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Case Report

Title: A multidisciplinary approach in diagnosing children with autistic traits and multiple behavioural issues: a case report

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Mini-biography (100 words)

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Summary of article: The diagnosis of Autism Spectrum Disorder (ASD) in the Diagnostic and Statistical Manual of Mental Disorders (DSM)-5 criteria is based on a constellation of symptoms overarching social and communication deficits, behavioural issues, and stereotyped motor and sensory abnormalities. Some studies have raised concerns about overdiagnosis and misdiagnosis of ASD, likely due to the overlapping symptoms of ASD and other psychological and behavioural disorders. This case emphasises the importance of an integrated multidisciplinary diagnostic approach for ASD diagnosis as a single consultation is usually insufficient for paediatricians to reach to the conclusion of ASD. With valuable inputs from different disciplines, including psychology and speech therapy, paediatricians can have a better picture of a child's underlying issues and provide a more effective management plan for the family.

(125 words)

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Three learning points:

1. ASD is not a straightforward diagnosis that can be simplified by a set of symptoms; a multidisciplinary approach is the future direction in assessing children with suspected ASD.
2. Specific screening and diagnostics tests focusing on speech, social interaction, and cognition, are valuable tools in excluding differential diagnoses and detecting underlying factors that could mimic ASD-related symptoms.
3. The integrated multidisciplinary approach is crucial in providing an appropriate long term management plan, even for children who not qualify for the ASD diagnosis.

A multidisciplinary approach in diagnosing children with autistic traits and multiple behavioural issues: a case report

Abstract

The diagnosis of autism spectrum disorder (ASD) among children with suspected autistic traits and behavioural problems is increasingly common. Due to the common features of ASD and other psychological and behavioural disorders, health professionals are faced with complex diagnostic challenges when outlining the clinical history behind a child's presenting symptoms. To accurately exclude potential differential diagnoses, health professionals are required to consider a myriad of underlying factors. Parental stress and psychosocial issues can lead to autistic-like behavioural problems in children, and vice versa. This report presents a case of an eight-year-old girl who presented with long-standing anxiety and multiple behavioural issues, which were suspected to be related to ASD. She was referred to the developmental clinic for an integrated multidisciplinary diagnostic workup and assessment to determine if she fulfilled the criteria for ASD. With a detailed review and appropriate assessments, her overall symptoms did not meet the Diagnostic and Statistical Manual of Mental Disorders 5 diagnostic criteria of ASD. In fact, the multidisciplinary team came to a joint conclusion that parental stress and social isolation were the leading causes of the child's presenting issues. This case emphasises that a single consultation is usually insufficient for health professionals to reach the conclusion of ASD. By highlighting specific screening and diagnostics tests focusing on speech, social interaction, and cognition, this case report underlines the importance of these valuable tools in excluding differential diagnoses and detecting underlying factors that could mimic ASD-related symptoms.

Introduction

Diagnosing autistic spectrum disorder (ASD) is a challenging task for health professionals as the diagnostic approach is mainly based on a constellation of symptoms, including reciprocal social communication deficits, and restrictive and repetitive behaviours [1,2]. The prevalence of ASD has risen since the introduction of the Diagnostic and Statistical Manual of Mental Disorders 5 (DSM-5) criteria, which has raised concerns of overdiagnosis and misdiagnosis of ASD from several studies [1-3]. While a diagnosis of ASD is necessary for government subsidies for autism-related services, the social stigma attached to a misdiagnosis may negatively impact the children and their families [1-2,6-10]. Furthermore, a misdiagnosis will result in unnecessary therapies for the child, while a missed diagnosis will lead to a suboptimal follow-up and management for the child's behaviour. Thus, it is important to improve the accuracy of ASD diagnoses by taking a multi-disciplinary approach. Integrating inputs from different disciplines, including developmental paediatrics, psychology, and speech therapy, may provide a more thorough understanding of why a child presents with ASD-like symptoms to inform an effective management plan [9].

Case report

May* was an 8-year old girl who presented with long-standing anxiety, multiple autistic traits, and behavioural issues, including temper tantrums and pica (rock-eating behaviour). May's paediatrician referred her to the developmental paediatric clinic for an assessment of ASD-related concerns. An integrated multidisciplinary diagnostic approach was conducted, which includes a comprehensive medical review completed by a developmental paediatrician and several assessments conducted by allied health professionals, including a child psychologist, occupational therapist, social worker, and case manager.

Background

May lived with her biological parents, Sophie* and John*, one elder half-sibling, and four younger siblings in regional Victoria. As the family recently moved from a metropolitan suburb in Melbourne earlier this year, there were some delays in May attending her new school in regional Victoria. Her parents had not had a stable income since relocating. John was not present throughout the interviews due to his new job, while Sophie was still looking for job opportunities. Sophie explained that their home situation was challenging due to the lack of childcare support.

