

Developmental Delay, Hyperactivity and Mania: A Perfect Blend of Confusion in a Preschool Child

Sir,

Attention deficit hyperactivity disorder (ADHD) co-occurring with pediatric bipolar disorder (BD) has been controversial. Researchers have proposed hypotheses about the spectrum concept of ADHD and pediatric BD and that ADHD could be a precursor of BD.^[1] Clinically, both the illnesses share symptoms of hyperactivity, distractibility, and irritability. ADHD has been associated with a higher risk of earlier onset of BD.^[2] Despite the high comorbidity and risk, a significant number of ADHD with pediatric BD cases remain underdiagnosed.^[1]

CASE DETAILS

A 5-year-old boy presented with complaints of reduced sleep since 6 months of age, increased activity levels since 1 year of age, and irritability since 3 years of age. Antenatally, the mother had pre-eclampsia. However, child-birth was normal, and he attained developmental milestones as per age for the first 6 months (e.g., social smile by 2 months, head control by 2–3 months, and ability to turn by 6 months). Thereafter, the mother observed a reduction in his sleep time from 12 h/day to $\leq 6-7$ h/day. Delay in acquiring language, recognizing mother, and make-believe play, and deficits in emotional reactivity were noted till the age of 1 year.

However, he learnt to fetch things for self, to reach out for objects, some level of hand-eye coordination, and the ability to shift things from one hand to the other.

He started walking at the age of 12–18 months, but within a few months, he was observed to be walking at a faster pace, though he would not hurt self. His activity levels were reportedly more than children of his age. He avoided eye contact, attained babbling only, and continued with less than normal sleep hours. Recognition of parents and bi-syllable words in the speech were attained at the age of 2.5 years. Parental efforts to teach him language were futile and vocabulary did not improve beyond 5–6 words. Since 3 years of age, his activity levels had increased to an extent that it was impossible to make him sit. He was not amenable to any form of training in view of lack of attention and easy distractibility. He was fussy about food but could eat himself. He did not achieve any meaningful play activities, avoided other children of his age, and preferred solitary play with inanimate objects. These complaints were also the reason for drop-out from school within 6 months of enrollment.

For the last 2 years, further worsening of symptoms, in the form of predominant irritable mood, inappropriate laughing without any stimulus, and increase in demand

for eatables, was observed. Refusal to entertain his demands would be met with aggression. Activity levels also increased to an extent that it often necessitated physical restraint. His sleep hours remained 3–4 hours at night. Moreover, parental burn-out was also observed.

EXAMINATION AND MANAGEMENT

Physical examination was unremarkable. Mental status examination revealed irritable affect, marked hyperactivity, poor content of speech, and lack of eye contact. Physical investigations including hemogram, blood biochemistry, thyroid profile, urinary copper levels, anti-streptolysin O titers and magnetic resonance imaging (MRI) of the brain were normal. Social quotient measured on Vineland Social Maturity Scale revealed borderline intelligence, and the score on Indian Scale of Assessment of Autism was 45 that ruled out autism. He was diagnosed with ADHD, borderline intellectual functioning, and mania as per the DSM-5. Exclusion approach was used to subtract features common to ADHD and mania such as hyperactivity, inattention, and intrusiveness. Apart from these common symptoms, psychomotor agitation, over-demanding, decreased need for sleep, and persistent irritability (though the evidence is conflicting)^[3,4] were suggestive of mania.

Previously, he did not tolerate methylphenidate, and trials of atomoxetine and risperidone had not yielded any benefit. Therefore, we put him on sodium valproate (20 mg/kg) and clonidine (200 µg/day). Significant improvement in mood and activity was noted about 3 days after starting the medications, with Young's Mania Rating Scale (YMRS) and Connor's Abbreviated Rating Scale (CARS) scores improving from 23 and 30 at baseline to 15 and 22, respectively. At the end of 6 weeks of treatment, the patient was euthymic and significant improvement in hyperactivity and inattentiveness was noted, with YMRS score of 7 and CARS score of 13.

DISCUSSION

The index case offers several unique learning points highlighting the diagnostic dilemmas and treatment challenges faced in a very young child with developmental delays and ADHD who presented with BD. These aspects are briefly discussed here.

ADHD and BD in childhood

There are a few reports of mania occurring in children as young as 3 years of age. In a previous case series of mania in six children aged between 4 and 5 years, three had BD comorbid with ADHD.^[5] Similarities between

these cases and the index case included early onset of sleep disturbances, history of speech delay, poor response to methylphenidate, persistent irritability, and marked hyperactivity. The phenomenology of pediatric BD differs from that of adult-onset BD as the former has predominant irritability, continuous course of illness, and lesser frequency of well-formed delusions of grandiosity, and the course of mania in children with ADHD is largely chronic, with greater functional impairment.^[6,7]

Moreover, the use of methylphenidate in patients with ADHD with BD has been controversial.^[8] Further, consistent with the available evidence of efficacy of sodium valproate in the management of acute mania and that of clonidine for both ADHD and mania, we got an excellent response in the index child by utilizing both these agents.^[9]

ADHD and developmental delay

ADHD, a neurodevelopmental disorder, shares many neurobiological, neuropsychological, and clinical features with autism, global developmental delay, and intellectual disability. Moreover, in addition to the core symptoms of ADHD, a lot of children present with multiple developmental delays in the form of deficits in language skills, pragmatic language, and motor and social skills.^[10] However, most available evidence does not suggest whether the developmental delays/disorders observed in children with ADHD are a precursor or a consequence of ADHD. Hence, the corollary of “chicken or the egg” may be suitably utilized in this scenario.

CONCLUSION

Psychiatrists and pediatricians must be sensitized about the co-occurrence of ADHD and BD in very young children.

Declaration of patient consent

The authors certify that they have obtained all appropriate patient consent forms. In the form the patient(s) has/have given his/her/their consent for his/her/their images and other clinical information to be reported in the journal. The patients understand that their names and initials will not be published and due efforts will be made to conceal their identity, but anonymity cannot be guaranteed.

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Conflicts of interest

There are no conflicts of interest.

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