Novel treatment (new drug/intervention; established drug/procedure in new situation)

Successful treatment of acute mania and perineal abscess using dexmedetomidine sedation as adjunctive therapy

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Summary

Acute psychiatric illness with agitation presents the clinician with a dangerous, potentially life-threatening situation often requiring complex management. Alteration in patients' insight and judgment may result in medication non-compliance, potentially further complicating therapy directed at the primary psychiatric illness as well as any co-existing conditions. Sedation is often necessary to control dangerous behaviour during the period of antipsychotic and mood-stabilising drug titration. Dexmedetomidine is a centrally acting selective α_2 -adrenergic agonist with anaesthetic and sedative properties widely used in intensive care units for sedation in critically ill patients. The authors report the case of a patient managed successfully with dexmedetomidine sedation while being treated for acute mania and perineal abscess.

BACKGROUND

This case represents the novel use of dexmedetomidine to achieve sedation levels that allowed for adequate application of mood stabilising and antibiotic therapy without subjecting the patient to the additional risk of endotracheal intubation and mechanical ventilation.

CASE PRESENTATION

An adult male with a history of bipolar I disorder and perirectal abscess presented to our institution with suicidal ideation, racing thoughts, grandiosity and combative agitation requiring haloperidol, lorazepam and physical restraint. The patient also complained of pain and fullness of his perineum and scrotum. Prior psychotropic treatment had consisted of combinations of multiple medications, and chronic medication non-compliance had been cited as a complicating factor in his care. Prior treatment for the perineal abscess had included incision and drainage and intravenous antibiotic therapy 1 month prior to this admission. Medications on admission included depot risperidone, oral risperidone, quetiapine, controlled-release lithium, zolpidem and docusate. Physical examination of the perineum was remarkable for an indurated, erythematous 2-centimetre scrotal mass, and induration of the right perirectal and buttock area. On ultrasound examination, the mass demonstrated features consistent with abscess. Laboratory studies were remarkable for a white blood cell count of 15,000 cells per microl. The patient was diagnosed with agitated mania and perirectal and scrotal abscesses, and admitted to the inpatient psychiatric ward. Incision and drainage of the abscesses was performed, and trimethoprim-sulfamethoxazole (TMP-SMX) was initiated for empiric coverage of methicillin-resistant *Staphylococcus aureus* (MRSA). Over the next week, the patient continued to have intermittent agitation requiring physical restraint despite increasing doses of psychotropic medications and cross-titration of lithium to valproic acid. The patient was repeatedly

non-compliant with intravenous access and medications including antibiotic therapy; he refused condom catheterisation intended to prevent urinary contamination of his healing wound. At this point, given the inability to adequately treat either of his conditions, and given facility policy forbidding the use of titratable infusions on the inpatient psychiatric ward, the patient was transferred to the intensive care unit (ICU). Dexmedetomidine infusion was begun at 0.2 mcg/kg/min and titrated to achieve a score of 3 (responds to commands only) on the Ramsay Sedation Scale. The patient required a maximum dose of 0.3 mcg/kg/min during treatment. A urinary catheter and nasogastric tube were placed. Cultures taken from the patient's abscesses revealed growth of MRSA and *Prevotella melaninogenica*, and treatment with intravenous vancomycin and ampicillin-sulbactam was begun. A certified mental health technician remained at the bedside 24 h a day and occasional bursts of agitation were treated with lorazepam on an as-needed basis. The patient's valproic acid, quetiapine and chlorpromazine were continued via nasogastric tube, and a therapeutic valproic acid level was achieved on ICU day 4, coinciding with complete resolution of agitation. Dexmedetomidine was weaned successfully thereafter, antibiotics were changed to oral TMP-SMX and amoxicillin-clavulanate, and the patient was transferred to the inpatient psychiatric ward to continue treatment.

INVESTIGATIONS

- ▶ Ultrasound examination of the scrotum and perineum consistent with abscess
- ▶ White blood cell count of 15 000 cells per microl
- ▶ Cultures from abscess grew MRSA and *P melaninogenica*.

DIFFERENTIAL DIAGNOSIS

Agitated mania with psychotic features complicated by aggressive combativeness and MRSA perineal and scrotal abscesses.

TREATMENT

The patient was transferred to the ICU for dexmedetomidine infusion to achieve enough sedation to administer and titrate mood stabilising medications and intravenous antibiotics for his abscess. After 4 days, his mood stabilising drugs were at therapeutic levels, dexmedetomidine was discontinued and he was non-combative and compliant with oral antibiotic therapy.

OUTCOME AND FOLLOW-UP

The patient was eventually discharged to home on stable levels of valproic acid. He was lost to follow-up shortly afterwards because he completed a previously planned career change that necessitated a move out of state.

DISCUSSION

Treatment of this patient's co-existing infection and psychiatric illness was complicated by medication non-compliance. Therapeutic sedation with dexmedetomidine enabled providers to successfully treat his perirectal abscess with intravenous antibiotics and achieve therapeutic levels of his oral antipsychotic medications in a reliable fashion via nasogastric tube. Dexmedetomidine is widely used for sedation in the ICU, and its lesser effect on respiratory drive when compared with other sedatives (ie, midazolam, propofol, lorazepam) made it an attractive choice for this case. Adequate sedation was achieved without exposing the patient to the risks of endotracheal intubation and mechanical ventilation. Given its known side effects of hypotension and bradycardia, it must be used in a closely monitored setting and would be inappropriate outside of the ICU. To

our knowledge, this represents the first reported use of dexmedetomidine to facilitate treatment of acute psychiatric illness complicated by co-existing conditions. A case report exists of the drug attenuating postictal agitation in a patient after electroconvulsive therapy,¹ but larger studies are lacking at this time. Further investigation is needed to define the role of dexmedetomidine in this setting.

Learning points

- ▶ Psychiatric illness can be complicated and exacerbated by co-existing medical conditions.
- ▶ The underlying psychiatric illness itself can complicate or prevent adequate treatment strategies if the patient is non-compliant with medical therapy.
- ▶ Dexmedetomidine, used in a monitored setting, can be an important adjunct to therapy as it provides sedation and analgesia without suppressing the patient's respiratory drive.
- ▶ Use of dexmedetomidine can prevent endotracheal intubation and mechanical ventilation in patients who have no other indication for such procedures.

Competing interests None.

Patient consent Not obtained.

REFERENCES

1. O'Brien EM, Rosenquist PB, Kimball JN, *et al*. Dexmedetomidine and the successful management of electroconvulsive therapy postictal agitation: a case report. *J ECT* 2010;**26**:131–3.

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