Presenting issues

1. Anxiety and pica behaviour

May had a history of anxiety from the age of two. May had always been anxious and easily distressed by normal daily activities, in particular, getting changed to leave home, having breakfast before going

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to school, and playing with toys with siblings or similarly-age friends. According to Sophie, May soothed her distress by sucking on her pacifier until the age of five. When May turned five, Sophie started noticing May's rock-eating behaviour whenever May got highly anxious during social activities. She found rocks in May's stools on several occasions when May complained of abdominal pain.

2. ASD-related concerns: social communication deficits and restrictive repetitive behaviours, interests or activities (RRBIs)

From a young age, May preferred to be alone and liked to stay in her room even during family gatherings. According to her mother, she was deemed to be 'rude' by relatives because she had difficulty understanding social cues and manners. However, May was able to maintain good eye contact and non-verbal communication. May did not have difficulty developing new relationships and had started making friends at her new school.

During an individual interview with Sophie, she reported May had shown characteristics related to sensory processing abnormalities, including sensory avoidance and seeking behaviours that had persisted from a young age. May's parents had made a great effort to adapt the family's routines to accommodate her hyper-reactivity to smell and taste stimuli. May had a heavily restricted diet, which mainly included olives and frozen peas while avoiding all other food.

Since early childhood, May had had temper tantrum that lasted for hours when there was a change in her daily routine, her diet, or her possessions.

Family history

There is a strong maternal and paternal family history of anxiety and depression. Sophie had a history of anxiety, depression, and bipolar disorder since her teenage years. John also had long-standing anxiety that was mostly related to financial stress and lack of social support. May's elder half-sibling was diagnosed with oppositional defiant disorder at the age of five.

Birth history

With a psychiatrist's advice, Sophie took risperidone throughout her pregnancy with May. She had never been a smoker or a drinker, and her antenatal history was otherwise unremarkable. May was born at 41 weeks gestation and needed brief respiratory support at birth without special nursery admission. She was otherwise healthy.

Developmental history

May achieved all her developmental milestones at age-appropriate times.

Diet and bowel habits

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Due to her sensory processing issues, May had a restricted diet that mainly consisted of milk, frozen peas, and olives. The main issue was rock-eating behaviour, as described previously. May had a regular bowel action on a daily basis and no soiling issues were reported.

Sleep

May did not have issues falling asleep. However, she woke up almost every night to sleep in her parents' bed.

Medication

May had been on iron supplement tablets for three years due to her poor diet. However, her mother reported that she refused to take them regularly.

Examination and assessment

May was polite and cooperative during the physical examination and all the assessments. Through several interviews with May, the child psychologist and occupational therapist completed several diagnostic assessments, including the Autism Diagnostics Observation Schedule 2nd edition (ADOS-2), and a speech assessment – Clinical Evaluation of Language Fundamentals 4 (CELF4) and Pragmatics. The Childhood Autism Rating Scale (CARS) questionnaire was completed, with a final score of 23 out of 60, as a part of the screening assessment. The results of the physical examinations and assessments are listed in *Table 1* and *Table 2*, respectively.

Diagnosis

After vigorous discussion and assessments among the multidisciplinary team, they concluded that May did not have Autism Spectrum Disorder (as per ADOS-2, CARS, CELF4 and Pragmatics, and her developmental paediatric assessment). Through thorough interviews and assessments, the team concluded that her social interaction was adequate and appropriate for her age. Her behavioural difficulties could be attributed to anxiety, complicated by parental stresses and family dynamics. Although some of her presenting characteristics were highly suggestive of ASD based on the DSM-5 criteria on both the social communication domain and RRB domain, the team argued that May's individual level of functioning was not significantly impacted. Therefore, she did not fulfil the DSM-5 criteria for ASD.

May's mother was given the joint feedback and explanation of the final diagnosis by the developmental paediatrician and psychologist. The paediatrician made a referral to the local family support services and discussed recommendations of constructive parenting strategies to improve May's anxiety and behavioural problems. The case manager arranged follow-up appointments and meetings with May's new school teacher for another review and observed for new developments in her anxiety and behavioural issues.

Discussion

Diagnostic criteria of ASD in DSM-5

The current DSM-5 diagnostic criteria are classified into two domains – social communication deficits and restrictive repetitive behaviours (RRB) [1,2]. To fulfil the DSM-5 criteria, a child has to present with all symptoms in the interactive social domain and two out of four symptoms listed under the RRB domain [1,5]. Furthermore, these symptoms have to cause a significant impact on the child across different contexts from early childhood [1,2,6].

