Case Report - The Successful Use of ECT in a Youth with Autism, Major Depression, Severe Intellectual Disability and Self-injury.

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ABSTRACT

Objectives:

To report the successful use of electro-convulsive therapy (ECT) in a youth with Autism Spectrum Disorder (ASD), intellectual disability (ID), Major Depression, self-injurious behaviour and epilepsy.

Method:

Clinical case report

Results:

A fifteen year old youth with severe ID, severe ASD and epilepsy presented with an eight year history of treatment for varying levels of withdrawal, anhedonia, sleep disturbance and severe self-injurious behaviour that had worsened considerably over the previous six months. A diagnosis of Major Depression with melancholic features was made. Positive behavioural support interventions and trials of a variety of antidepressant and antipsychotic medications over an 18 month period produced minimal change. Medication options were limited by the youth's inability to swallow tablets. Major Depression and self-injurious behaviour improved dramatically after nine bilateral ECTs and remained in remission for the next three years.

Conclusion:

This case report adds to the literature supporting the effectiveness and safety of ECT for people with ID. In addition, this case demonstrates that the diagnosis of mental illness can be made in the presence of ID and that ECT should be a readily available treatment option for this population.

KEYWORDS autism, intellectual disability, epilepsy, depression, ECT.

INTRODUCTION

ECT remains an effective treatment for severe depression but there are numerous obstacles to its use, rendering it typically the treatment of last resort (Khalid *et al*, 2008), especially for minors (Walter *et al*, 1997 and Little *et al*, 2002). Despite profound changes over the decades in the manner in which it is administered, with safety and efficacy superior to many medications used in depression, it retains a high degree of stigma (Smith, 2001 and McDonald & Walter, 2013). Its use is very uncommon in children and adolescents, and even more so in those with ID (Collins *et al*, 2012). Literature on the use of ECT in patients with ID is scarce, despite a higher prevalence of psychiatric disorders than the general population (Collins *et al*, 2012). Due to the nature of problems conducting randomised control trials within this population, case reports are the best source of information. The limitations of decision-

making capacity requires a much higher standard of substitute consent, typically by a Mental Health Tribunal, than other treatments (Dare & Rasmussen, 2015).

The diagnosis of mental illness in those with ID, especially in those with limited language, is challenging (Rush *et al*, 2004). Nevertheless, with a suitably modified assessment and appropriate diagnostic criteria, reliable diagnoses can be made (Moss *et al*, 1998). Deliberate self-injury is common in those with ASD, with the prevalence inversely proportional to IQ (Holden & Gitlesen, 2006) and communication skills (Chiang, 2008). The aetiology is poorly understood but multiple factors are usually involved. Non-specialist mental health clinicians will often regard self-injury as a consequence of ID rather than as evidence of a mental health disorder requiring treatment (Reiss *et al*, 1982). In Australia it is commonplace for patients with ID to experience major obstacles to adequate mental health care (Bennett, 2014 and Wurth & Brandon, 2014). Inpatient care in a general psychiatric ward can be problematic. Individuals with ID can be at risk of harm in an acute admission unit, will typically find the environment very stressful, and can challenge the management skills of staff unfamiliar with their needs (Donner *et al*, 2010). In contrast to some other countries, there are no specialised admission units for this population in Australia. For example Scotland, with a population of 5.295 million, had 226 acute inpatients; patients with Learning Disability under the care of psychiatrists specialising in ID at a census in 2014 (TSG, 2015). The area of Lothian, with a population of 800,000 which includes Edinburgh, has a 24 bed specialist admission unit within a general psychiatric hospital (Lyall & Kelly, 2007).

CASE HISTORY

The patient was a fifteen year old male who presented to the ACT Mental Health Service for People with Intellectual Disability (MHS-ID). Autism and significant developmental delay were diagnosed at the age of 2 years and 9 months. He was repeatedly assessed throughout childhood to be functioning within the severe range of ID (IQ 20-35). He was non-verbal and had uniformly low skills on a Vineland Adaptive Behaviour Score at the age of 11. Previously he had appeared happy, and enjoyed activities such as swimming and eating out. A modest degree of self-injury would occur in protest at changes to routine or frustration of expectations.

> “His mood and behaviour had deteriorated over six months, with increased withdrawal from preferred activities”

His mood and behaviour had deteriorated over six months, with increased withdrawal from preferred activities, excessive amounts of time in bed hiding under

bed clothes, and severe self-injury by punching himself on the chin or ears. His parents reported that he looked miserable. His sleep and appetite had worsened substantially. He would not even eat his previously favoured fast food. He appeared to his parents to have lost weight, but would not cooperate with being weighed. He would not go to school. He had been treated with risperidone in varying doses for ten years, which had been helpful for chronic insomnia, but with minimal benefit on autistic behaviours, including long term low level self-injury. He was also taking fluoxetine, prescribed for an episode of probable depression when he was eight, with useful benefit at the time. There was a strong family history of depression and anxiety in the families of both parents.

