Ewan's Story: Psychosis in Intellectual Disability and Autism

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Introduction

Ewan's Parents provide a personal account of the challenges that mental illness present in a young person with intellectual disability. It emphasises the hardship and anguish that Ewan and his parents faced; the essential importance of good quality mental health services for young people with intellectual disabilities; and the importance of cross specialty and agency collaboration.

Parent Experience

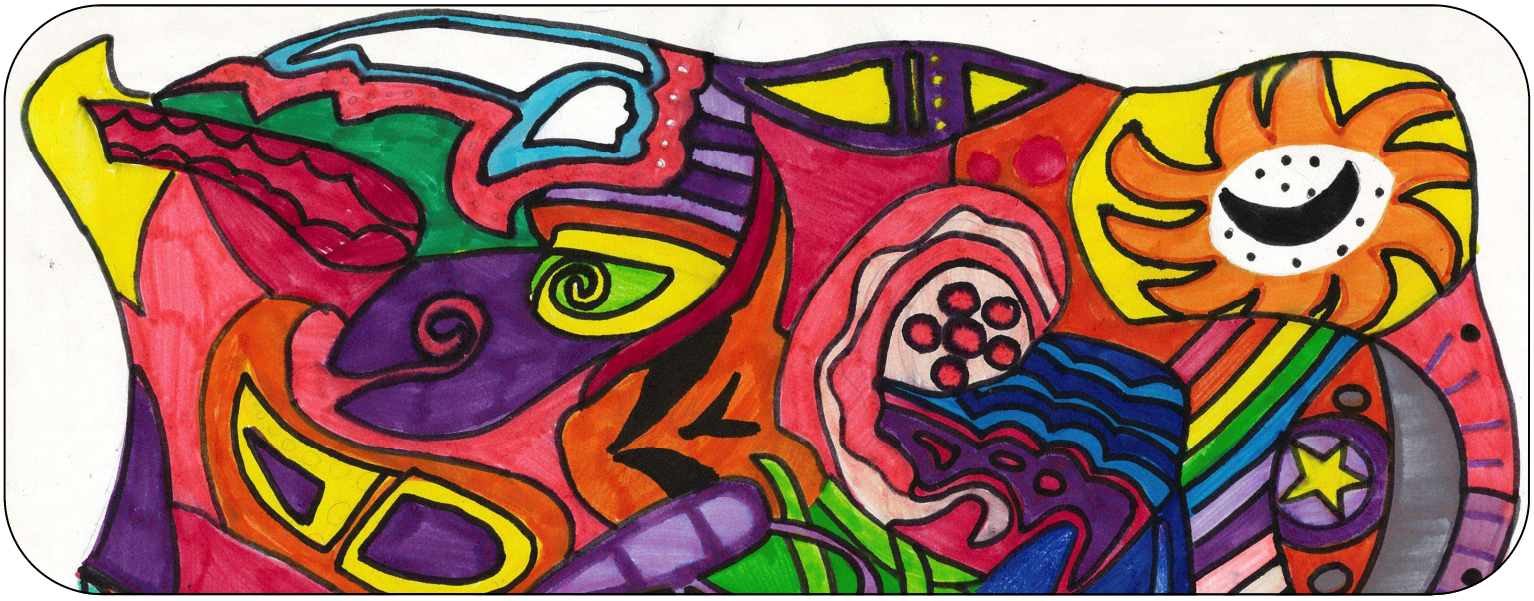
Ewan's Story

Our 15-year-old son Ewan has a chromosome 18p deletion which was diagnosed just before his 3rd birthday. He has a significant intellectual disability, hypotonia, sensory issues, a divergence in his left eye, and required grommets/t-tubes from 8months to 13 years. He had no other health issues until March 2015 when he started high school at age 13 years.

Ewan attended a mainstream Catholic Primary School with learning support. He loved school and couldn't wait to get there in the morning. He would be disappointed on the weekends when he couldn't go. He behaved extremely well while there, always completing his work and was respectful to his teachers. While he was shy and would tend to stay on the outer of activities, he was well liked by his peers and teachers. His best friend was a girl with Down syndrome and the pair were always together being cheeky and happy. Towards the end of primary school Ewan hit puberty with seemingly little affect.

Towards the end of 2014, Ewan completed a transitional program at our local Catholic High School, where he was due to start in February 2015. There were a few teething problems due to the level of care which Ewan required, within a week these were addressed and Ewan was deemed to be doing well. His case manager even commented that he was star pupil material!

