Case Report
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Tourette syndrome: Exercise for Overweight, a case report

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Abstract

Tourette syndrome is a neurodevelopment disorder characterized by motor tics and vocal tics, with possible co-morbidities such as attention-deficit/hyperactivity disorder (ADHD) and obsessive-compulsive disorder (OCD). For mild cases where the symptoms are not affecting quality of life, treatment is not required. But severe cases will require pharmacotherapy and specialized therapies. When treated with antipsychotics the patient may develop unwanted side effects such as weight gain. In addition to pharmacotherapy, it is essential to address the side effects arising from it. Weight gain is a very challenging ill effect and has major complications of obesity, diabetes etc. Side effects such as weight gain will need a holistic approach; if not addressed they can place the individuals at health risks. In the present case report, involvement in exercise programme designed by physiotherapists helped to address weight gain.

Keywords: Tourette Syndrome • Children • Overweight • Exercises • Rehabilitation

Introduction

Tourette syndrome is a neurological disorder, which involves involuntary motor tics and repetitive abnormal vocalizations [1]. This condition can occur between the ages of 2 to 21 years. [1-6]. Tourette syndrome is commonly presented with motor tics and vocal tics. Tics can be defined as sudden twitches, movements or sounds that occur repeatedly. Repetitive blinking, shoulder shrugs, repeated hand and leg movements are the examples for motor tics. Vocal tics are abnormal repetitive sounds made by the individual. It has been found that usually the symptoms of Tourette syndrome decrease during early adolescence and adulthood. Tourette syndrome can be diagnosed with the presence of both motor tics and vocal tics. Nine out of ten Children affected with Tourette syndrome also present with some mental, behavioral or developmental disorders [1,8,9]. Children can also be affected with sleeping problems, poor academic performance, low self-esteem, and difficulty in controlling temper. The causes for Tourette syndrome are yet being studied. There is a hypothesis suggesting causes such as bacterial infection, genetic predisposition and abnormal dopaminergic function in the brain [10-13]. The management of the disease depends on the severity of the condition. In mild cases subjects can control the tics with intention. But in severe cases medication such as neuroleptics and specialized behavioral therapies are required. The medication begins with small doses and slowly increased until symptoms are relieved. Common side effects of these medications are depression, weight gain and tiredness [1,9,14,15].

Case Report

Our subject was a 12-year old boy, who presented with motor and vocal tics and was diagnosed with Tourette syndrome. His symptoms have been persistent for more than five years. He was born through a caesarean section and had a low birth weight of 1.24 kg. He had good weight gain during the following months and showed good developmental pattern. The child had been active, but suffered anemia at 10 months for which he was on Iron supplements. He had repeated bouts of fever and lower respiratory tract infections and a couple of episodes of febrile convulsions in his early childhood.

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The child complained of headache and chest pain at 9 years of age. Motor and vocal tics were noted by medical professionals. The mother stated that the family observed motor and vocal tics since the child was 7 years old and they considered it as effects of watching television for prolonged hours and as part of his misbehavior.

Medical records of the child revealed that he presented with repetitive movements such as eye blinking, sniffing and hand movements which worsened with stress and improved when relaxed. His Vision and Hearing were normal. He was not hyperactive and did not present with OCD.

In January 2020 he was prescribed with haloperidol and Benzhexol. It was changed to Risperidone and Benzhexol after few months with expectation of better progress. The symptoms improved with Risperidone but its' side effects were challenging. The symptoms of motor and vocal tics reduced to a great extent.

Weight gain is among known common side effect of antipsychotic drugs and the child experienced increased appetite, and his body weight increased by 10 kg in seven months. He was classified as overweight, and it was considered as a side effect of Risperidone hence the medication was changed to Haloperidol and Benzhexol. It is stated that the life span of children affected with Tourette syndrome remains normal and does not reduce due to the condition [15]. However, it was thought provoking to consider the side effects of the medications used in its management [2]. In case of this patient, the body weight increased drastically and he developed hyperlipidemia. The researchers decided it was essential to focus on managing side effects to prevent complications.