His physical health was good and there was no reported or documented history of epilepsy. His medication was fluoxetine 30 mg daily and risperidone 2.75 mg daily. Physical examination by his general practitioner was limited by severe tactile defensiveness but no abnormalities were detected. Comprehensive blood tests revealed no significant abnormalities. A CGH microarray revealed no significant copy number variations. He had had dental treatment under general anaesthetic the year prior to presentation.

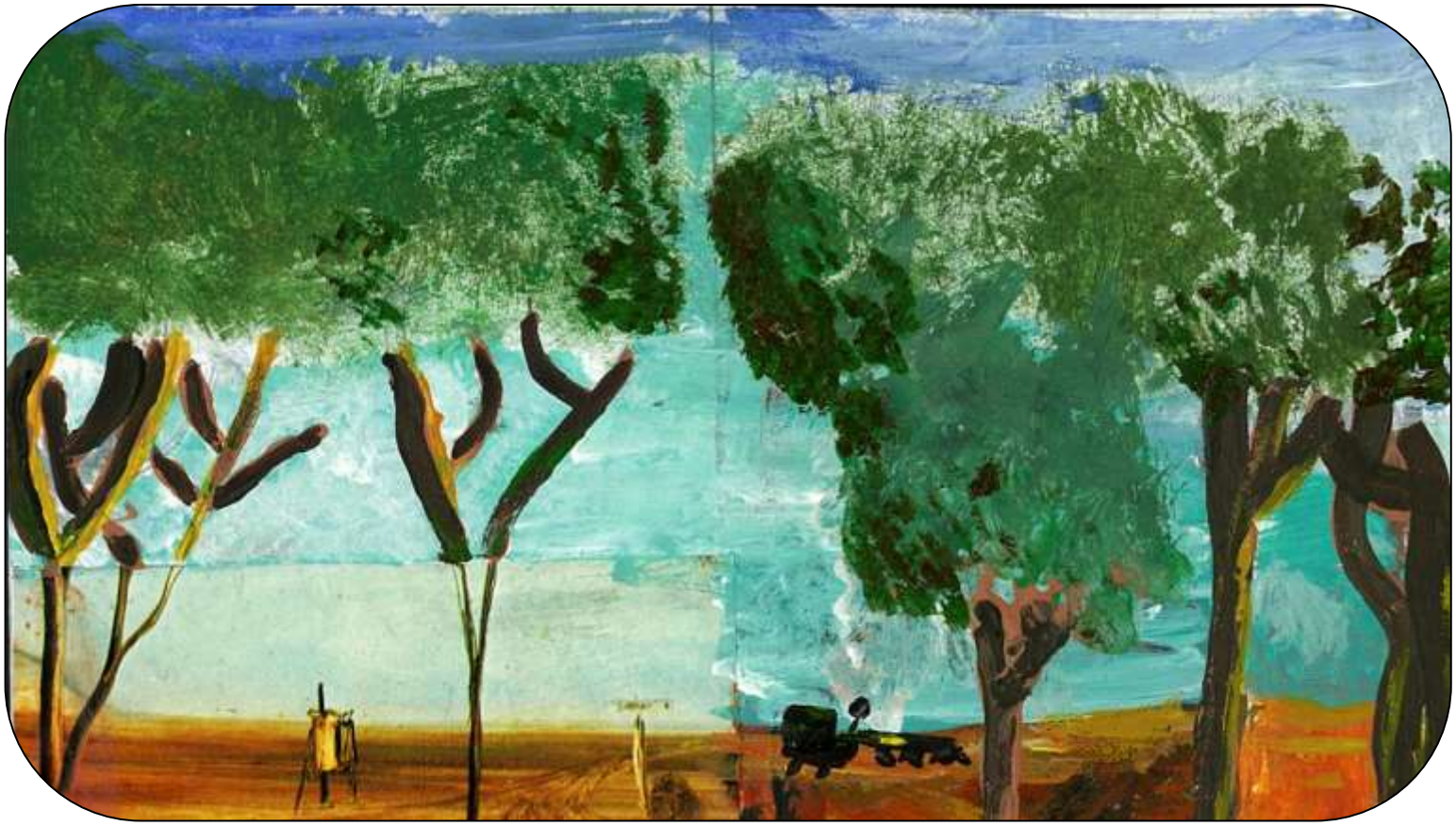
It was initially unclear whether he was suffering from an exacerbation of anxiety secondary to ASD, or a relapse of Major Depression. He did not respond to treatment of anxiety with clonidine up to 50µg tds or propranolol up to 30mgs tds. Further exploration of the history and presentation focussing on behavioural change led to a diagnosis of Major Depression with melancholic features. There was no response to an increase of fluoxetine to 40mg *mane*; or to the combination with mirtazapine up to 90mg daily. There was transient improvement with the replacement of fluoxetine with escitalopram 20mg *mane*, with mirtazapine 90mg daily and risperidone 2.75mg daily unchanged. Escitalopram was tapered off and venlafaxine 37.5mg *mane* introduced, with the capsule contents sprinkled on food. He then had an epileptic seizure and the family revealed that he had suffered two previously, three and fourteen months beforehand. Given the overwhelming demands of his care, his parents had not sought medical attention for these isolated events. Mirtazapine was reduced to 60mg, but he became progressively more unsettled. After two months treatment venlafaxine was withdrawn and mirtazapine increased to 75mg *nocte*.