When comparing DSM-4 and DSM-5 criteria, DSM-5 was found to have higher specificity but lower sensitivity in detecting children with ASD [4,6]. Therefore, paediatricians can more confidently rule out ASD in children, but may miss the higher functioning subtypes, such as Asperger's syndrome, that were previously included in DSM-4 [1-3,6].

Dilemma of ASD diagnosis

Paediatricians face dilemmas when making an ASD diagnosis due to its significant impact – a misdiagnosis will result in unnecessary therapies for the child, while a missed diagnosis will lead to suboptimal management of the child's behaviour. According to several studies, children diagnosed with ASD are more likely to get government-funded coordinated care that targets their needs, and the parents are more proactive in managing their children's behavioural difficulties [1,3,6,7]. However, with the increasing demand for autism-related services, access to government funding is becoming limited, and the healthcare system is increasingly burdened by the long waiting lists [7-9]. According to several studies, other consequences following ASD diagnosis include parental stress, social stigma, and devaluation [7-9]. Furthermore, a misdiagnosis may divert health professionals towards the wrong path of management strategies when addressing the child's behaviour. Therefore, paediatricians are increasingly vigilant of the consequences of overdiagnosis and misdiagnosis.

Benefits of an integrated multidisciplinary diagnostic approach

Some studies have raised concerns about overdiagnosis and misdiagnosis after the introduction of DSM-5 [1-4,9]. Although the DSM-5 raises the threshold to potentially exclude higher functioning individuals, more children are diagnosed with ASD than 20 years ago, predominantly due to oversimplification of the criteria [3,4,10]. With discussion from different disciplines, paediatricians can avoid misdiagnosis and provide an effective management plan for the family [6,8,9]. The benefits of a multidisciplinary approach are supported by Austin et al. [9] who showed dramatic improvements in ruling out children without ASD, reducing the length of appointment waiting lists and offloading the overburdened autism-related services.

May's case portrays the importance of a holistic approach in accurately diagnosing children with ambiguous ASD traits. It raises awareness among medical students by familiarising clues and signs of ASD through different screening and diagnostic tools. ADOS-2, CARS, WISC5, CELF4, and Pragmatics are particularly useful to detect and quantify the severity of the impairment from several aspects [6,10,11]. Cognitive assessment, WISC5, is utilised to screen for intellectual disability (ID), which can be an isolated diagnosis or may co-exist with ASD and anxiety [6,10]. By using speech assessment CELF4, paediatricians can isolate receptive and expressive language disorders, which can lead to behavioural issues and communication difficulties [11]. Both ID and speech disorders may also be contributing factors for behavioural dysregulations and social interaction deficits [6, 10].

Relating diagnosis to May's presenting symptoms

Although May's primary referral raised the suspicion of ASD, her overall symptoms did not justify an ASD diagnosis after the detailed review and appropriate assessments. When the multidisciplinary team investigated the underlying factors for different aspects, parental stress and social isolation became the collective answer to May's presenting issues. Recent studies emphasise that the relationship between parental stress and children's behavioural problems is bidirectional and is often confounded by financial difficulties and social isolation [10,12,13]. While the on-site case manager arranged a six-month review with May's parents, May was linked in with her new school's counsellor and a child psychologist to manage her behaviours. Furthermore, May's mother was introduced to the local parental and community support services, who offer financial and social support. For children who do not qualify the ASD diagnosis, the National Institute for Health and Care Excellence (NICE) guidelines also suggest keeping the child under review, in order to take into account any new information that could alter the diagnosis [2]. Unfortunately, May was lost to follow up as her family moved to another state shortly after the assessment.

Conclusion

This case conveys two important messages to healthcare professionals and the public. Firstly, ASD is not a straightforward diagnosis that can be simplified by a set of symptoms. Therefore, a multidisciplinary approach is the future direction in assessing children with suspected ASD. Contributions from different disciplines can offer a collective insight into the reasons behind the child's presenting symptoms. With a clearer picture of the underlying factors, the child can receive appropriate services and support targeting the right issue.

Secondly, an integrated multidisciplinary approach provides appropriate ongoing management planning even for children who not qualify for the ASD diagnosis. May's case raised the importance of post-diagnosis follow-up in providing parental support and ongoing advice on behavioural management. For children who do not qualify for the ASD diagnosis but continue to have behavioural issues, they can be referred to a psychologist for family therapy, cognitive-behavioural therapy, and school aid for behavioural management.

Acknowledgements

Consent Declaration

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Informed consent was obtained from the patient and next-of-kin for publication of this case report.

Conflict of interest

None declared.

