APPROACH TO TIC DISORDERS

Developed by Sophia Yip and Dr. Lyn Sonnenberg for PedsCases.com.
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Introduction:

Sophia: Hi everyone, my name is Sophia Yip and I am a resident and recent graduate from the medicine program at the University of Alberta. Joining me for this podcast is Dr Lyn Sonnenberg, a Neurodevelopmental Pediatrician and Associate Professor of Pediatrics at the University of Alberta. Today we will be talking about a clinical approach to Tic Disorders.

By the end of this presentation, we hope learners will be able to:

1. Identify tics and list the diagnostic criteria for different tic disorders in children.
2. Differentiate the common presenting features of tics disorders and list their comorbidities.
3. Outline a general approach to the counselling and management of tic disorders.

Clinical Case:

Dr Sonnenberg: Here is our clinical case.

You are a pediatrician practicing in the community. Aticus is a 10-year-old boy in your practice, who is returning for a follow-up appointment. His parents have concerns regarding some unusual movements and odd noises that he is making. This all started a year and a half ago, when they noticed that Aticus was constantly clearing his throat. There were no prodromal or associated upper respiratory symptoms. The throat-clearing lasted for 2 months before going away. About 3 months later he began to periodically jerk his left shoulder, which has been ongoing ever since. There are stretches of time when the jerking movements occur less frequently, and other times when they seem to happen more often and with greater intensity. Recently Aticus' parents have noticed that his throat-clearing has returned, and that he also sometimes blinks very rapidly. They have asked Aticus to stop these movements and noises, which he can do, however not for very long, and the behaviours seem to get worse afterwards. When questioned, Aticus reports that he "feels like he has to do it". He says that it feels like "trying to stop from scratching an itch", and afterward, he feels better. He admits that these movements and vocalizations are starting to make him feel self-conscious around other people, and he is scared that his friends will make fun of him.

Definitions

Sophia: Let's start with a definition. Dr Sonnenberg, what are tics?

Dr Sonnenberg: Tics are rapid coordinated behaviours that are sudden, brief, intermittent, and repetitive. Tics can present as movements, called motor tics, or they can be sounds, called phonic or vocal tics. Tics can be further characterised as simple or complex. Tics are involuntary. While they can be temporarily suppressed, prolonged suppression causes inner tension and the child may exhibit more dramatic tics or a burst of tics afterwards. Tics may improve when the child is distracted or concentrating on a task, and worsen with stress, fatigue, and excitement. There is often an urge or uncomfortable sensation that precedes the tic and resolves after performing the tic.

Sophia: The important point to remember is that although the child may be able to consciously exert some control over the action of the tic, the tic itself is involuntary, and so the child is not doing it on purpose.

Dr Sonnenberg: That's correct, and very important to communicate to parents and caregivers. Sophia, can you name one of the most common types of tic disorders?

Sophia: Tourette's Disorder is one of the most common causes of motor and vocal tics. It is a clinical diagnosis, and the diagnostic criteria for Tourette's Disorder are as follows:

1. The presence of multiple motor tics **and** one or more vocal tics has been present at some time. These motor and vocal tics do not have to occur concurrently.
2. Duration of tics for more than 1 year.
3. Age of onset before 18 years old.

In Tourette's Disorder, tics can wax and wane over time, and the child can experience new tics or regain old tics, as we see in Aticus' case. Often it involves discrete tics or tic patterns that are repeated in a predictable and stereotypical manner.

Dr Sonnenberg: That's right. Now, can you describe a second type of tic disorder and contrast it with Tourette's Disorder?

Sophia: The second type of tic disorder is Persistent or Chronic Motor or Vocal Tic Disorder. Compared to Tourette's Disorder, in Persistent or Chronic Motor or Vocal Tic Disorder one or more motor **or** vocal tics are present, for a duration of more than 1 year, with the age of onset before 18 years of age.

Dr Sonnenberg: The key difference in Persistent or Chronic Motor or Vocal Tic Disorder is that the child may have motor **or** vocal tics, **but not both**. Tourette's Disorder requires the presence of both motor **and** vocal tics at some time.

Sophia: There is also a third type of tic disorder, distinct from the two that we have just discussed.

Dr Sonnenberg: The third type of tic disorder is Provisional Tic Disorder, previously called Transient Tic Disorder. In Provisional Tic Disorder, the child presents with one or more tics,

which can be motor **or** vocal **or both**. The duration is less than 12 months since first tic onset, with the age of onset before 18 years of age.

Sophia: The distinguishing feature of Provisional Tic Disorder is the duration of the presentation of tics, which is less than 12 months, compared to more than 1 year in Tourette's Disorder or Persistent or Chronic Motor or Vocal Tic Disorder.

Dr Sonnenberg: Exactly. Remember, to diagnose any of the tic disorders that we discussed, the tics cannot be attributable to any effects of a substance, medication, or medical condition, and the age of onset must be before 18 years of age.

Sophia: So how is the best way to approach tic disorders clinically?

Approach to History and Physical

Dr Sonnenberg: As with most things, you should start your encounter by taking a thorough history and performing a physical exam.

Let's return to our case.

Aticus is an otherwise healthy boy. His mom reports that she had an unremarkable pregnancy with very good prenatal care. There were no exposures to alcohol, tobacco, or recreational drugs during the pregnancy. Aticus was born at term via spontaneous vaginal delivery, and his birth and neonatal courses were uncomplicated.