At the start of high school, there were a few teething problems with the level of care Ewan required but these were addressed promptly. In March 2015, Ewan began displaying some strange behaviours, he would watch the neighbour's trees from the upstairs windows saying there were things in them wanting to kill him. He would slam shut all our window shutters and he kept going on about a girl trying to get him. When



> "Back at home things continued to deteriorate, Ewan was changing from a happy boy to a violent child..."

asked where she lived he replied "in the trees". He began removing all his toys from his bedroom because 'the girl was touching them'. While in the shower he would scream at something he believed was sitting on the toilet and would make us sit there while he watched muttering away to himself. He took to screaming at the television whether it was on or off. He would scream at our ceiling fans which I eventually covered with pillow cases. It appeared to be reflective surfaces which upset him. When we were in the car he would scream at the windows and try to get out of the car. We had to put the child safety locks back on the doors and the windows. It was around this time that Ewan's best friend went away for 3 months without warning. We had been unable to prepare him and when she did return Ewan would have nothing to do with her.

In April, the family went on holiday to the beach, while we were there I was on my own with Ewan when he had a major episode in the car, physically assaulting me, screaming and trying to wrench the dash board off. I pulled over and got him into the back seat, he continued to kick and punch for about 10 minutes, this continued for sometime and at one point he appeared to be having a seizure when in fact he was shaking with sheer rage.

I had previously tried to see Ewan's long term paediatrician, but had to wait 8 weeks for an appointment. Several services I was asked to contact kept directing us to other services.

Back at home things continued to deteriorate, Ewan was changing from a young boy who was happy, lively full of energy, who loved to play electronic games, ride his scooter, swim, go to acrobatics and watch TV to a very angry, tormented, withdrawn and violent child. He lost interest in everything and would pace the house for hours. He never had a problem going to bed and to sleep at night. All of a sudden he would be up till all hours, completely manic, chasing the cat laughing, or smashing up the house in anger. He started hurting our cat, something he had never done before.

By late April 2015 we had an appointment with the local youth mental health service. Over the next few months we met with a multidisciplinary team consisting of a psychiatrist, community nurses and an OT. Ewan was diagnosed with psychosis and commenced on risperidone. The team supported him with frequent home and school visits, however we were often told by some members of staff that this was 'not their area of expertise'.

Over the following months, Ewan developed dystonia to the point where his head was permanently turned toward his shoulder. He began constantly putting his fingers in his mouth, he started talking to his hand and would squeeze it quite viciously when angry. He would also pull his hair, hit his head and frequently cry stating "I can't take it anymore". A brain MRI showed no abnormalities but his cognitive abilities deteriorated. He had difficulty processing even the simplest things, his speech previously was very limited became increasingly more difficult to understand, which often led to meltdowns. He also lost all interest in events that he used to find exciting.

Things were deteriorating at school, Ewan was no longer able to attend many of his classes. Following meetings with counsellors from the Department of Education, it was decided that Ewan should attend a government school for specific purposes in 2016.

In January 2016, Ewan was admitted to an adolescent psychiatric inpatient unit for 6 weeks. His risperidone was replaced with a low dose of quetiapine, which had little effect. This led the doctors to conclude that Ewan was not suffering a psychiatric illness but rather a deterioration in his disability. Information from the Chromosome 18 registry in San Antonio, Texas did not help clarify the situation except to confirm that Ewan's condition was not common for Chromosome 18p. We regularly visited Ewan in hospital, where he would ask to go home, and when told no, would become angry and violent. Towards the end of his stay his quetiapine was stopped and sodium valproate was commenced at a low dose but overall we felt the inpatient stay was of little benefit.

Once home, Ewan commenced at a school for specific purposes for intellectual disability. He would refuse to put on his uniform or get on the school transport.

We pursued an appointment with a Neurologist at the children's hospital who referred us to a Child Psychiatrist with a special interest in intellectual disability with whom we had our first appointment in March 2016. He agreed that Ewan was suffering psychosis, and was optimistic about treatment but stated it would take some time. Over the next year we saw him monthly and trialed different drug combinations, including

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Clonidine, Fluoxetine, Melatonin, Propranolol, Epilim, and Quetiapine.

