

COVID-19 related increase in childhood tics and tic-like attacks

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EXPLOSION OF TICS

Since the onset of the COVID-19 pandemic, paediatricians and child mental health practitioners have noticed an increase in tic symptoms in some children and adolescents already diagnosed with tic disorders.¹ Interestingly, clinicians have also seen a marked increase in presentations of sudden and new onset of severe tics and 'tic-like' attacks.

There is an urgent need to collate systematic data on this group as this is a rare and unusual subtype of tics and Tourette syndrome, differing in age and type of onset and expected patterns of tics. Typically, childhood tics start around 5–7 years and show a waxing and waning course of predominantly motor tics, more commonly affecting boys in a ratio of 4:1. The new surge of referrals consists of adolescent girls with sudden onset of motor and phonic tics of a complex and bizarre nature. In London, UK specialist tic clinics at each of the two children's hospitals, each centre received four to six referrals per year (out of a total of approximately 200 in 2019/2020), which were acute onset tics in teenage girls. In the last 3 months (end of 2020–January 2021), both centres have been receiving three to four referrals per week of this nature which, if it continues, would amount to 150–200 cases per year and effectively double the referral rate.

Initial impressions are that these adolescent girls fall into two groups: the first present with explosive functional tic-like movements on a background of diagnosis of, or vulnerability to, motor and phonic tics. The second group comprises florid, completely new onset tic-like disorder that appears functional in nature. Both groups may have undiagnosed neurodevelopmental impairment, autism spectrum disorder (ASD), specific learning difficulties and attention deficit hyperactivity

disorder (ADHD). Distinguishing these two subtypes can be challenging; however, the likelihood is that in either case the precipitating factor for symptomatology and impairment is anxiety (probably in part COVID-19 related), and importantly, the same management strategies are suggested for both of these groups.

CASE EXAMPLE: 14-YEAR-OLD GIRL, AB

AB developed explosive onset of motor and phonic tics in November 2020. On careful history taking, this occurred the day after the announcement of another COVID-19 lockdown period. The tics mostly occurred in school and resulted in her being sent home. They included complex head turns with neck thrusting and flailing movements of the hands, together with some coprolalia and yelping noises. There was no premonitory urge reported. There was an associated indifference to the phonic tics without evidence of embarrassment, which is unusual in tic disorders. A history of childhood tics was absent. AB described herself as a shy child, anxious in social situations and she identified herself as having autistic traits although she had not been assessed for autism. AB admitted to searching various media sites and reading about Tourette disorder and uploading videos of her tics on TikTok.

There was a family history of autism, ADHD and Tourette syndrome.

On examination, there were many florid tics, some which exacerbated on action and interfered with the motor examination and that were incongruous with usual motor tics. There were positive examination features of a functional diagnosis and an intermittent tremor that could be entrained. The formulation in this case was of functional tic-like episodes occurring in a girl with a probable tic predisposition and with some traits of ASD. We provided reassurance and psychoeducation with suggestions for selective attention strategies that resulted in a positive effect. A referral was made for further evaluation of anxiety and ASD.

FUNCTIONAL TIC-LIKE ATTACK DISORDER

The clinical impression is that these florid presentations of tics in teenagers

has at least a partial component of functional neurological disorder that have been identified as functional tics and tic-like attacks.^{2,3} Neurological examination reveals no focal abnormalities, and investigation is unremarkable, as is the case in Tourette syndrome. The adolescents present acutely, and they and their families are invariably distressed and frightened, may have presented to emergency services and sought multiple opinions about the new symptoms. It is hypothesised that this unusual presentation is related to lockdown, change in usual structure and routine, social media related events/bullying and pandemic-related stress in vulnerable adolescents. Stress may be unmasking a tic predisposition in some, while in others compounding existing vulnerability to anxiety, for example, underlying neurodevelopmental or emotional difficulties to the point of becoming overwhelming.

Careful assessment, diagnosis and reassurance together with a sharing of the presumed diagnosis of tic-like functional symptoms is recommended. There is increasing evidence that personal, family and professional anxiety serves to exacerbate and prolong episodes, while clear explanation, reassuring and calm management can reduce or even eliminate occurrences.³ As in other functional neurological disorders, the child may be unable or unwilling to articulate stress or emotional symptoms. More in-depth discussion with the young person, with careful evaluation and questioning of carers, reveals a significant and upsetting change to routine, with adverse impact on socialisation, education, and emotional and behavioural functioning in the context of the COVID-19 pandemic and lockdown.

