

INCREASE IN TICS IN GIRLS DURING THE COVID-19 PANDEMIC: CASE SERIES AND LITERATURE REVIEW

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BACKGROUND AND METHODS

- * A recent follow-up to 2017 UK mental health survey showed that the COVID-19 pandemic caused an increase in the incidence of mental health problems in young people¹.
- * We observed an increase in the presentation of patients with tic-like symptoms to our general CAMH clinic between September 2020 and March 2021. We reviewed this increase in more detail in relation to previous literature on increase in tics in adults and children as well as the context of the pandemic.
- * We reviewed all cases of tics presenting to our clinic. We then contacted patients for further interview and investigations. They were re-assessed by a consultant with a special interest in tic disorders. Here we present the clinical details and important characteristics of these cases and discuss related literature.
- * 12 patients presented for the first time with tic symptoms. All were girls. 5 patients gave consent to take part in more depth interview.

CASE PRESENTATION

10 years old girl reports motor tics which are mild in severity happening on and off for the last 2-3 years. Her mother had not recognised tics until the deterioration in October 2020.

Current motor tics are reported to be head and neck jerking, facial grimacing, shoulder jerking/shrugging, touching others, and finger/hand tapping. In terms of vocal tics, hissing sounds, repeating own words, repeating others speech, unprovoked swearing, and unprovoked offensive comments.

Tics happen every day in episodes lasting for several hours affecting her attendance to school. Her mother reports that these episodes are triggered by loud noise and crowded places.

Premonitory sensations are inconsistent and only happen when she is stressed. She is not able to suppress her tics.

No major stressors or any change at home or school reported at the time to account for the worsening in symptoms. However, her mother reports that patient was having panic attacks happening at least 2-3 times a week since the lockdown. No previous contact with mental health services.

Unremarkable birth and developmental history. She was reported to be an anxious child who started sleeping on her own when she was 7 years old. No known physical health problems. No family history of tics or any other movement disorders. Neurological examination unremarkable.

Symptoms reduced after psychoeducation. No medication required.

LITERATURE REVIEW AND DISCUSSION

We saw an increase in the exacerbation of tics symptoms in patients with an established tic disorder. This is in line with recent studies investigating the effects of COVID-19 on people with tic disorders. A recent survey investigating the effects of COVID-19 on young people with tic disorder during the lockdown showed an overall deterioration in 67% of cases with TS². These results were further supported by the findings of a study with an adult sample of TS in which 48% of the participants stated that their tics had become a little (33%) or much worse (16%) since the beginning of COVID-19 outbreak³.

Majority of our referrals were for patients with functional tic symptoms. Given the fact that functional tics are amongst the rare forms of childhood psychogenic movement disorders (PMDs), the recent increase in the number of tic referrals to our clinic is worth noting. All our patients presenting with tics were female which is striking. This is in line with a recent report from two specialist tic clinics in London highlighting a notable increase in referral rates of individuals, particularly adolescent girls, presenting with a sudden onset of motor and vocal tics that are unusual and complex in presentation⁴. In general, later age of onset and female preponderance are common in functional tic symptoms, and contrast with the overall presentation of tic disorders⁵.

Differentiating functional tics from organic tics can sometimes be challenging and co-occurrence of tics and functional tics in the same individual is possible. There are several positive findings that are incompatible with the recognised characteristics of tic disorders to support the diagnosis of functional tics: a) sudden first presentation at a later age b) lack of characteristic waxing and waning of symptoms c) lack of the usual rostro-caudal progression pattern of tics d) less common premonitory sensations (even if they are present, premonitory urges show inconsistent and variable pattern) e) not being able to suppress the movements, even for a brief period. Furthermore, patients with functional tics might have comorbid PMDs or psychogenic seizures and often do not have a family history of any type of tic disorders^{6,7}. Clinical features of our patients presenting with functional tic symptoms seen in table are in correlation with these positive findings.

The correlation between tic frequency and severity and the level of psychosocial stress and negative life events were shown by several studies⁵. Although no longer required for diagnosis, higher likelihood of a psychological stressor before the onset of functional symptoms is shown in several studies. Furthermore, patients with tic disorders or PMDs show a high prevalence of co-morbid anxiety disorders which was also the case in 80% of our patients⁷.

Clinical features of the patients presenting with tic symptoms

Case	Age of onset	Phenomenology of movements	Vocal tics	Premonitory sensation	Volitional suppression	Comorbidity	Family history
1	Mild tics starting at 7-8 years old Deterioration in tics since October 2020	Head and neck jerking, facial grimacing, shoulder shrugging, finger/hand tapping, clapping, slapping herself	Hissing sound, palilalia, echolalia, and coprolalia	Only when stressed	no	Generalized anxiety disorder with panic attacks	no
2	13 years old sudden onset in November 2020	Started with finger tapping and then moved onto head and neck movements (such as moving head back, facial grimacing)	Screaming, coughing sounds, blowing raspberries, saying certain phrases	Inconsistent (sometimes gets a shiver or an urge – 'weird feeling in neck')	no	Sleeping problems	no
3	13 years old, onset in September 2020	Shoulder movements, touching her nose, occasional blinking, mouth movements, finger clicking	Making noises and shouting out things	no	yes	anxiety	no
4	9 years old, sudden onset of tics in September 2020 after an episode of heightened anxiety due to a stressor	Shoulder shrugging on both sides with head jerking, shaking, rolling up of eyes	Sniffing sounds	yes	rarely	Mixed anxiety and depressive disorder	no
5	15 years old, sudden onset of motor tics in September 2020. Vocal tics started around November 2020	Jerking head & neck, finger clicking, blinking or squeezing eyes shut, hitting chest	Noises such as clicking with mouth, whistling, random phrases, copropraxia	yes	mostly	Social anxiety Panic attacks History of specific phobia	yes

CONCLUSIONS

- * Increased stress and anxiety, change or lack of routine and decreased distractions or physical activity due to lockdown might be possible underlying mechanisms for presentations with tics in individuals with possible underlying genetic vulnerability^{2,3,4}.
- * Symptoms were reduced or disappeared after psychoeducation in the majority of our cases which was also highlighted in other studies^{4,6,7}. General recommendation for management of functional tic disorders would be supportive therapy including psychoeducation and reassurance. Further behavioural and psychological approaches should be considered depending on the needs of the individual cases.

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