CASE REPORT

Self-disembowelment during delirium tremens: why early diagnosis is vital

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SUMMARY

Delirium tremens is a serious yet treatable complication of alcohol withdrawal. Timely diagnosis is critical as there are well-established treatment regimens that provide symptomatic relief within hours to days. We report the case of a 34-year-old man with an undisclosed history of alcohol dependency. He presented with paranoid beliefs and was transferred to a psychiatric inpatient unit with suspected schizophrenia. Classic features of delirium tremens such as sympathetic overdrive and visual hallucinations were not salient features of his presentation. Within 24 hours of admission, he sustained major self-inflicted abdominal stab wounds and extracted a metre of small bowel as a result of command hallucinations. The possibility of delirium tremens was raised by the receiving trauma team and he responded rapidly to benzodiazepines. Emergency jejunal reanastomosis was successful. This case highlights the fact that delirium tremens may present atypically and that associated command hallucinations can confer grave risks.

BACKGROUND

Delirium tremens (DT) can emerge as a serious complication of alcohol withdrawal and it represents a medical emergency. Principal features include dysautonomia and fluctuating disturbance of attention, level of consciousness and cognition.¹ Psychotic symptoms are also commonly reported.² Timely diagnosis is vital so that appropriate treatment may be given. Benzodiazepines are the mainstay of treatment, though other pharmacological strategies are emerging in tandem with increasing knowledge of the pathophysiological mechanisms of alcohol withdrawal.³

Although visual hallucinations are more commonly reported in DT, auditory hallucinations can occur and may take the form of derogatory remarks or command hallucinations.⁴ The agitated, hallucinating patient with DT can therefore on occasions be misdiagnosed with drug-induced psychosis, schizoaffective disorder or schizophrenia. This may result in critical delay in receiving appropriate treatment. Hallucinations can be particularly distressing, conferring serious risk of harm to self or others.

Case reports of serious self-harm in patients experiencing DT are uncommon, and reports of major self-mutilation are rare. Here we report a case of DT with associated command hallucinations, resulting in self-inflicted abdominal stab wounds and partial disembowelment.

CASE PRESENTATION

Our case was a 34-year-old man who developed an acute psychosis. He had no personal or family history of affective or psychotic disorders and his medical history was unremarkable. There was a history of alcohol excess but further details were unavailable at the time of initial assessment. There was no history of illicit drug misuse. He lived alone and was in full-time employment. He described good relationships with his parents and friends.

For the last decade, he had been drinking up to 17 bottles of wine a week. He could not identify any specific reason for escalating alcohol intake but denied using alcohol to medicate himself for symptoms of anxiety, depression or psychosis. Evening craving, salience of alcohol, tolerance to it and narrowing of repertoire were evident but he denied experiencing withdrawal symptoms. He reported that for some time he had been concerned that his alcohol intake was affecting his prospects for career advancement.

Our patient decided to attempt complete abstinence. Over the next few days he developed symptoms in keeping with alcohol withdrawal: sweating, tremor and escalating anxiety. He equated them with symptoms experienced during smoking cessation and believed they would resolve with time. Within 6 days, auditory hallucinations had emerged, and were experienced as unfamiliar voices threatening to harm him if he did not carry out their commands. He also experienced visual hallucinations and described seeing 'a mechanical spider-type silhouette with a male face'. He also believed there were cameras spying on him and people attempting to gain access to his home to harm him. He contacted the police on several occasions but did not receive a response. He then fled from his home with a knife, which he stated was to protect himself from would be attackers. One of his neighbours witnessed him with a knife and rang the police. He was detained in police custody overnight and the attending doctor requested further assessment of a suspected paranoid psychosis. He was subsequently transferred to a psychiatric ward.