During this time, the level of violence was increasing. Ewan would kick windows, doors and assault his family members. We had to install Perspex on Ewan’s bedroom windows and a lock on his bedroom door. For safety reasons, Ewan was spending more and more time locked in his bedroom which resulted in more screaming and property damage. We needed help and were advised to call the police, however by the time the police arrived Ewan had exhausted himself and was asleep. The Police were sympathetic but unsure of how they could help, except reporting an incidence of domestic violence. In July, Ewan had an extremely violent outburst; I called the police and told them that I could no longer have Ewan in the house. The police called an ambulance to take him to hospital, which Ewan refused to get inside, and so I ended up driving him myself with a paramedic in the car.

At the local hospital, he was agitated and violent towards me. The Emergency Department consultant contacted the children’s hospital psychiatry team who recommended paliperidone intramuscularly and an increase in his quetiapine. He was transferred to the local children’s ward where the pharmacist opted to disregard the paliperidone for a much lower oral dose of quetiapine.

Over the next week I had meetings with paediatricians, the government disability service, and a hospital social worker, who concluded he was not suffering psychosis but “a deterioration of his disability”. They recommended I take him home; I refused. After a phone call with a senior manager, it was agreed they would support us. We did not want to give our son up, but the level of violence gave us no choice and we had to protect our other child. Ewan stayed at an NGO disability respite home, a service we were familiar with but after 3 nights they had to call the police. He was taken back to the local hospital and was given intramuscular droperidol.

The children’s hospital psychiatry team was contacted and recommended the intramuscular paliperidone again. He was then transferred to the local paediatric inpatient service, where they refused to diagnose a psychiatric illness. After nine nights, Ewan was discharged back to the NGO disability respite service. The NGO’s prn administration policy meant that Ewan didn’t always receive prn medication when needed.

A month later after another escalation, police call and hospital visit, Ewan was taken to the government disability service run respite facility until a more permanent placement could be found. Ewan enjoyed the new facility which was better suited for his needs. We were still seeing the children’s hospital psychiatrist and still trialing Ewan’s medications.

In September, Ewan moved into a two-bedroom house with carers from an NGO who were experienced in aged care. The new environment did not suit him and after, numerous escalations and violent episodes, the police were again called. After a brief stay at the paediatric emergency service, Ewan was transferred to the child and adolescent inpatient unit at the tertiary children’s hospital for an observation period. During his stay, his only aggressive outburst was when he was fasted for too long during a repeat MRI.

Ewan was discharged back to the two-bedroom home with a new team of carers who were trained to deal

with children with severe behavioural issues. Around this time, we began to see a difference in Ewan; he was less violent, he didn't appear to be suffering from hallucinations, he was enjoying going to school, and sleeping better. He was becoming cheeky again. The staffing ratios were reduced; and staff reported that they all enjoyed working with Ewan.

In November, we started having Ewan home for short visits with a carer. Over the next six weeks these visits gradually increased, until December when he finally came home.

The last 10 months have been difficult. We have had regular meltdowns but are usually able to find a reason for them. Ewan is very much a toddler in a teen body and will have tantrums if he doesn't get his own way. This is challenging considering he is 60kgs and over five foot. He is very food driven and as his hunger can lead to a meltdown, I've learnt to always have food available. His speech remains an issue but slowly he is working out ways to make himself understood.

Ewan has received an excellent NDIS package which has enabled him to access speech, occupational and behavioural therapy. He attends regular respite which he adores. He has grown to love school again, where his teacher is amazed at the progress he has made. He is beginning to enjoy activities that he has not looked at for almost two years such as playing the Wii, swimming and acrobatics. He enjoys colouring in, cutting out his pictures and gluing them in a scrapbook. If we go out somewhere he is extremely sociable saying "hello" to everyone. He sleeps well and will go for a nap if he's tired. He laughs and plays little pranks on us. The other day I asked him if he was happy and he replied "yes"! Ewan is not the little boy he was two years ago, but with the right combination of drug therapy he's no longer a tormented angry violent child.

Psychosis in Intellectual Disability and Autism

By David Dossetor

Ewan was 14 when he presented for a psychiatric second opinion. The referring neurologist described him as suffering from a paranoid psychosis associated with becoming aggressive, destructive and violent. He also had a deletion of the short or p arm of chromosome 18. Quoting a review of the behavioural phenotype literature, his parents reported that since he had 18p deletion he should be suffering anxiety, whereas it is 18q (long arm) deletions that have the psychotic, manic and depressive disorders. In the last few years, with the rate of the genetic revolution, every month I meet a new patient with an unfamiliar or newly described genetic abnormality. However, it was novel for a family to challenge the psychiatric diagnosis in their boy with severe intellectual disability based on the genotype!

