Attention-Deficit/Hyperactivity Disorder: The Diagnostic Process From Different Perspectives*

CASE

By the time she was 9 years old and in the middle of her third-grade year, Julie’s parents realized that she had a problem with learning compared to other children. Her mother said that she was “always flighty”—daydreaming and not consistently connected when talking to her friends or family members. At open house, her second-grade teacher commented that “Julie is a good kid, a smart kid, but she is often not attentive during class discussions.” Reading skills were described as “somewhat slower” than with other children her age. Because she was making progress and did not exhibit any disruptive behaviors, Julie’s second-grade teacher and parents decided to observe her over the next year.

In the third grade, Julie was not able to keep up with the class in reading. She read slowly and often had difficulty when asked questions about a story she had read in class. Her math skills were above average and her spelling was at the class level. Julie’s parents described social interactions as “bubbly—sometimes too quick to talk when in a group of other girls.” She had several friends, but friendships were rarely sustained. Julie’s father noted that she “seemed to worry a lot” about her appearance and how other kids felt about her. She was especially fearful of shots in the pediatrician’s office and barking dogs. She enjoyed going to her ballet class but “often cried and seemed worried about her performance” prior to recitals.

Julie was an only child. Her parents had a solid marriage and often engaged Julie in weekend activities. They both worked full-time; her mother taught English as a second language, and her father worked in construction. Her mother completed college, although she recalled struggling with math. She described herself as a “worrier” and endorsed fears about flying, meeting new people and taking vacations. She stated that she experienced anxiety when there were changes in her adult life (eg, a new school assignment or planning a meeting with her principal). Julie’s father completed high school but had a history of reading problems. He took special reading classes beginning in elementary school, but as an adult, he rarely read a newspaper or a novel. He commented that he was “hyperactive” and that his overactivity in class and poor attention impaired his learning.

In the pediatrician’s office, Julie was observed to be initially shy but could be engaged in conversation. Her speech was clear and intelligible, although she answered questions with short phrases. She was not hyperactive, but her attention to directions and questions was limited. Growth parameters, a screening audiogram and visual acuity and a complete physical examination were normal.

INDEX TERM. attention-deficit/hyperactivity disorder (ADHD).

Web Site Discussion

The case summary for this Challenging Case was posted on the Developmental and Behavioral Pediatrics Web site (www.dbpeds.org/list) and the Journal’s Web site (www.jdbp.org). An invitation to comment was followed by the instructions: A pediatrician evaluates a school-age child with educational underachievement and behaviors that suggest an inattentive form of attention-deficit/hyperactivity disorder (ADHD). An initial screening history informs the pediatrician that there may be more than ADHD impacting on the child’s learning and social development. If asked to consult with the limited data in the case summary, how would you guide the pediatrician in the evaluation process? What additional information would be useful and how can a pediatrician obtain the information in an efficient manner? Keep in mind that you are advising a primary care clinician rather than planning an evaluation by a developmental-behavioral pediatrician.

Martin T. Stein, MD
Professor of Pediatrics
University of California
San Diego, California

Nola R. Marx, MD

The differential diagnoses for this third-grade girl who is falling behind in school includes anxiety disorder, ADHD (predominantly inattentive type), dyslexia, central auditory processing disorder, language disorder (receptive and expressive), sleep disorder, and seizure disorder. She may have 1 or more conditions depending on a more complete history and subsequent test results.

As a consultant advising the primary pediatrician, I would suggest getting the following additional history first:

1. From Julie and her parents: What is Julie thinking about in class? Is she worried about anything happening? Are any signs of depression or anxiety emerging? Is it difficult for her to put her ideas in words? Is the teacher talking too fast for her to understand? Is the teacher using words too big for her to understand? Is Julie daydreaming about other things (eg, what she’ll do after school, or a
birthday party she’s looking forward to)? Are noises and sights around the classroom distracting her? What is Julie’s sleep pattern? Does she awake suddenly then have difficulty falling asleep? Does she seem sleepy during the day?

2. From the classroom teacher: When Julie is not paying attention, what gets her attention back—repeating things more slowly, using visual aids, going over to her desk and repeating instructions? Does Julie appear to be in a daze while tuning out; is she groggy or confused when trying to respond after repeating instructions? Regarding learning—does Julie have any problems expressing herself verbally or in written form? Are math problems difficult for her while calculations are age-appropriate? Is her error pattern on tests inconsistent rather than based on comprehension or rote memory?

