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Case report

Bipolar disorder in a 12-year-old: the first manic episode in early-onset bipolar disorder can be atypical

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Abstract: The diagnosis of early-onset bipolar disorder (EOBD) remains a major clinical challenge due to overlapping symptoms with other childhood psychiatric conditions and its divergence from adult presentations. There has been significant controversy over the phenomenology of EOBD due to the "Pediatric Bipolar Disorder" (PBD) proposed phenotypes, which, unlike adult mania, are often characterized by chronic irritability, affective instability, and mixed mood states rather than episodic euphoria. This case report presents B., a 12-year-old boy admitted for suicidal ideation and severe mood dysregulation. His history revealed early hyperactivity, oppositionality, progressive social withdrawal, somatic complaints, and persecutory ideation. Clinical assessment identified a major depressive episode with mixed features, supported by psychometric evidence of affective, anxiety, and somatic symptoms, as well as a cyclothymic–hypersensitive temperament. Treatment with lithium salts and aripiprazole led to significant clinical improvement, confirming the bipolar spectrum nature of his disorder. This case underscores the complexity of diagnosing "hidden bipolarity" in children, where irritability, anxiety, and subthreshold manic symptoms may obscure bipolar pathology. Although bipolar disorder was significantly overdiagnosed in prepubertal children in the past, B.'s case illustrates that rare peripubertal presentations can indeed manifest the phenomenological features described in the pediatric bipolar disorder literature.

Keywords: Bipolar disorder; pediatric psychiatry; pediatric bipolarity; differential diagnosis; adolescent; comorbidity; mixed states

1. Introduction

The diagnosis of early-onset bipolar disorder remains a significant challenge in clinical practice, primarily due to the substantial symptomatic overlap between mood features and other common childhood psychiatric conditions. Historically, three perspectives on the phenomenology and epidemiology of EOBD have competed for validity: 1) The first manic/hypomanic episode is post-pubertal, mostly in late adolescence to young adulthood; 2) mania/hypomania presents with prolonged ultradian cycling of mood states often from very early childhood; 3) mania/hypomania presents with chronic irritability often from very early childhood. The latter two perspectives were initially raised by Davis [1] (1979) and Akiskal [2] (1985), with prepubertal cohorts described by Geller et al. [3] (1994) and Wozniak et al. [4] (1995). These gained wide acceptance in the USA, with higher rates of clinical diagnosis compared with other jurisdictions, where the first historical perspective remained dominant [5].

A great body of literature has sought to delineate the distinctive clinical features of the chronic irritability and ultradian cycling pediatric bipolar disorder (PBD) phenotypes, focusing on how pediatric presentations diverge from adult standards in terms of mood symptoms, clinical course, and comorbidities. As noted above, Akiskal et al. [2] (1985) provided a seminal contribution by suggesting that pediatric mania frequently appears atypical when measured against adult diagnostic criteria. Specifically, the hallmark euphoric mood of adult mania is rarely observed in children; instead, severe and persistent irritability serves as the primary mood disturbance. These outbursts, characterized by intense psychomotor agitation, have been termed "affective storms" due to their aggressive and prolonged nature [1]. According to the third view of the condition (chronic irritability phenotype PBD), unlike the episodic and acute nature of adult mania, pediatric presentations were described as following a more chronic and continuous trajectory [6,7]. However, the validity of a distinct "prepubertal bipolar" phenotype, as proposed by Geller et al. [3] (1994) and Wozniak et al. [4] (1995), has been increasingly scrutinized. An argument, built for the first historical perspective of adolescent/adult-onset BD, is that bipolar disorder (BD) is highly heritable [8,9] and children within these highly penetrant cohorts (such as the Amish and Canadian samples) would be the most likely to manifest a prepubertal form of the illness. On the contrary, the absence of such a phenotype in these high-risk groups suggests that the symptoms often labeled as prepubertal bipolar disorder may lack diagnostic validity. Furthermore, certain mania-like symptoms in youth, such as risk-taking or intense romantic attraction, are often endorsed by the general adolescent population as normal developmental variants rather than markers of a bipolar diathesis [10].

A critical complication in diagnosing pediatric bipolarity remains the misinterpretation of irritability, which is a frequent symptom in many childhood disorders, including ADHD, oppositional defiant disorder, and autism [11]. Irritability remains a cardinal but poorly defined symptom; originally associated with depression, it was removed from adult criteria but retained for children despite scholarly disagreement [12]. Carlson and Klein [13] (2014) identified that a primary source of diagnostic divergence is the frequent confusion between ADHD and mania. Children with ADHD often exhibit low frustration tolerance, currently labeled as irritability, which is frequently misinterpreted as the mood lability unique to bipolar disorder. This is compounded by a lack of developmentally informed criteria; unlike ADHD, which evaluates symptoms relative to developmental level, there is no established baseline for "appropriate" euphoria in young children, where imaginative play may be misinterpreted as pathology [14]. As said by Connors [15] (2023), the

diagnostic tendency to pediatric bipolar disorders reflects a broader trend toward biological reductionism, where a hypothesized cluster of clinical features is prematurely elevated to the status of a distinct, biologically determined entity. This process occurs despite significant evidence of "unclear boundaries, heterogeneity across patients, and limited continuity over time" [15].

