. The child frequently combines one or two stories when narrating tales. The entire level of cognitive ability needs to improve and be age appropriate.

2.8 Social communication and behavioural skills:
The child uses one word to communicate basic requirements and repeats it until the need is satisfied. Asking "WH" inquiries and saying "hello" to everyone in the centre will help the kid develop social skills. The sessions are focused on turn-taking activities and requesting; the child is unable to request on her own and can only do so when prompts are given. Even though the youngster is forced to participate in group games and activities, she still prefers to play alone and finds it challenging to share her space. She resists sitting for the session and we can only force her to do so by using reinforcements. Otherwise, she keeps getting up and leaving.During group plays it is seen that she tends to hug other kids very tightly and doesn't let go unless separated. Overall social communication of the child is extremely poor and behavioral skill need a lot of work and improvement.

3.**Discussion**
Autism spectrum disorder is developmental disability that affects the way they behave communicate, interact and learn that are ways different from most people. ASD begins before the age of 3 years and can last throughout a person's life, although symptoms may improve over time or sometimes worsen depending on environmental factors. In some cases, ASD is seen to show only after 24 months only. This condition affects the child academics, occupation and social life. Child has been diagnosed for ASD few months back until then there were only red flags of autism spectrum disorder. The child has been going to normal school along with the shadow teacher and is seen to have behavioral difficulties in school. The

parents are authoritarian, and the child is scared of them. The progress is fluctuating. There is no presence of childhood trauma and physical abuse. For management of the symptoms, psycho education, cognitive behavioral and speech therapy is taking place. The child needs constant support and attention of the parents and needs more time in therapy. Child needs to work on socializing skills, behavior management and improving of cognitive abilities. she shows great interest in general knowledge and puzzles.

4. Recommendation

- Applied behavioural analysis may prove to be helpful to discourage undesired behavior to improve variety of skills.
- Discrete trail training which is useful as they break down complex things into simpler steps, desired answers and behaviors are rewarded.
- Pivotal Response Training (PRT) PRT is to improve a few "pivotal skills" that will help the person learn many other skills.
- Social relationship approaches that include social stories and social group activities that provide opportunities to learn socially appropriate behavior.
- Healthier and positive home environment that plays a major role in stabilizing the child's symptoms.

5. Conclusion

ASD is associated with behavioural and cognitive traits that ASD and low-level attention that share or differ in can lead to a few tentative conclusions such as the key characteristics or symptoms of ASD and attention frequently co-occur, and the likelihood of this co-occurrence rises with age, and symptom severity, thus relating to poor level of understanding Although behavioural, cognitive, and sensory correlates of ASD and low attention somewhat differ from one another, attentional issues serve as a connecting thread to even behavioural issues. Consistent therapies to improve and creating a conducive environment along with the family support would be an ideal condition to create a fair lifestyle for the child.

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