Their concerns included loss of skills starting a year previously on transition to high school. He became violent and tormented, pacing the house, walking up and down stairs and around the garden. In mainstream primary school, he was able to complete most of his classes. At high school he needed significant support, he withdrew from all his friends, including his girlfriend who had Down syndrome. He was getting lost and wouldn't know where to go in the classroom.

At home he lost interest in his preferred activities and his self-care skills declined. He appeared unhappy and angry. He cried frequently. There was a change in his sleep pattern, waking in the night and often staying up. He lost concentration down to 10 seconds. He became intolerant of going out and noise. He now also hit, kicked and bit his mother several times a day. He punched himself, whacked his head on the floor, pulled his hair and threw furniture. His speech changed so that he would only speak in the present tense. He didn't like touching or cuddling, when he used to always give a kiss. In interview, he showed a habit of talking to his little finger in indistinct language.

He seemed to have depression with psychotic features and developmental regression. He also had an autistic pattern of development and behaviour. He was started on fluoxetine 10 mg.

The introduction also highlights how thoughtful, informed and caring his professional family are. They also showed great determination and communication skills in negotiating his care needs, when it became too dangerous to care for him at home. The treatment process was a joint exploration of his symptomatology and impairment, as it relied so much on their observation than on his communicative capacity of his mental state.

At initial follow up he was agitated, hyperactive, stimming and giggly but his parents felt he was 10-15% better with improved mood. However, he continued to have meltdowns daily for 10-30 minutes. He remained anxious. It was difficult to distinguish between possible behavioural activation from fluoxetine and partial treatment of his depression and hypomania. We increased his fluoxetine to 20mg, increased his valproate to 100mg am and 200mg pm. The increase in fluoxetine had no benefit. A trial of propranolol for anxiety had no effect. We added quetiapine XR 50mg morning and afternoon and 50mg IR at night.

Over the next month there was an increase in non-contingent violence, requiring help from the mental health emergency services and child protection services. At representation at his local hospital for violence, he was deemed 'not psychiatric' and was discharged into the care of Family and Community Services (FACs), as he was unsafe to be at home. Following a further attendance to the hospital for violence, we provided telephone advice to start him on depot paliperidone 100mg/4 weeks. At outpatient follow up, due to the continuing level of violence his quetiapine was increased to 100mg XR bd and 100mg nocte. The differential diagnosis of bipolar disorder versus a paranoid psychosis was considered.

There was no doubt that skilled violence minimisation skills were needed in his residential setting. The specialised government funded disability respite home was both better trained and a more suitable environment to keep him safe and protect staff from injury. He was also better managed at his school.

With on-going diagnostic concerns, he had a planned two-week admission to our in-patient service. There were no incidences of violence while an inpatient with episodes of increased agitation being managed with additional quetiapine and distraction. Ewan displayed high levels of engagement in activities and some capacity for engaging with other teenagers and staff. It was also observed that he talked to his right hand when he was in a good mood and his left hand when he was in a bad mood. His behavior was seen as characteristically autistic, and the self-talk did not convince staff that he still had an active psychotic process, even though it was felt that he had had a psychotic illness from which he was starting to recover. Two months later, with steady continued improvement he returned to live with his family, although there remained high levels of anxiety about his potential for explosiveness. He did have some hour-long meltdowns requiring additional quetiapine. He was still very demanding, but with his steady improvement in mood and energy, and improvement in his language, he started to be able to accept negotiation of what he could or couldn't do, and back down and wait, rather than explode. He has even started singing again and enjoying occasional visitors.

Two years after onset and one year after presenting to me, he was doing well and presented very differently. His parents described him as a different child, happy, seeking an interest in things, talking more, eating well, sleeping okay. He was happy to go to school. His skills were progressively returning. He was playing with another child. In the six months they had had him home, he had had seven episodes of violence. However, they were always able to work out afterwards what provoked it. For example, he would become angry when he was hungry. After school, he was often a bit agitated but with a snack he was happy again by the time they were home. He reverted to his 'toddler behaviour' of wanting attention all the time. He was smarter. For example, if Mum said 'no' he would go to Dad to see if he would give him what he wants.

His teacher reported that he had made the most progress that he had ever seen in a child. The majority of his self-care skills returned. He still self-talked but not to his hand. Although they had a good National Disability Insurance Scheme (NDIS) plan, they didn't use much of it as they were now able to care for him again as a family. Community-based respite required one-to-one support. Overall, they felt he was 75% back to his normal personality. They see glimmers of the old cheeky lively socially engaging boy they had.