Drawing from extensive international data, a general model has emerged supporting a progressive, staged sequence of psychopathology rather than an abrupt prepubertal onset. This trajectory typically originates in childhood with nonspecific antecedents, such as sleep disturbances, anxiety, and sub-clinical affective symptoms, which hold distinct prognostic significance for high-risk children. These symptoms often evolve into minor depressive and adjustment disorders during early adolescence, before transitioning into major depressive disorder (MDD) and hypomanic symptoms by mid-adolescence [16,17]. Notably, the conversion from MDD to a formal BD diagnosis, which typically culminates in late adolescence or early adulthood, is significantly more likely if the depressive episodes are recurrent or characterized by psychotic features [16,18]. The propensity for PBD to debut as a depressed or mixed state often leads to it being misdiagnosed as unipolar MDD. Periods of depression frequently outnumber time spent with hypomanic symptoms, and the hypomania itself may be mistaken for ordinary happiness or healthy functioning [19]. Given that, the treatment of pediatric bipolar depressive episodes is exceptionally complex, often requiring combinations of medications. Inappropriate pharmacological intervention, particularly with antidepressants in the absence of mood stabilizers, carries the potential for inducing mania, hypomania, or rapid cycling [20]. Given the diagnostic challenges and atypical clinical presentations of pediatric bipolar disorder, we selected the case of B. to illustrate the complexity of early-onset mood dysregulation. B. was admitted to the Child and Adolescent Psychiatry Ward of Regina Margherita Hospital in Turin, Italy, in 2019, at the age of 12.

2. Case presentation

2.1. Anamnestic notes

No impairments in neuropsychomotor development were reported. Parents did not report integration problems within the class group during kindergarten years; however, the teachers reported a tendency to hyperactivity and oppositionality. Integration with peers progressively deteriorated during primary school and at the start of secondary school. B. often avoided intra- and extra-school group activities, with a social withdrawal that gradually became more and more marked. Between the end of primary school and the start of secondary school, the parents said that B. frequently appeared gloomy and irritable. Alongside these emotional aspects, B. developed persecutory ideas against parents and peers. At the same time, the child began to verbalize over-threshold anxiety levels, also complaining of somatic symptoms (frequent abdominal pain), which led to multiple visits to the ED and private outpatient visits in order to exclude organic conditions. All the instrumental exams were negative. Parents reported a tendency to hyperphagia, which caused a progressive weight gain (binge eating conduct).

Since December 2018 (the first year of secondary school), parents reported a progressive worsening in school performance (always adequate during primary school). B. described a subjective sense of asthenia and a persistently deflected mood. Attending school became tiring. During this period, the recurrence of somatic complaints became more frequent (abdominal pain). In June, B. was sent to

the territorial Outpatient Service for Child and Adolescent Neuropsychiatry for suspected dyscalculia. After being taken in by the territorial Outpatient Service (September 2019), depressive symptoms worsened again, with the emergence of instances of self-depreciation and ineffectiveness. B. became less and less communicative, also showing a tendency to daytime hypersomnia. He was prescribed Quetiapine 25 mg/day and Delorazepam up to 2 mg/day. School attendance became intermittent.

During October 2019, after a brief period of improvement, the boy began to verbalize self-damaging and anti-conservative ideation. After B.'s verbalization of a serious anti-conservative will ("to strangle himself with a plastic package tape"), he was sent to the ED of the Regina Margherita Hospital of Turin.

Family history: the mother suffered from bipolar disorder type II, treated with valproic acid and trazodone. The maternal uncle was diagnosed as schizophrenic. The paternal uncle was hospitalized for a psychotic episode and treated with olanzapine. The paternal grandmother suffered from anxiety-depressive syndrome, treated with antidepressants. The father reported two suicides among his relatives.

