Indecent exposure in chromosome 4q deletion syndrome

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Chromosome 4q deletion syndrome is a rare genetic disorder[1] associated with a number of conditions such as cardiac, craniofacial, digital, and cognitive impairment, although the rarity of this condition causes difficulty in establishing genotype-phenotype correlations.[2] The presented case is one of a 20 year old male with chromosome 4q deletion syndrome and a moderate learning disability. He was residing in an inpatient service following an increase in sexualised behaviours and reports of indecent exposure in front of children and members of the general public.

Chromosome 4q deletion syndrome is a chromosomal disorder caused by interstitial and terminal deletions of the long arm of chromosome 4.[1] There is consensus in the literature that the syndrome is characterised by intellectual disability, craniofacial dysmorphism, rotated or low-set ears, cleft palate, micrognathia, heart defects, craniofacial, skeletal and digital abnormalities, and occasionally autism spectrum disorder (ASD), behavioural disorders, and developmental delay.[2] The severity of malformations varies widely, depending on the position and size of the chromosome deletion;[4] mortality rates are reported at 28%[3] and the male to female ratio of incidence is approximately equal.[4] The presented case was targeting all age groups when indulging in sexualised behaviour and indecent exposures that were impulsive and without any warning.

Case presentation

The patient was a 20-year-old male with whom social services had been involved from a young age and was placed under a care order from the age of three years due to neglect in the family home. He may have been aware of domestic violence between his mother and her ex partners and it is believed that his biological father died of an accidental drug overdose. The patient lived with his mother; although he had regular periods of respite with a foster family until the age of 10 years, as there were continued difficulties in the family home associated with drug and alcohol misuse and it is documented that at a young age the patient accidently took his father's methadone. His foster carers raised concerns around the patient's behaviour because he displayed aggressive behaviours to other children including his sister. He also displayed inappropriate sexualised behaviour and language both at home and in school, and he regularly smoked cannabis, which is believed to have been obtained from family friends.

It is reported that during his youth the patient had a number of health issues such as nocturnal enuresis and aplastic anaemia, which was successfully treated with a bone marrow transplant at around seven years of age. The patient was also closely monitored due to reported low levels of testosterone; he was diagnosed with a moderate learning disability and attended a special school until the age of 18 years. Upon reaching adulthood the patient lived in a respite centre five days a week, although would spend two days a week at his mother's home. The patient also began attending a training skills based day service, which was initially successful but he is reported to have absconded. He was excluded from this placement following an incident where he attempted to set a peer on fire during an activity. As well as displaying physical and verbal aggression the patient would make sexually inappropriate comments and would be quick to anger.

He was referred to the Community Team for Learning Disabilities (CTLD) through transition from children's services. The initial referrals requested for support around sex and relationships. An IQ assessment was completed in February 2016 that revealed the patient achieved a full scale IQ score of 48.

Presentation prior to admission

The patient moved into supported housing and prior to admission was reported to the police following indecent exposure to children in public. He also set his flat on fire when angry and displayed an increase in sexualised behaviours towards other residents and made threats to 'rape' them. There were signs that the patient had also been taking recreational drugs, including cannabis and cocaine, resulting in numerous admissions to the local accident and emergency department. Concerns were also raised that a group of individuals

(who the patient calls his 'friends') may have been exploiting the patient and allegations were made that he was being provided with drugs in return for sex. A Mental Health Act Assessment was completed at the patient's residence, which resulted in him being detained under Section 2 of the Mental Health Act.

Mental state on admission

The patient was difficult to engage and it was very hard to establish rapport. There was evidence of self-neglect. His speech was normal. Mood was irritable objectively with no ideas of self-harm and no ideas of harm to others. He was not observed to be responding to unseen external stimuli. There were some elements of cognitive impairment. He lacked insight into his mental health illness.

Presentation and treatment on admission

On admission a physical examination was completed, including a drug screen, which tested positive for cannabis and buprenorphine. Routine blood tests revealed a B12 deficiency and hydroxycobalamin injections were prescribed, which were administered every three days for two weeks. A routine ECG was completed and no concerns were raised. A Malnutrition Universal Screening Tool (MUST) assessment continues to be undertaken on a weekly basis as the patient's weight has decreased since his admission, for which he was referred to a dietician.

Whilst detained on an inpatient unit the patient absconded by climbing out of a window on one occasion and he indecently exposed himself to members of the public. Police were informed and returned him to the unit. He was prescribed risperidone 0.5mg BD and responded well.

On the whole the patient presents as settled and engaging positively on the ward; he appears to have a positive relationship with most of his peers and staff, although assessments continue to identify that he displays sexualised behaviours, which involve exposing himself and masturbating in communal areas. His Section 2 status was transferred to Section 3 to continue treatment, which incorporates medical as well as therapeutic models of working to implement interventions that reflect the correct level of support for his current needs.

Discussion

It is likely that the patient's learning disability, associated with his diagnosis of chromosome 4Q deletion syndrome, has resulted in a number of difficulties. For example, his ability to establish cause and effect, plan and make judgements by considering consequences, and to learn and retain new information. The patient also experienced some difficulties in his early life with reference to his family relationships, multiple changes in living situation and exposure to drugs and alcohol. Such experiences may have made it more difficult for him to understand appropriate relationships and the impact of drug misuse, which left him vulnerable to external influences such as potentially exploitative peers. It is possible that this vulnerability in understanding what is appropriate resulted in him continuing to engage with such individuals and maintain antisocial and sexualised behaviours and substance misuse. His difficulty in learning and retaining information may impact on his ability to understand the consequences of his actions; his adapted responses in presenting as more capable than he is can result in others overestimating his ability, which may prevent others from supporting him appropriately. Similarly, there were reports that he was being sexually exploited by others in exchange for drugs; this may have been distressing for him and may have normalised such behaviours in front of others. If sexualised behaviour is a part of chromosome 4q deletion syndrome then appropriate sex education should be delivered at the earliest opportunity to reduce the risk of vulnerability, along with treatment in the form of the biopsychosocial model tailored according to needs. Individuals with chromosome 4q deletion syndromes or with other mental disabilities who engage in sexual behaviors may encounter societal prejudice and may be at risk of physical, financial and emotional exploitation. Similarly, the patient has aplastic anaemia, which results in increased experiences of fatigue and low mood. This may impact upon his levels of motivation to develop more prosocial skills, which is compounded by his learning difficulties. However, as a link between aplastic anaemia and chromosome 4q deletion syndrome has not been established it is not yet possible to fully explore any potential correlational or causal association; a follow up report would make an interesting review.

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Declaration of Interests

No conflicts of interests were declared.

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