*Name has been changed for confidentiality.

References

[1] American Psychiatric Association. Diagnostic and statistical manual of mental disorders. BMC Med. 2013;17:133-7.

[2] UK NICE Guideline Updates Team. Autism spectrum disorder in under 19s: recognition, referral and diagnosis.

[3] Lobar SL. DSM-V changes for autism spectrum disorder (ASD): implications for diagnosis, management, and care coordination for children with ASDs. J Pediatr Health Care. 2016;30(4):359-65.

[4] McPartland JC, Reichow B, Volkmar FR. Sensitivity and specificity of proposed DSM-5 diagnostic criteria for autism spectrum disorder. J Am Acad Child Adolesc Psychiatry. 2012;51(4):368-83.

[5] Volkmar FR, McPartland JC. From Kanner to DSM-5: autism as an evolving diagnostic concept. Annu Rev Clin Psychol. 2014;28(10):193-212.

[6] Kaland N. Brief report: Should Asperger syndrome be excluded from the forthcoming DSM-V? Research in Autism Spectrum Disorders. 2001;5(3): 984-9.

[7] Russell G, Norwich B. Dilemmas, diagnosis and de-stigmatization: Parental perspectives on the diagnosis of autism spectrum disorders. Clin Child Psychol Psychiatry. 2012;17(2):229-45.

[8] Johnson TD, Joshi A. Dark clouds or silver linings? A stigma threat perspective on the implications of an autism diagnosis for workplace well-being. J Appl Psychol. 2016;101(3):430-49.

[9] Austin J, Manning-Courtney P, Johnson ML, Weber R, Johnson H, Murray D et al. Improving access to care at autism treatment centers: a system analysis approach. Pediatrics. 2016;137:S149-57.

[10] Autism and Developmental Disabilities Monitoring Network Surveillance Year 2010 Principal Investigators. Prevalence of autism spectrum disorder among children aged 8 years—autism and developmental disabilities monitoring network, 11 sites, United States, 2010. Morbidity and Mortality Weekly Report: Surveillance Summaries. 2014 ;28;63(2):1-21.

[11] Condouris K, Meyer E, Tager-Flusberg H. The relationship between standardized measures of language and measures of spontaneous speech in children with autism. Am J Speech Lang Pathol. 2003;12(3):349-58.

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[12] Baker BL, McIntyre LL, Blacher J, Crnic K, Edelbrock C, Low C. Pre-school children with and without developmental delay: behaviour problems and parenting stress over time. J Intellect Disabil Res. 2003;47(4-5):217-30.

[13] Valicenti-McDermott M, Lawson K, Hottinger K, Seijo R, Schechtman M, Shulman L et al. Parental stress in families of children with autism and other developmental disabilities. J Child Neurol. 2015;30(13):1728-35.

Appendix

Table 1. Physical examination findings. NAD: no abnormality detected

Examination	Results
Weight	37.8 kg
Height	129 cm
Head circumference	53.5 cm
Skin examination	A 1 x 2 cm cafe-au-lait macule on her right scapular region
Neurological examination	NAD Normal coordination, able to hop on one leg
Respiratory examination	NAD
Cardiovascular examination	NAD
Thyroid examination	NAD
Developmental examinations	Gross motor – Upon current examination, May was able to stand on one leg and hop on a single leg Fine motor - May had good fine motor skills, she showed tripod pencil grip in her drawing and writing Speech and language – May's receptive speech was very literal and she did not understand simple jokes, she was able to elaborate on her statements, understand instructions, and hold conversations. Social – Although May was not socially proactive, she could maintain a reciprocal conversation once the interviewer had initiated it. May had good eye contact and non-verbal communication.
Audiology test	NAD Test completed one week prior to the assessment
Vision test	NAD Test completed one week prior to the assessment

Table 2. Assessment results.

Assessment types	Results
Autism Diagnostics Observation Schedule 2nd edition (ADOS-2), Module 3	Minimal features of ASD. Final ADOS score of 2: does not satisfy the criteria of ASD as per DSM-V. No concerns in communication reciprocity, non-verbal communication, and understanding relationships. No current evidence of stereotyped or repetitive movements. Moderate concerns in hyper-reactivity to sensory input.
Speech assessment – Clinical Evaluation of Language Fundamentals 4 (CELF4) and Pragmatics	Normally developed receptive (122, 93rd percentile) and expressive (116, 86th percentile) language.
Cognitive assessment - Wechsler Intelligence Scale for Children 5th edition (WISC5)	Full Scale Intelligence Quotient (FSIQ) was 115, classified as high average range.
Childhood Autism Rating Scale (CARS)	23/60. Total score of less than 30: not suggestive of ASD