Current Medications
He is still taking Seroquel 200 mg XR at 7 AM and 2:30 PM and 200 IR at 7 PM and PRN, valproate 200 mg at 7 AM and 7 PM and depot paliperidone 100 mg four weekly IM. He is on benztropine 0.5 mg at 7 AM and 7 PM as his face was parkinsonian and expressionless. It is likely that he will need treatment for at least a year to come.

Reflection on Ewan's case study

In patients with severe intellectual disability, attention to a detailed history is critical, and given the clear description provided by his parents above, it is unlikely that any psychiatrist would dispute a diagnosis of a psychotic illness, but this is often more difficult in the context of a presentation to an emergency department. In retrospect, one can see that he had a progressive intellectual decline over a period of a year, but in those with limited skills this is often difficult to define. It seems clear that he has had a psychosis with significant depressive content but he did not respond to antidepressants nor did he respond to low levels of antipsychotics. In adolescence, it is often difficult to distinguish between Depressive Psychosis and a Schizoaffective Disorder. His social skills remain at a two-year-old social and developmental age with an inability for turn taking except when supported by an adult.

At the most distressing and disturbed stage of this illness, health services responded with diagnostic overshadowing: the family was told by a paediatrician that his developmental decline was part of his intellectual disability and psychiatrists saying there was no psychiatric disorder to explain his violence. Yet it was also

striking that even significant doses of a major tranquilliser (quetiapine) did not halt his decline. It was the addition of a second major tranquilliser (depot paliperidone) which coincided with the change in the course of his illness. The increased and extreme violence was associated with a psychotic illness and there was a failure to appreciate the severity of his mental illness. As the literature describes, the decline in skills and ability is the most evident feature of psychotic change, although difficult to measure, and, due to his disability and limited communication, it was easy to minimise the severity of his mental health symptoms. In my experience, psychosis in those with intellectual disability is often slower to recover, but then the length of the illness may also be affected by any delay in diagnosis and treatment. Arguably the service collaboration between Mental Health, the government disability service and FACS was the optimal approach to manage him in a community setting. The current service structure has no specialist mental health services for those with intellectual disability. In the future and with the transfer of state funded services to the NGO sector and their specialist respite services, staffed by people

> "In patients with severe intellectual disability, attention to a detailed history is critical..."

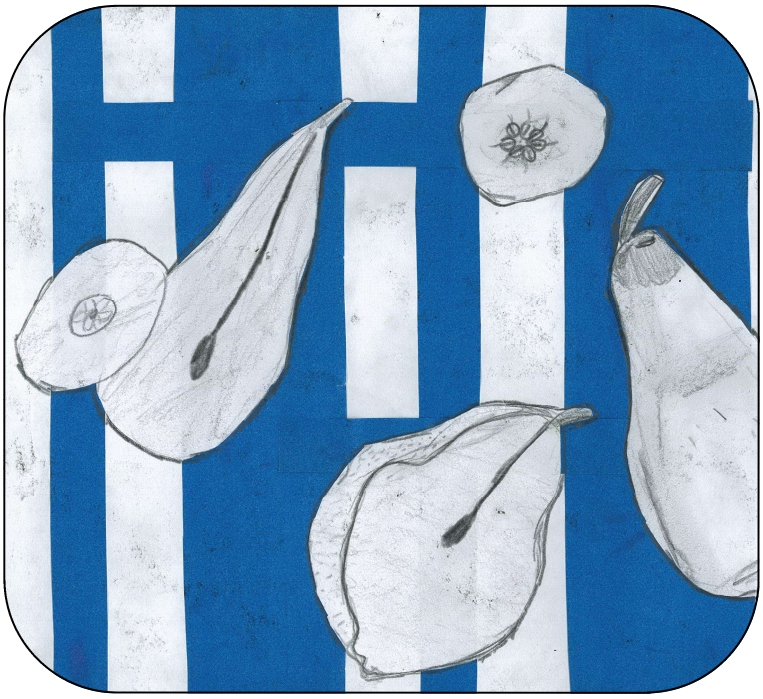
skilled in aggression minimisation for those with intellectual disability, I fear that there will be a lack of a service setting to manage such clients.