2.1.1. Clinical course

B., a 12-year-old male, was admitted to the Child and Adolescent Neuropsychiatry ward in October 2019. At the time of admission, he reported persistent suicidal ideation, describing a continual preoccupation with thoughts of self-harm. His thought patterns appeared rigid and distorted, characterized by ideas of reference and persecutory delusions. B. also presented with mood instability, marked by rapidly fluctuating mood states, incongruent with external circumstances, and oscillating between a sub-continuous irritability and depressive symptoms (such as feelings of inadequacy, self-depreciation, emotional blunting, and abulia). B. also exhibited moments of euphoric mood, with increased talkativeness, racing thoughts, and hyperactivity. His persecutory beliefs extended to family members, peers, and various aspects of daily life. Additionally, B. reported experiencing perceptual disturbances, including visual and auditory hallucinations, especially during depressive mood fluctuations, such as "seeing confused shapes" and "hearing the voices of relatives". In these states, he frequently engaged in superficial self-harm behaviors, such as scratching his forearms. The boy displayed significant discomfort in social and group contexts, such as during meals with other patients or while participating in educational in-ward activities. This anxiety-avoidant behavior was exacerbated by his mood fluctuations. In light of these symptoms, we initiated treatment with lithium sulphate, 83 mg twice daily, aimed at stabilizing his mood. Due to his thought distortions, we also introduced aripiprazole, titrating the dose to 10 mg/day over the course of one week. As the hospitalization progressed and the therapeutic regimen reached the appropriate therapeutic range, significant improvements were observed. B.'s mood became more stable, and his persecutory ideas diminished considerably, with a notable reduction in delusional thinking. As his mood stabilized, he was able to articulate more positive thoughts about his future, showing a significant decrease in negative and self-destructive ideation. During the hospitalization, a gradual reintegration into school was planned. Despite initial concerns, B. reported a warm reception from his peers and was able to engage in daily routines with fewer difficulties. After nearly one month of hospitalization, B. was discharged, showing considerable improvement in both mood and functioning.

2.1.2. Diagnosis

We decided to administer to B. and his parents some psychometric tests:

The Child Behavior Checklist (CBCL), completed by the father, showed B.'s total competence score in the clinical range below the 10th percentile. F.'s total problems, internalizing, and externalizing scores were all in the clinical range. Compared to parents of boys aged 12–18, the father reported more problems, especially anxiety or depression, withdrawn or depressed behavior, somatic complaints, social difficulties, thought and attention problems, rule-breaking, and aggressive behavior. B.'s attention deficit/hyperactivity problems score was normal, while his affective, anxiety, somatic, and conduct problems scores were in the clinical range (above the 97th percentile), suggesting a DSM consultation for possible affective, anxiety, somatic, and conduct disorders.

The CBCL, completed by the mother, showed B.'s total competence score in the clinical range below the 10th percentile, total problems score in the borderline clinical range, internalizing score in the clinical range, and externalizing score in the normal range. Compared to parents of boys aged 12–18, she reported more problems, especially anxiety or depression, and withdrawn or depressed behavior. B.'s affective problems score was in the clinical range, and his post-traumatic stress problems score was in the borderline clinical range (93rd–97th percentiles), suggesting a DSM consultation for possible affective disorders.

Additional psychological assessments were administered to further explore B.'s temperament, character, eating-related attitudes, and depressive symptomatology.

Temperament and Character Inventory (TCI): The temperament was characterized by low novelty seeking, low harm avoidance, and high reward dependence. This temperament pattern was compatible with a cyclothymic profile. Regarding the character, B. showed low autodirectivity, very low persistence, low cooperativity, and low autotranscendence.

Eating Disorders Inventory (EDI-II): B. showed pathological values on the scales for bulimia, body dissatisfaction, ineffectiveness, interpersonal distrust, impulse regulation, and social insecurity.

Beck's Depression Inventory (BDI-II): The test showed the presence of cognitive and somatic depressive symptomatology (above the 99th percentile).

2.2. Discussion

The clinical course and presentation of B. at the time of admission strongly suggested a major depressive episode with psychotic features, as outlined by the DSM-5 criteria (American Psychiatric Association, 2013) [21]. B. exhibited hallmark depressive symptoms, including a predominantly low mood, feelings of inadequacy, emotional numbing, and persistent suicidal ideation. Simultaneously, he displayed moments of psychomotor agitation in the form of hyperkinesia, increased talkativeness, and racing thoughts, features indicative of symptoms of the opposite polarity within a mixed presentation (American Psychiatric Association, 2013) [21]. Furthermore, the presence of significant thought distortions, such as persecutory delusions and ideas of reference, alongside auditory and visual hallucinations, highlighted a complex psychotic presentation where depressive and manic-like symptoms overlapped (explained in Solè et al., 2017 [22]). These fluctuations in mood, coupled with anamnestic reports of irritability and overactivity, aligned with the DSM-5 framework for mixed features occurring within a single mood episode (American Psychiatric Association, 2013) [21].

However, B.'s case must be understood within a contemporary developmental framework that moves beyond cross-sectional checklists.