Within hours of admission, he believed he was being observed by surveillance cameras. He heard voices through the walls and through telecom systems making threats to beat, rape, immolate and kill him and his family. He went to the bathroom and could hear a voice telling him to cut his abdomen. The voice berated him when he hesitated. He then smashed a mirror on the wall in the bathroom, and used a shard of the glass to cut open his abdomen. He proceeded to extract and

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excise a loop of small bowel. When asked to reflect on this he was clear he was trying to end his life. He recalled pulling out a section of his bowel and had not found it unduly painful. He was found by nursing staff and transferred urgently to a regional trauma centre.

INVESTIGATIONS

- ▶ Haemoglobin 124 g/L
- ▶ White cell count $17.9 \times 10^9/L$
- ▶ Sodium 127 mmol/L
- ▶ Potassium 4.6 mmol/L
- ▶ Urea 4.8 mmol/L
- ▶ Creatinine 147 mmol/L
- ▶ Estimated glomerular filtration rate 47 mL/min
- ▶ Alanine aminotransferase 38 U/L
- ▶ Alkaline phosphatase 39 U/L
- ▶ Albumin 32 g/L
- ▶ Bilirubin 12 $\mu\text{mol/L}$
- ▶ C reactive protein 8 mg/L

Raised white cell count and creatinine were in keeping with acute trauma and were not associated with other findings suggestive of sepsis or renal failure. Urea and potassium remained within normal range. White cell count, creatinine and sodium had normalised by day 10.

Physical examination revealed three transverse abdominal lacerations. No bowel was visible. Neuroimaging was not performed as his psychosis settled rapidly on benzodiazepines and no focal neurological signs were elicited on clinical examination postoperatively.

DIFFERENTIAL DIAGNOSIS

The differential diagnosis for a first presentation of psychosis should remain broad if historical details are scant:

1. Delirium secondary to:
 - A. Reversible organic causes (eg, hypoxia, electrolyte imbalance, sepsis, thyroid or adrenal disease) or acute intracranial event;
 - B. Exacerbation or fluctuation of chronic disease (eg, neurodegenerative, autoimmune);
2. Drug-induced psychosis (prescribed medication or illicit drugs)—intoxication or withdrawal;
3. Alcoholic hallucinosis (ongoing intake) or DT (withdrawal);
4. Schizophrenia;
5. Schizoaffective disorder;
6. Mood disorder with psychotic symptoms.

Routine physiological observations, blood tests and clinical examination were not suggestive of reversible organic causes of psychosis in our patient. Hyponatraemia was evident, but his presentation was not generally suggestive of hyponatraemic encephalopathy and it typically presents with sodium levels below 125 mmol/L. There was no history or systemic signs of chronic disease. He did not take any prescribed or over-the-counter medications. We did not obtain a urine drug screen; hence, contributions from a drug-induced psychosis cannot be entirely excluded. There is no personal or family history of major affective or psychotic disorders and his presentation settled rapidly without use of antidepressants, mood stabilisers or antipsychotics. He has remained symptom free without neuroleptics in the 18 months since his discharge from hospital.

TREATMENT

Two units of blood (O rhesus negative) were transfused immediately and our patient underwent a trauma laparotomy. Multiple

bleeding mesenteric vessels were identified and under-run. The jejunum had been transected ~30 cm from the duodenal-jejunal flexure. A small segment of devitalised jejunum was resected and a two-layer side-to-side anastomosis was made. No gastric or colonic injuries were identified and solid organs were intact.

On admission to the surgical ward, the possibility of DT was raised, and a 7-day reducing regimen of chlorthalidopoxide was started, starting at 20 mg four times a day. A course of parenteral thiamine was also given over 3 days, in accordance with current National Institute for Health and Care Excellence (NICE) guidelines.⁵

Haemoglobin had fallen to 64 g/L by day 5. CT abdomen did not show any intra-abdominal-free fluid, collection or active haemorrhage. He received a second blood transfusion (2 units of packed red blood cells). Haemoglobin had risen to 92 g/L on repeat measurement 4 days later.