The links between ASD, psychosis and genetics: review of the literature

This family provided me with an unusual if not unique challenge, arguing for a psychiatric diagnosis in their boy with severe intellectual disability based on his genotype! There are a number of well-known genetic conditions that have a marked increase of a psychotic diagnosis from the genetic abnormality, notably 22q11.2, velo-cardio-facial syndrome, which has 25% risk of psychosis, the same risk as that of an identical twin of someone with schizophrenia. In 22q11.2 this risk of psychosis is unrelated to the premorbid presence of ASD, but does seem to be related to cognitive decline in adolescence. Prader-Willi syndrome, 15q11-13, also has an elevated risk, especially those with uniparental disomy in whom 62% were found to have psychosis versus 17% of those with deletion (Soni et al, 2007). The latter remains a high risk.

Autism (although not associated with a specific genetic disorder) is reported by some as having a marked increased rate of psychosis, as high as 28% in one study. However, Selden and colleagues (2015) in a population-based study found an increased odds rate of 5.7. Howlin (2000) in her longitudinal follow up study of high functioning ASD suggested a prevalence of schizophreniform disorder in 10% and another 3% meeting criteria for schizoid disorder. Lai and Baron-Cohen (2015) identified the problems of diagnosing ASD in adulthood often including: a lack of developmental history, the acquisition of camouflaging strategies, the high frequency of co-occurring disorders, and problems with differential diagnoses, particularly anxiety, depression, OCD personality disorders psychosis and other neurodevelopmental disorders.

King and Lord (2010) emphasise the overlap between schizophrenia and autism spectrum, particularly in their broader phenotype. Studies reveal theory of mind deficits in both disorders, mirror neuron deficits, similar under-connectivity deficits in functional imaging



studies, also found in hallucinations and delusions. They share several genetic signals for example parental schizophrenia is a significant risk factor for ASD and copy number variants and Shank3 gene deletions are significant risk factors for both. Both have been described as spectrum disorders.

ASD was originally called childhood schizophrenia and Bleuler, in the 19th century, reported autism was a cardinal descriptor of schizophrenia. Although age of onset traditionally indicated a separateness, these neuro-scientific features suggest significant overlap. King and Lord also suggest some commonality from the benefit from antipsychotics for both conditions, with possible improvements in social cognition and current interests in the glutaminergic system.

Further, Sullivan and colleagues (2013) in the Avon longitudinal cohort study, of over 5000 children assessed at 12 years, showed an increased risk of psychotic experiences in ASD suggesting a shared neurodevelopmental origin. They also point out the commonality of environmental risk factors for both disorders: advanced paternal age, winter season of birth, obstetric complications and maternal infections. In a similar vein, Khandaker and colleagues using the Avon population-based longitudinal study (2014) showed that of the 5.9% that had any neurodevelopmental disorder (ASD, dyslexia, dyspraxia, dysgraphia, dysorthographia, or dyscalculia) had increased risk of psychotic experiences by the age of 9 years. Although all neurodevelopmental disorders were associated with reduced IQ, this didn't account for the increased psychotic experiences (apart from an association with working memory).

Craddock and colleagues (2005) suggest that genetics undermine the longstanding distinction between schizophrenia and bipolar disorder with a number of genes predisposing to both (DAOA (G72), DTNBP1 (dysbindin), COMT, BDNF, DISC1, and NRG1). These observations support the hypothesis that they both lie on the spectrum of social disability and have a common neurodevelopmental aetiology.

Nonetheless the high rates of association of psychosis with genetic deletions generates enthusiasm about the genetic causality of psychosis from a wider research community than those who work with people with intellectual disability.

Diagnosing psychosis from a genetic diagnosis, especially a deletion of chromosome 18.

In the review of literature on chromosome 18 deletions and associated psychiatric disorder, the findings may be a little more ambiguous than '18p deletions leads to anxiety disorder and 18q leads to psychotic disorder'. Firstly, there is one case report of a 42-year-old man with 18p deletion and paranoid schizophrenia. The above account represents a case 18p deletion with depressive, or schizoaffective psychosis.

Zavala and colleagues reported on the largest study of chromosome 18 behavioural phenotype (2009) and found the following:
Deletions or abnormalities of 18q (the long of chromosome 18) had significant risk of:
depression (58%), anxiety (58%), manic symptoms (25%), and psychotic symptoms (23%); however, they also had ADHD (42%), stereotypic movement disorder (15%), learning disorders (41%) and communication disorders (33%).