Based on responses to the above history questions, I would then advise the pediatrician to request 1 or more of the following tests:

1. Complete psychological and educational evaluation
2. Speech and language evaluation (including auditory processing and discrimination tests in addition to receptive and expressive language tests)
3. Electroencephalogram (sleep-deprived and with hyperventilation)

Editor’s note: Dr Marx begins with a comprehensive differential diagnosis using the information in the case summary. It is a fine example of the attentiveness to minimal data to begin the evaluation process. The questions that may clarify the daydreaming episodes are especially useful. Presumably, the recommendation for an electroencephalogram is a result of the “daydreaming” history and consideration of petit mal (absence) seizure. In most cases, a more complete history can differentiate petit mal (brief, repetitive absence spells usually less than 10 seconds) from daydreaming (more prolonged staring episodes during classroom and homework time).

James Beard, Jr.

This is a typical presentation of ADHD (primarily inattentive with impulsive behaviors) in girls who demonstrate much less disruptive behaviors and tend to have more coexisting conditions such as anxiety and depression. They also have the reading and language-based “learning differences” that are seen frequently in children with ADHD. Women are underserved, because teachers and primary care physicians have been trained to watch for externalizing signs of ADHD found most often in males. Teachers may not tolerate disturbances in the classroom, and the boys’ impulsive-hyperkinetic behavior brings attention to teachers and parents. Dr Patricia Quinn has pointed out the psychiatric burden in many adult women with ADHD due to missed diagnoses.

Julie needs an evaluation for learning strengths and deficits and the symptoms that suggest anxiety and ADHD. The focus of the evaluation should be on the impact they have on her efficiency and success in learning and socialization. Demystification of Julie’s condition directed at both the child and her parents can begin the process of success. Environmental and behavioral modifications, as well as classroom accommodations, can bring improvements in quality of life and self-esteem. The presence of significant impairment is required before medication should be considered.

REFERENCE

1. Nadeau KG, Littman EB, Quinn PO. Understanding Girls With ADHD. Silver Spring, MD: Advantage Books; 1999

Marc Lerner, MD

Dr Beard’s assessment seems on target to me. In the context of a primary care assessment, I would advise linkage to the school for completion of an ADHD “plus comorbidities” questionnaire (available from the National Initiative for Children’s Healthcare Quality at www.nichq.org) and suggest that the primary care pediatrician ask the parents to request an independent education program assessment that includes achievements and cognitive measures. Julie’s reading capacity and grade level and her cognitive abilities should be assessed by this process. As a developmental-behavioral consultant, I would then offer to review the details with the primary care clinician with an emphasis on indicators of attention and anxiety.

While ADHD, anxiety disorder, and a specific learning disability may coexist, the possibility of secondary inattention due to worry or learning frustration can be addressed by sequential interventions (ie, referral to mental health support for nonmedical anxiety treatment, or initiate individualized school help or medical/nonmedical intervention for the ADHD). Whichever pathway is chosen, I would monitor school reports, especially anxiety and attention ratings, for 2 to 3 months and then add interventions if global progress is inadequate.

As a guide to the prioritizing of the interventions, I would encourage the pediatrician to consider the intensity of symptoms, the behaviors that cause the most distress for the child and family, medicine phobia, access to qualified mental health providers, and the clinician’s priorities. I typically recommend children with higher levels of impairment than Julie receive the most rapidly applicable intervention or multiple interventions, but in this case, a stepwise approach seems possible.

Editor’s note: Dr Lerner emphasizes the value of coordination between a primary care pediatrician and a specialist in developmental-behavioral pediatrics. Following residency training, consultations with specialists have been a source of knowledge and clinical growth for primary care clinicians. This model works well for problems in behavior and development. Dr Lerner’s availability to the pediatrician to review data after the initial assessment is commendable.

Prioritizing interventions is an important skill when treating a child with a behavioral condition. This is especially true for children with ADHD and coexisting conditions when parent/child education, behavior management, environmental accommodations, and medication...
may be considered in the treatment plan. Dr Lerner’s guide to prioritizing these interventions is recommended.

REFERENCE


Billy Levin, MD

Editor’s note: The following observation was in response to a comment by a pediatrician who wrote, “I typically have to fight with the schools to get information about such a child. How do you do it?”

I have numerous letters of explanation delivered prior to the start of treatment. I also make a point of contacting the school principal for permission to call the principal of each child in their practice to obtain information. Without permission, I can’t contact the principal of each child in their practice for more information. I have direct communication with educators in those schools with the most impaired patients and those schools in their neighborhood. I have numerous letters of explanation delivered prior to the start of treatment. I also make a point of contacting the school principal to gain permission to contact the principal of each child in their practice for more information. I have direct communication with educators in those schools with the most impaired patients and those schools in their neighborhood.