OUTCOME AND FOLLOW-UP

Our patient recovered uneventfully over a period of 2 weeks. Psychotic symptoms resolved rapidly on initiation of chlorthalidopoxide (within 48 hours) and did not recur during the remainder of the admission. He was supported by the hospital liaison psychiatry team throughout his stay on the surgical ward and it became possible to obtain the details contained in this report about events leading up to his self-inflicted abdominal injuries. Given the unusual and life-threatening nature of his injuries, he was transferred to his local psychiatric unit for a week to ensure complete resolution of psychotic symptoms. He declined support from alcohol services. Neuroleptics were not prescribed. It is now 18 months since our patient was discharged from hospital and he has not experienced any further psychotic symptoms. He did not wish to disclose his current alcohol intake.

DISCUSSION

Our patient sustained major, self-inflicted abdominal injury as a consequence of experiencing command hallucinations during an episode of DT. A recent editorial has highlighted grave risks associated with DT, including suicide and self-mutilation.⁶ We recommend that DT should always be considered in the differential diagnosis of a first psychotic episode. Supporting evidence can be obtained from the alcohol history (type, volume, frequency, dependence syndrome), physical observations and examination (tachycardia, tachypnoea, hypertension, diaphoresis, tremor, hyper-reflexia) and delirium screen (fluctuating disturbance of alertness, attention, cognition and motor behaviour). Given that symptoms and signs of alcohol withdrawal evolve over time, screening tools such as the Clinical Institute Withdrawal Assessment for Alcohol—revised (CIWA-Ar),⁷ can be helpful for ward staff in terms of recording objective observations and using these to guide treatment requirements. Other diagnoses that require due vigilance in this patient group include withdrawal seizures, Wernicke's encephalopathy, closed head injuries and respiratory tract infections.

Detailed reports of the phenomenology of hallucinations experienced in DT are uncommon. Platz *et al*⁴ provide a useful overview and reminds us that auditory hallucinations can be a feature of DT and may take the form of commands. Despite an extensive literature search, we found only a handful of case reports discussing major self-mutilation as a consequence of such commands in this patient group. Charan and Reddy⁸ reported a case involving a 28-year-old man who began experiencing hallucinations and cognitive impairment 2 days after cessation of alcohol consumption, culminating in self-inflicted

scrotal lacerations. Roig *et al*⁹ describe a 44-year-old patient who removed 2 m of small intestine while experiencing command hallucinations during an episode of DT. Patra *et al*¹⁰ report a case of major abdominal self-injury in the context of alcohol misuse but makes a clear distinction in this case for alcoholic hallucinosis. Other reports of self-mutilation in the context of alcohol misuse are apparent in the literature,^{11–13} but further specifics regarding intoxication or withdrawal states were not always reported. There are other case reports of self-inflicted major abdominal injury with disembowelment, but details of mental state are not always included as reports come from diverse sources including critical care¹⁴ and surgery.¹³ Collectively, our reported case and literature review remind us that patients with a history of alcohol misuse can experience a range of complications that confer risk of self-harm including DT and alcoholic hallucinosis. These complications often evolve over time, providing a window of opportunity for prevention or at least timely diagnosis and treatment.

Learning points

- ▶ Delirium tremens should always be considered in the differential diagnosis of the acutely agitated patient. Psychotic symptoms may or may not be immediately apparent and patients may be too frightened or suspicious to disclose them.
- ▶ Ask about command hallucinations. They may be present in addition to classically described visual hallucinations and confer grave risks to the patient and others if commands involve instructions to harm.
- ▶ Ensure nursing staff are equipped with a systematic means of monitoring withdrawal such as the Clinical Institute Withdrawal Assessment for Alcohol—revised (CIWA-Ar) chart and that they feel confident using these tools. Accurate scoring can help prevent undertreatment or overtreatment of alcohol withdrawal.

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Contributors RT structured the article, conducted the literature review, wrote the introduction and discussion and contributed to draft revision. VC wrote the case history and contributed to draft revision and construction of the bibliography. EG revised the draft and finalised it for submission. All three authors were directly involved in clinical care of the patient.

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