Of those with 18p (the short arm) abnormalities:
66% had anxiety, but none had depressive, manic or psychotic symptoms, but they also showed ADHD (67%), stereotypic movement disorders (33%) and communication disorders (33%).
They also reported on those with 18p tetrasomy (a supernumerary 18p chromosome or 'isochromosome') who had anxiety (50%), psychotic symptoms (12.5%), and mood disorders (12.5%).
Accordingly, all three chromosomal disorders were associated with high rates of different anxiety disorders, ADHD, ASD, violence and aggression and other developmental disorders (Zavala et al, 2009). A strength of this study is psychiatric diagnosis was made by psychiatrists with the aid of standardised interviews, blinded to the genetic status.

Chromosome 18 deletions are rare at 1/40,000 births and result in a wide range of physical and develop-

mental abnormalities, including short stature, deafness, epilepsy, intellectual disability, delayed speech, articulation problems and mutism. These are to be distinguished from Edwards Syndrome which an 18 trisomy with such severe developmental problems that they seldom live beyond one year. All reports of chromosome 18 deletions are of small samples, and in this study, there were 13 young people with 18q deletions, 9 with 18p tetrasomy *but* only 3 with 18p deletions, with unmatched and disparate ages from 3 to 32 years.

In the search for a gene for psychosis or bipolar disorder, there may be a distorted motive for the study to focus on the rates of psychosis. Yet the authors are suggesting 25% rates of mania, depression and psychosis on the same 3 cases, although an additional 2 also had depression. What they do not emphasise is that 18q cases also had ADHD (42%), stereotypic movement disorder (15%), learning disorders (41%) and communication disorders (33%); 18p cases also showed ADHD (67%), stereotypic movement disorders (33%) and communication disorders (33%) and 18p tetrasomy also had ADHD (62%), anxiety 37%, mood disorders at 12.5%, stereotypic movement.

How easy is it to diagnose psychosis in ASD and or intellectual disability?

This problem was recently looked at by a study by Larcon and colleagues (2016). In the introduction, they report that the relationship between psychosis and ASD is complex with substantial overlap but age of onset is a distinguishing feature. People with ASD are at greater risk of psychosis, approximately 10% compared with 2-3% of those with intellectual disability. But these previous findings are from small cohorts and there was a lack of systematic study on how psychotic illness presents in ASD. This study considers the hypothesis that maybe psychosis occurs in a genetic subtype of ASD, such as copy number variants rather than single nucleotide polymorphisms and possibly with different characteristics? Alternatively, are features of ASD misdiagnosed as psychotic symptoms, e.g. difficulty in reading other's minds is interpreted as paranoia, communication difficulties as thought disorder, or meltdowns as resembling catatonia? Thirdly there may be a group of symptoms which fit in with both ASD and psychosis, being distinct from each on their own?

"there was little confusion between ASD and psychosis which was always associated with a change from previous functioning..."

They report a cross-sectional study of people with ASD and psychosis (ASD-P). These were compared with a group with ASD with no psychosis (ASD-NP) and compared with a psychosis only group (PO) (substance induce psychosis was excluded). The ASD-P cohort was referred from across UK in 2010-13, were over 16 years and able to give consent for themselves. ASD-P group was 116 (M: F 89:27). They feel assured that they have a typical ASD-P group, as they were referred by experienced clinicians, yet this could also be a selection bias, avoiding referring ambiguous cases or those more impaired e.g. in IQ or negative symptoms. ASD was confirmed with ADOS and ADI-R and psychosis on Diagnostic Interview for psychosis or Mini PAS-ADD and ICD10, DSM-IV-TR, and Research Diagnostic Criteria were used to confirm diagnosis. In practice, there was little confusion between ASD and psychosis which was always associated with a change from previ-

> "Neuroscience research is likely to uncover important commonalities in the underlying brain processes that predispose to mental illness..."

ous functioning and rarely involved a person's special interests or repetitive behaviors.

The results from this study showed: ASD-P had varied age of onset, including some in early childhood (6 were <12 yrs), others in middle age (2 were >45yrs). Onset was variable with 42% with insidious onset (>6months). 71% reported severe impairment for at least 2-3 days and needing admission; 53% had more than one episode lasting more than 2 years. In assessment of lifetime experience: 89% had core affective features; 64% reported affective symptoms occurring concurrently with psychotic symptoms. 85% had delusions, and 82% hallucinations, 30% thought disorder and 50% mania. More than half had a persecutory delusion with or without other psychopathology. Different diagnostic systems agreed in 79%, for Psychosis-NOS 32% & schizophrenia 21%. Compared with PO affective psychosis was similar frequency but schizophrenia was less in ASD-P, which seemed to relate to a larger group of Psychosis-NOS in ASD-P (52%). Only 4 were not taking psychotropic medication, 77% were taking at least 1 antipsychotic, including 8% on clozapine; 50% were on one psychotropic medication, 35% two and 11% three although the most common second medication was an antidepressant/mood stabiliser. Three took a benzodiazepine, two procyclidine (antiparkinsonian agent). Three reported drug reactions or sensitivity to antipsychotics.
Comparing with ASD-NP, ASD-P had fewer women, had lower verbal IQ, were older and scored less on repetitive and stereotypic behaviour.