His developmental history is also unremarkable; he achieved all of his developmental milestones in all domains on time, and there were no concerns of developmental regression. Aticus did have some difficulties focusing and sitting still in school, and you had previously diagnosed him with attention deficit hyperactivity disorder (or ADHD). He is currently on long-acting methylphenidate (like Concerta) which you started and he has been doing well. His family history is also unremarkable, although Aticus' dad commented that he himself also had some difficulties in school with attention, but he was never formally diagnosed with ADHD.

Aticus lives at home with both parents, his younger sister, and two dogs. Home life is good and Aticus feels safe and happy. Review of systems is unremarkable.

Aticus' dad mentions that his tics seem to have coincided with starting methylphenidate and asks you if the ADHD medication is causing his tics.

Sophia: Dr Sonnenberg, I wish this were a video, because tics can be so visible and audible in the office.

Dr Sonnenberg: Yes, and sometimes, you can even see and hear them in the parents and siblings! (That's a story for another day.) Let's discuss the important points of the history and physical of a child with suspected Tourette's Disorder.

Sophia: As highlighted by Aticus' case, most patients with Tourette's Disorder are developmentally typical, with normal intellectual abilities. The physical exam, including the

neurological exam, is also often unremarkable, with the exception of notable tics. It is important to take a thorough history, including past medical history, social history, and family history for tics or tic-related disorders when evaluating a child with suspected tic disorders. Observe the parents as well, as sometimes they are unaware that they themselves have tics. Atypical presentations and abnormal development may warrant further investigation for causes of secondary tics and movement disorders, but those are beyond the scope of this podcast.

Dr Sonnenberg, Aticus was previously diagnosed with ADHD. Is it common to see both disorders?

Dr Sonnenberg: Tourette's Disorder is commonly associated with attention deficit hyperactivity disorder, or ADHD, as well as obsessive-compulsive disorder, or OCD. It is important to screen for the coexistence of tics in children who present with these disorders. These comorbidities, as well as associated behavioural problems, depression, and anxiety can exacerbate tics, and may contribute to struggles in a school environment. This can all lead to poor self-esteem, social withdrawal, and isolation due to symptoms and teasing. ADHD is a more common comorbidity with Tourette's Disorder, affecting up to 30 to 60% of patients.

Therefore, it is important while taking the history to determine the nature and severity of the tics, as well as the degree of functional impairment of the tics and associated co-morbidities. This will affect management.

Sophia: Management decisions for Tourette's disorder are focused on education and are based on the degree of functional impairment. Treatment should be tailored to the child and address the most disabling symptoms. Treatment goals include improving social functioning, self-esteem, and quality of life. It is important to set realistic expectations for the patient and their family that complete resolution of symptoms may not be achieved, although there may be improvement during the teenage years.

Non-pharmacologic management options include behavioural therapy and counselling, with the goals of improving the child's understanding of their condition and social functioning. Classroom support is also important, and education of family, friends, teachers, classmates, and school personnel, as well as discussing classroom modifications or accommodations can help create an accepting environment for the child.

Pharmacologic treatment is warranted if the tics severely affects the child's function, self-esteem, are painful, or cause injury. It is also important to treat ADHD, OCD, and other mood disorder comorbidities. Alpha-2-adrenergic agonists such as long-acting guanfacine (like Intuniv) or clonidine are modestly effective in treating tics and may be helpful if the child has comorbid ADHD or behavioural symptoms, like impulse control or anger. Antidopaminergic drugs or topiramate are also options. Botulinum toxin can be helpful for focal tics, like blinking.

To address the concerns of Aticus' dad in our case, ADHD often precedes tic onset, thus giving the misperception of ADHD medications 'causing' tics. If tics are still present after discontinuing the stimulant medication used to treat ADHD, this indicates a comorbidity with a tic disorder.

Dr Sonnenberg: So to conclude our case, after counselling Aticus' family about Tourette's Disorder, you can refer Aticus to a pediatric psychiatrist, if you need more support, or choose the route of counselling services first. His parents plan to speak to his teachers to see how they can best support him in the classroom. They also agree to trial a switch from his long-acting methylphenidate to guanfacine, and you plan to check in with them again next month to see how he is doing from both the tics and ADHD perspectives.

Key Learning Points

Sophia: As we approach the end of this podcast, let's review our learning objectives.

1. Today we learned about three different tic disorders. Tourette's Disorder requires the presence of both motor and vocal tics.
   If only one is present, this fulfills the first criteria for Persistent or Chronic Motor or Vocal Tic Disorder. Tics need to be present for longer than one year for both disorders. If the tics are present for less than 12 months, this points to Provisional Tic Disorder. For all three of these tic disorders, age of onset must be before 18 years old, and the presence of tics cannot be attributed to another condition.
2. Children with tic disorders usually have an otherwise unremarkable history and physical exam. They may initially present with features of ADHD or OCD, both of which are common comorbidities of Tourette's Disorder.
3. Management strategies focus on education and minimising the effect of the tics on the child's physical, social, and emotional health. It is important to treat any comorbidities, and to set realistic expectations.

Dr Sonnenberg: Remember, if a child presents with suspected ADHD, always screen for the presence of tics!

Sophia: That concludes the end of our podcast. Thank you so much for sharing your expertise with us, Dr Sonnenberg!

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