It is increasingly recognized that the historical interpretation of the prepubertal bipolar patient, once heavily defined by concepts of chronic irritability and "ultradian" cycles of mood instability, no longer stands under the scrutiny of contemporary prospective research [10]. As previously noted, the contemporary understanding of bipolar disorder emphasizes a staged developmental trajectory rather than a sudden onset. This progressive sequence is characterized by early sleep and anxiety disturbances transitioning into adolescent depression [10,16]. Furthermore, early depressive episodes, particularly those with recurrent or psychotic features, often serve as the formal debut of the illness, and clinicians have to use a "longitudinal lens" to better differentiate these high-risk trajectories from nonspecific childhood irritability [17,18]. Within this theoretical framework, B.'s presentation of psychotic depression and early anxious-somatic symptoms was highly suggestive of a bipolar diathesis. This "early-onset anxious bipolarity" may represent a specific phenotype where anxiety disorders precede the formal mood disorder in an initial "internalized" phase [23,24]. His "emotional fragility" and distorted perception of interpersonal stressors, manifesting as "psychotraumatic" attributions, aligned with a cyclothymic-hypersensitive temperament (CHT), a known endophenotype of bipolarity linked to both depression and suicidality [25].

In light of the developmental framework, B.'s significant familial loading for mood and psychotic disorders serves as a robust and well-validated risk factor [26]. As previously said, while longitudinal high-risk offspring studies demonstrate that a hereditary background does not guarantee the development of the disorder, B.'s specific clinical presentation is noteworthy. The combination of hereditary vulnerability, early mood instability, an anxious prepubertal phenotype, and overt psychotic features aligns with the "staged" sequence of psychopathology discussed earlier. These factors collectively confirm a high-risk profile that necessitates careful, longitudinal monitoring to differentiate emergent bipolarity from other developmental trajectories.

Therapeutic options for bipolar disorder and mixed depression in adolescents include mood stabilizers, primarily lithium salts [27], which in Italy are approved from 12 years of age and considered as a first-line treatment for bipolar disorders. Among the atypical antipsychotics, aripiprazole has approved indications for manic episodes and for manic relapses from 13 years old, but it has shown effectiveness in mixed states [28] and in reducing mood symptoms in people at high risk of developing bipolar disorder [29]. The therapeutic response served as a critical "quasi-biomarker" [17]. B.'s stabilization on lithium and aripiprazole supported the bipolar spectrum diagnosis; lithium, in particular, was indicated for its unique efficacy in reducing suicide risk [30], while aripiprazole effectively managed his delusional thinking, also adding nonspecific sedation effects.

Ultimately, regarding the longitudinal course of the condition, B.'s presentation allows for several distinct diagnostic trajectories as he transitions into adulthood. While his current stabilization on mood stabilizers suggests a pathology consistent with bipolar disorder, the prominence of persecutory delusions and hallucinations raises the hypothesis of an evolution toward schizoaffective disorder. Distinguishing between these outcomes will require careful and longitudinal observation to determine if psychotic symptoms eventually persist independently of mood episodes or remain strictly confined to periods of affective instability. Furthermore, in the differential diagnosis of such pediatric presentations, it is critical to consider organic etiologies, specifically autoimmune encephalitis such as anti-NMDA receptor encephalitis. While B.'s clear anamnestic progression and significant family history of psychiatric illness strongly favored a primary psychiatric etiology, which guided the initial

clinical focus, the exclusion of these neurologic conditions remains a clinical priority in pediatric cases involving rapid-onset psychosis and severe mood dysregulation.

Diagnostic conclusions: Major depressive episode, mixed presentation.

3. Conclusions

Current evidence for affective disorders in prepubertal subjects supports a staged sequence of psychopathology with mania/hypomania only beginning in post-puberty. This evidence negates the PBD hypothesized phenotypes of common prepubertal onset. However, B.'s case indicates that EOBD in peripubertal children can include the ultrarapid cycling of mood and prominent irritability that B. displayed. B.'s progression from early somatic complaints and social withdrawal to mid-adolescent psychotic depression mirrored a high-risk phenotype. His trajectory reflected a developmental framework where nonspecific childhood anxiety and sleep disturbances evolved into complex affective states. This atypical mixed affective presentation underscores the need for a holistic conceptualization that integrates genetic predisposition and temperament. Ultimately, this approach is essential for ensuring that early interventions are appropriately tailored to the evolving psychopathology of high-risk adolescents.

Use of AI tools declaration

The authors declare they have not used Artificial Intelligence (AI) tools in the creation of this article.

Ethics approval and consent to participate

Ethical committee approval was not required for this case report, as it involved a retrospective review of a single patient with all identifying information removed to ensure confidentiality. Informed consent was obtained for the publication of this case report and the clinical data involved.

Author contributions

Marco Marzolla: Conceptualization, Clinical investigation, Writing – review & editing; Marzia Porro: Clinical investigation, Data curation, and Writing – review & editing.

Conflict of interest

The authors declare no conflict of interest.

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