They concluded that people presenting with ASD with psychosis have fewer stereotypic behaviours, less schizophrenia and more Psychosis-NOS (ie more affective features) than those with intellectual disability. They speculate that higher rates of affective features may be related to shared genetics or long-term stress as shown by the high rates of a bipolar in relatives of those with ASD, and also higher rates of anxiety and depression in this population. The variability of presentation argues against a unique or different form of psychosis in ASD-P. They argue for a stress-neurodevelopmental vulnerability model in which the genetic components are poorly understood, but it could relate to the risk factors for social-communication difficulties and genetic risk for psychosis (such as FOXP2 found in schizophrenia associated with language impairment). ASD-P evidently have differences to psychosis only and diagnosis can vary between different diagnostic manuals. This suggests caution and consideration of more than one diagnostic system. This is a large but retrospective controlled study and clarifying some of these issues would require a large scale and costly epidemiological study.

As is often the case this study excludes those with severe intellectual disability and those with additional impairments, as informed consent was required to participate. For example, they don't comment on Catatonia. Their study confirms that it is important to look for first rank symptoms of hallucinations and delusions (although most of my patients don't have the communicative skills to define this), but also include affective features. Nonetheless it provides limited guidance in those cases that present with deterioration of independence and cognitive skills and who are functionally non-verbal as in the case presented.

Conclusions

The paper by Larcon and colleagues (2016) indicates that psychosis in those with mild intellectual disability should be readily diagnosed and treated in mainstream psychiatry services. This case report shows that diagnosis in those more severely disabled remains a challenge, with little literature to support diagnostic reliability. Indeed, the literature suggests there is inconsistency due to the difficulties of eliciting subjective mental phenomena but this may be made worse by differing diagnostic national and cultural biases between DSM and ICD in those with intellectual disability (Dossetor, 2014). In those with severe intellectual disability this process is often driven by hypothesis testing with treatment, rather than clear diagnostic criteria.

The review of psychiatric diagnosis in chromosome 18 deletions suggests that these deletions are a risk factor for a range of psychiatric disorders as found in other genetic syndromes. The case study confirms that psychosis is a severe mental illness, regardless of genetics or intellectual disability. Although some academics wish to supersede psychiatric diagnosis with genetic and other biomarkers, the wisdom and therapeutics that has arisen from psychiatric classification still needs to be respected as a critical part of medicine.

Genetic risk factors so often predispose to different psychiatric disorders at different developmental stages of life, and the notion of a single genetic or molecular cause for psychosis does not seem any nearer. We

have such limited understanding of the normal development of the mind and what genetic, epigenetic and environmental factors modulate these processes.

Psychiatric diagnosis is a structured process to assess the severity and subtyping of the loss of social reciprocity and adaptability. All psychiatric diagnoses can be seen as classification of different patterns of loss of social integration and attunement. After all, both ASD and psychosis are severe disorders of social reciprocity, and conversely, many contend that major mental illnesses are developmental disorders. Genetic vulnerability supports the linkage between a range of neurodevelopmental disorders and a range of psychiatric disorders. Indeed, we find developmental continuities: neurodevelopmental disorders of attention, communication, intellect and social interaction of infancy predispose to anxiety disorder and ADHD in childhood which predispose to depression and psychotic illness in youth. Neuroscience research is likely to uncover important commonalities in the underlying brain processes that predispose to mental illness.

Finally, the last 70 years history of mental illness and of intellectual disability has been one of progressive deinstitutionalisation with the advance of psychiatric therapeutics and community models of care. If the new NDIS funded disability services exclude those with complex mental disorder and intellectual disability, where will they go: into the care of family and community services, the long stay psychiatric wards, the justice system or homelessness on the streets? With the devolvement of complex disability from a government agency to an insurance scheme, does our community have the will to care for such doubly disabled people?

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