> “Treatment options were severely limited by his requirement for liquid medication”

After eighteen months, his sleep had improved but self-injury and depression were no better. Treatment options were severely limited by his requirement for liquid medication. He would not accept crushed tablets. He was intermittently constipated, and his mood and behaviour would improve transiently after bowel movements. He had lost 20kg over two years. His medication at this point was mirtazapine 75mg and risperidone 2.75mg daily. Over the years his parents had used a helmet and arm splints to limit the damage he could inflict. When arm splints were removed he would vigorously punch himself in the head and open old wounds. He looked miserable and was irritable and distressed. When he did attend school he stayed under a doona in a corner of the classroom. Otherwise he was at home in bed. He was therefore referred for the second psychiatric opinion required by ACT legislation on ECT to the second author, who concurred with the decision to seek Tribunal consent for ECT.

Obstacles to the delivery of ECT were his age, inability to give informed consent, seizure disorder, potentially disruptive behaviour within the hospital ward and ECT suite, and the challenge of persuading colleagues unfamiliar with ID of the validity of the diagnosis of Major Depression and melancholia and the need for this treatment.

Extensive discussions were held between the MHS-ID team and the hospital mental health and ECT teams about these issues, and about the logistics of administering ECT. Staff from MHS-ID made numerous visits to the inpatient and ECT unit to address the anxiety of medical and nursing staff about the possible negative impact of such a patient on the milieu of a voluntary psychiatric ward. Hospital staff were concerned about



the history of seizures and the risk of status epilepticus. A neurologist recommended ensuring the availability of midazolam in the ECT suite to terminate prolonged seizures. MHS-ID inspected the ward and the ECT suite and identified potential environmental risks specific to this patient. Detailed planning took place, including allocation of roles to specific staff throughout the process of administration of ECT. He was assigned a single room to enable a parent to stay with him at all times.

He was admitted the day prior to ECT, and promptly had a generalised seizure. The neurologist remained supportive of ECT. Physical examination, pathology results and brain CT were normal. Premedication with olanzapine 10mg one hour prior to ECT was administered.

Bilateral ECT was administered, with a successful, slightly prolonged seizure. Following this he was agitated and self-injurious for several hours. Seven bilateral ECT treatments were administered as an inpatient over a three week period. MHS-ID nursing and psychology clinicians attended the first two administrations to assist unit staff. Premedication with olanzapine was unnecessary after the second ECT session. No agitation was seen after the third and subsequent procedures, and he rapidly became much more relaxed, interactive and happy. He ate well and his bowels opened more regularly. MHS-ID staff visited periodically to assist ward staff and his family. In addition to working with the MHS-ID team, the second author was also a senior consultant psychiatrist in the inpatient unit, enabling her to provide continuity of care and stability in addressing any daily concerns on the ward for both the family and staff.

Arm splints and helmet were no longer required. On weekend leave after seven ECT treatments he appeared much happier, roamed around the house rather than retreating to bed, and ate and slept well. Lamotrigine was introduced as an anticonvulsant and adjuvant antidepressant, building up to a dose of 150mg bd. He continued mirtazapine 45mg nocte and risperidone 1mg bd. He returned to school where his behaviour and engagement were noted to be greatly improved. There was then a partial relapse of depressed mood and self-injury and eighteen days after discharge he was readmitted for a further two ECTs. Depression has now been in remission for three years with his medication unchanged. He has regained weight to a healthy weight range. Self-injury continues at low levels consistent with his premorbid behaviour, he is participating well in activities and his epilepsy is under good control.

Confirmation

** It is confirmed that this case study has been de-identified and that written consent has been received from the legal guardians for publication of this article.

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Glossary of Terms

Anhedonia: Inability to feel pleasure in normally pleasurable activities
Mane: Morning
Nocte: Night
Bd: Twice a day

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