Frances Page Glascoe, PhD

Application of a systematic series of “rule-outs” is critical. The causes of academic, attention, and social difficulties are varied, and several causes can be operational at the same time. There is much to be gained by scrutinizing group-administered achievement test scores, but at this point, given the information already gathered, I would recommend a psychoeducational evaluation. Schools can provide this, but it is advisable to list the kinds of testing desired (a diagnostic academic achievement test and a measure of intelligence). I would also ensure that the battery provides language screening or a diagnostic test of language as well as a mental health measure. With these results in hand, the following conditions should be considered:

1. Dyslexia and other learning disabilities
2. Slow learning
3. Academic talent/giftedness
4. Language impairment
5. Emotional and family difficulties
6. ADHD with learning disabilities

If all of the above are ruled out, there are at least 7 other considerations that explain poor grades in the face of average quotients on intelligence and academic measures. While some are less likely in this particular case, the following questions should be asked:

1. Are poor study skills a problem?
2. Has the child had frequent school absences?
3. Have recent life events and behavior problems related to educational achievement?
4. Is the child an average learner in a school that demands above-average performance?
5. Are group achievement test scores or other grade-based performance indicators misleading because of retention in grade?
6. Is the child substantially younger than others in his or her grade?
7. Is ADHD (without learning disabilities) a contributor?

Note that in both sequences, ADHD is last. This is deliberate and designed to ensure that it is not diagnosed before more compelling explanations for the same behaviors can be explored and addressed.1

Editor’s note: Dr Glascoe’s emphasis on multiple etiologies for school failure and behavior problems related to educational achievement is critical in the evaluation of a child like Julie. This medical model is similar to a differential diagnosis of a chronic cough, recurrent abdominal pain, or an unexplained skin eruption. The evidence-based diagnostic and evaluation guideline for children with ADHD, published by the American Academy of Pediatrics, included this concept in the framework of “coexisting conditions.” At least one third of school-aged children with ADHD have 1 or more of these conditions that include learning disabilities and mental health disorders (most often oppositional behaviors and anxiety). Family and community stressors that affect a child’s well-being (as well as class placement, teacher-child relationships, and parental expectations) should also be a part of the evaluation.

Dr Glascoe’s placement of ADHD at the bottom of the list of conditions reflects a touch of clinical wisdom. Too often, the presenting behaviors consistent with inattentive, hyperactivity, or impulsivity lead to a premature consideration of ADHD without an adequate evaluation for coexisting conditions. Without intention, the ADHD diagnostic guideline may encourage this inappropriate practice. However, when the algorithm attached to the guideline is followed, clinicians will recognize that the core symptoms of ADHD provide the starting point for a comprehensive investigation.

REFERENCES


Meg Zweiback, RN/CPNP

I’d like to echo Dr Glascoe’s comment about ADHD being the last diagnosis to consider rather than the first. Even though the history suggests inattentive ADHD, I think that a more comprehensive approach would help Julie and her family more. If the pediatrician uses her influence to engage Julie,
her parents, and her teachers in the process of understanding Julie’s needs and abilities, the stage will be set for helping her now and in the future. A quick diagnosis, even if it is correct, will make Julie the passive recipient of treatment, which in this case is often viewed as the pill that fixes everything.

Julie has not been formally evaluated with a teacher-observation questionnaire. The value of such a questionnaire is that it provides concrete information for a diagnosis and for continuing reevaluation of therapy. Using a questionnaire that can compare Julie’s performance at school to other settings is also an excellent teaching tool to share with parents who will have to make an educated decision about stimulant medication.

If the evidence is strong that ADHD is a part of the problem and further testing will take time, it is reasonable to consider medication. However, since some of her inattention-related symptoms may improve, it could appear that the medication was all she needed, even if she was still having reading difficulties. It is important to continue with a complete psychoeducational evaluation with emphasis on reading skills and language processing. I agree that the request (in writing) should be made to the school, since it is the school evaluation that leads to an individual education plan and provides a system for planning and accountability.

Julie’s history points to a reading disability, one that impairs her fluency and comprehension. Comprehensive testing in this area is essential to pinpoint where she needs help. If she is doing well in spelling, her memory/word-recognition/phonics skills may be deceptively normal and could mask other weaknesses. Depending on the results of these tests, a reading specialist at school may be able to provide help or the family may be able to arrange an after-school reading program. Ideally, Julie’s parents will be able to work with her and may be able to immediately work on comprehension through reading aloud to her at home, followed by asking questions and discussing stories. If Julie has a significant problem in reading, she will also need assistance in other subjects if she is falling behind. A homework tutor or in-school tutor may be helpful.

Finally, the pediatrician should make a plan to monitor Julie’s progress and to assess the degree to which anxiety pervades her functioning. It is possible that her anxiety will decrease once she experiences more success in school and that her encounters with skilled learning specialists will help her with her anxiety. A referral for cognitive behavioral therapy might be warranted if Julie’s anxiety is seen as limiting her capacity for learning and enjoyment of daily life.