During his visit to the physiotherapy department 5 months ago, medical records revealed that vocal tics had diminished and motor tics had reduced. His academic performance was considered below average. He had intermittent episodes of chest pains; ECG and echo cardiogram reports were normal. The child was hyperlipidemic and high levels of alanine aminotransferase (ALT) and aspartate aminotransferase (AST) led the medical team to suspect fatty liver, which was excluded through ultrasound scan. He also presented with acanthosis nigricans, which was an alarming sign of being pre diabetic and obese. He was instructed on diet modification and physical activity. As physiotherapists our role was to address excess weight. The exercise program for this patient focused on aerobic fitness for weight reduction, coordination and agility. It comprised of 30 minutes stationary cycling. Thereafter, there were exercises for 30 minutes which included- step up and step down on a footstool 30 cm high, bilateral arm movements upwards and sideways with 250 gm sand bags and a walk of total 15 minutes duration with 30 seconds rest between every 1 minute walk across a 3 meter distance, he was encouraged to achieve more laps within a minute. The child followed the exercise sessions in the physiotherapy department 5 days a week until schools re-opened. Thereafter he visited the department every other week. When at home, he

was instructed to cycle for an hour, be active and to avoid naps during the day. Regular monitoring revealed that his weight did not increase after following exercises for 2 weeks. After 5 months the child reduced 2 kg body weight.

Discussion

Tourette syndrome is a neurodevelopmental disorder characterized by motor and vocal tics, and comorbidities such as attention-deficit/hyperactivity disorder (ADHD) and obsessive-compulsive disorder (OCD). In this case the child presented with motor and vocal tics with no hyperactivity or OCD. The medical management led to lot of improvement in motor and vocal tics. However, as a side effect of the medication he had increased appetite and gained excess weight. He has been attending physiotherapy sessions for the past 5 months and reduction in weight was noted and the exercises will be continued. The case report of this patient intends to convey that it is essential to address the side effects of medication as a team in patients with Tourette syndrome to prevent complications such as- hyperlipidemia, diabetes, obesity etc. associated with excess weight.

References

1. https://www.betterhealth.vic.gov.au/health/ConditionsAndTreatments/tourette-syndrome 2014
2. Hallett, Mark. "Tourette syndrome: update." *Brain and Develop 37*(2015): 651-655.
3. Efron, Daryl, and Russell C. Dale. "Tics and Tourette syndrome." *J Paediatr Child Health* 54(2018): 1148-1153.
4. Hartmann, Andreas, and Yulia Worbe. "Tourette syndrome: clinical spectrum, mechanisms and personalized treatments." *Current Opinion Neurol* 31(2018): 504-509.
5. Stern, Jeremy S. "Tourette's syndrome and its borderland." *Practical Neurol* 18(2018): 262-270.
6. Surén, P., Bakken, I.J., Skurtveit, S Surén, Pål, Inger Johanne Bakken, and Svetlana Skurtveit, et al. "Tourettes syndrom hos barn i Norge." Tidsskrift for Den norske legeforening (2019).
7. Morand-Beaulieu, S., and J.B. Leclerc. "Syndrome de Gilles de la Tourette: défis de la recherche pour améliorer la pratique clinique." L'Encéphale 46(2020): 146-152.
8. Learn About Tourette Syndrome | CDC. https://www.cdc.gov/ncbddd/tourette/index.html. 2021.
9. Muth, Christopher C. "Tics and Tourette syndrome." Jama 317(2017): 1592-1592.
10. Jakubovski, Ewgeni, and Kirsten R. Müller-Vahl. "Gilles de la Tourette-Syndrom: Klinik, Ursachen, Therapie." PPmP-Psychotherapie• Psychosomatik• Medizinische Psychologie 67 (2017): 252-268.
11. Ünal, Dilek, and Devrim Akdemir. "The Neurobiology of Tourette Syndrome." *Turkish J Psychiatry* 27(2016).
12. Hamamoto, Yu, and Yukiko Kano. "Tourette Syndrome." Brain and nerve= Shinkei kenkyu no shinpo 70(2018): 1237-1245.
13. Surén, Pål, Inger Johanne Bakken, Svetlana Skurtveit, Marte Handal, Ted Reichborn-Kjennerud, and Camilla Stoltenberg, et al. "Tourettes syndrom hos barn i Norge." *Tidsskrift for Den norske legeforening* (2019)..
14. Maayan, Lawrence, and Christoph U. Correll. "Weight gain and metabolic risks associated with antipsychotic medications in children and adolescents." *Journal of child and adolescent psychopharmacology* 21(2011): 517-535.
15. Evans, Joel, Stefano Seri, and Andrea E. Cavanna. "The effects of Gilles de la Tourette syndrome and other chronic tic disorders on quality of life across the lifespan: a systematic review." *Europ Child & Adolescent Psychiat* 25(2016): 939-948.

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