Management includes psychoeducation about functional symptoms and tic-like attacks. This explanation in itself can result in a dramatic resolution of symptoms. It is important to note that these young people show little or no response to the usual medications for tics, and we would not recommend prescription.

ROLE OF SOCIAL MEDIA?

There is some concern that social media and websites such as TikTok that promote the sharing of videos of influencers with symptoms may have a part to play. These sites appear to have exploded in popularity; for example, the site TikTok #tourettes (<https://vm.tiktok.com/ZMe8e62aS/> accessed 12 Feb 2021) has 2.5 billion views, having approximately doubled in viewing in the last month

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(January–February 2021). Some teenage girls report increased consumption of such videos prior to symptom onset, while others have posted videos and information about their movements and sounds on social media sites. They report that they gain peer support, recognition and a sense of belonging from this exposure. This attention and support may be inadvertently reinforcing and maintaining symptoms. The role of social media needs further exploration, particularly the potential for ‘contagion’ and the maladaptive gains that might unintentionally arise from this peer identification.

FUNCTIONAL SYMPTOMS AS A PART OF AN OVERALL INCREASE IN MENTAL HEALTH DISORDERS DURING THE COVID-19 PANDEMIC

The adverse impact of the COVID-19 pandemic on adult and child mental health is becoming increasingly evident.^{4,5} Rates of mental health problems in children and young people were 10.8% in the 2017 UK mental health survey. Re-evaluation in July 2020, 6 months into the pandemic and after the first UK lockdown, showed that incidence had risen to 16.0%.⁶

It appears that children presenting with functional symptoms, including functional tics and ‘tic-like attacks’, may be one of the many increases in stress-related difficulties seen in the context of the COVID-19 pandemic. It is important to consider this diagnosis as part of the diagnostic evaluation and investigation of movement disorder presentations, which should include the usual range of examinations and investigations to explore alternatives such as the paroxysmal dyskinesias that

can also exacerbate at times of stress. There is a need for collaboration between paediatric and mental health services. Once a positive diagnosis of functional tic-like attacks has been made, optimum management is likely to include integration of paediatric and mental healthcare⁷ and ensuring children and families understand the diagnosis and the usefulness of behavioural/psychological intervention.⁸ There are new data showing that referrals to child mental health services in September 2020 were 72% higher than in September 2019.⁹ It will be important that functional and mental health aspects are considered in the likely increase of physical presentations associated with long COVID in the coming year.

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REFERENCES

- Conte G, Baglioni V, Valente F, *et al.* Adverse mental health impact of the COVID-19 Lockdown in individuals with Tourette syndrome in Italy: an online survey. *Front Psychiatry* 2020;11:583744.
- Demartini B, Ricciardi L, Parees I, *et al.* A positive diagnosis of functional (psychogenic) tics. *Eur J Neurol* 2015;22:527–36.
- Robinson S, Hedderly T. Novel Psychological Formulation and Treatment of "Tic Attacks" in Tourette Syndrome. *Front Pediatr* 2016;4:46.
- Pierce M, Hope H, Ford T, *et al.* Mental health before and during the COVID-19 pandemic: a longitudinal probability sample survey of the UK population. *Lancet Psychiatry* 2020;7:883–92.
- Newlove-Delgado T, McManus S, Sadler K, *et al.* Child mental health in England before and during the COVID-19 lockdown. *Lancet Psychiatry* 2021;11:S2215-0366:30570–8.
- Vizard T, Sadler K, Ford T. Mental health of children and young people in England 2020, wave 1 follow-up to the 2017 survey. Available: https://files.digital.nhs.uk/CB/C41981/mhcy_2020_rep.pdf [Accessed 29 Jan 21].
- Heyman I. Mind the gap: integrating physical and mental healthcare for children with functional symptoms. *Arch Dis Child* 2019;104:1127–8.
- Robinson S, Bhattoa RS, Owen T, *et al.* Functional neurological movements in children: management with a psychological approach. *Eur J Paediatr Neurol* 2020;28:101–9.
- Longfield, A The state of children's mental health services 2020/21. Available: <https://www.childrenscommissioner.gov.uk/report/mental-health-services-2020-21/> [Accessed 29 Jan 21].