Merryl Schechtman, MD

I would recommend that Julie receive a full psychoeducational and language evaluation. The fact that her reactive language consists of short sentences suggests language impairment. Her difficulties maintaining friendships may be a result of impulse control, which stems from anxiety and/or ADHD inattentive-type behaviors. I agree with other clinicians that a standardized behavior checklist would be helpful in the evaluation of ADHD symptoms at home and in school. Her math skills are probably based on calculations at this point, but word problems will be more prevalent in third grade and she will probably have more difficulties with these.

The family history is suggestive of language, learning, ADHD, and anxiety issues. These need to be further teased out in Julie. Her pediatrician might consider a selective serotonin reuptake inhibitor to decrease anxiety and improve self-esteem before considering a stimulant. Julie would benefit from individual counseling, and this should be initiated with or without medication. She may also receive benefits from speech and language therapy as well as resource-room services. The counseling will help Julie understand her learning differences.

Editor’s note: Attention to family history is a critical piece in the evaluation. As Dr Schechtman observed, Julie’s family history was a rich source for evaluating conditions in addition to ADHD. This clinical approach respects the significant genetic contribution found in many childhood behavior and learning conditions.

Thomas K. McInerny, MD

Our midsize group practice (6 pediatricians; 4 nurse practitioners) employs a retired school guidance counselor on a part-time basis to assist in the evaluation of patients with possible learning problems or ADHD. She can efficiently obtain important information about the patient’s functioning in school and communicate our suggestions about program modifications in language familiar to educators because she is familiar with the local school district and knows many of the teachers, psychologists, and guidance counselors.

Usually this individual will review pertinent report-card information, teacher notes, psychological test results, and teacher rating scales before the patient’s visit to the office for assessment. She then meets with the parent(s) and patient to obtain the history about school problems as well as the family and social history. She summarizes this information for the patient’s pediatrician, and they formulate a preliminary diagnosis and plan of treatment. Then, both discuss these plans with the parent(s) and patient, refining the diagnoses and treatment plan with the family.

The guidance counselor usually spends 40 to 45 minutes with patient and family and discusses the findings with the pediatrician, and then both spend 10 to 15 minutes with the family. This saves the pediatrician the time spent reviewing the information from school and gathering the history. Working closely with the pediatricians, the office-based guidance counselor and nurse communicate with the school and parents to determine the patient’s response to our recommendations. In addition, we often use a behavior rating scale to monitor response to medication and behavioral recommendations. The guidance counselor is paid at an hourly rate for time spent reviewing information from school, meeting with the family, and following up with school personnel. The cost for the guidance counselor is cov-
Pediatricians in our office are able to function efficiently working with the guidance counselor to evaluate children with problems in school. In this way, we are able to help many more patients than without the assistance of the guidance counselor.

Editor's note: What a creative use of a community resource! The challenges of managing a chronic condition like ADHD in primary care pediatric practice are familiar to everyone who has cared for these children. Gathering and interpreting information from school and parents, during the evaluation process and during long-term monitoring, places a demand on many office practices that are organized for health-supervision and acute-illnesses visits. Dr McInerny has discovered a method that should be transferable to other pediatric practices and clinics.

Dr Laurel Leslie has piloted a program in San Diego that offers a community-based method to assist pediatricians in the evaluation of a child with ADHD. An ADHD coordinator with an office in the Children’s Hospital responds to requests from pediatricians for a new patient evaluation for possible ADHD. The coordinator sends a comprehensive assessment packet to the parent, who completes the parent portion and requests that the teacher complete the teacher assessment. The packet is returned to the coordinator who reviews the history and parent/teacher behavior checklists and formulates a letter sent to the pediatrician. This intake process is completed before the pediatrician sees the patient. The program also includes Web-based and written educational materials for clinicians, parents and teachers (Leslie LK, Weckerly J, Plemmons D, Landsverk J, Eastman S. Implementing the American Academy of Pediatrics attention-deficit/hyperactivity disorder diagnostic guidelines in primary care settings. Pediatrics. 2004;114:129–140).

Final note: The case of Julie demonstrates that the evaluation of a school-aged child for ADHD is a complex process. It goes beyond ascertainment of the 18 behaviors delineated by the Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition. A clinical assessment of functional impairment, family history, and coexisting learning disabilities and mental health disorders is an integral part of the process. The case summary of Julie illustrates clues to anxiety and a learning disability associated with ADHD. The family history was also important in understanding Julie’s behaviors and educational output. The importance of interviewing the patient and parents is apparent from many of the observations made by those who commented on the case. In addition to acquiring the information described above, the clinical interview provides the clinician with the patient’s (and parent’s) understanding of problems under evaluation, their explanatory model for the behaviors and school work, and the beginning of a therapeutic alliance to achieve adherence to treatment. Coordinated systems of care must include this critical component to assure success.
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