Dexmedetomidine: a valuable sedative currently not widely available in the UK

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Editor—We read with interest the article by Drs Mahmoud and Mason1 regarding dexmedetomidine (DEX) and its use in the paediatric setting. Their review comprehensively covers the applications, effects, and cautions in the use of DEX and suggests areas for future research, including its potential neuroprotective effects. In particular, two elements of this review were of interest to us: firstly, their mention of the use of DEX during invasive airway procedures where there is a need to maintain a clear airway and avoid respiratory depression; and secondly, the current difference in licensing for DEX in the USA and Europe.

We recently used DEX alongside local anaesthetic infiltration in a 71-year-old woman who was undergoing a palmaris longus tendon transfer to her upper lip. She had developed lip incompetence following previous surgical resection and radiotherapy for a mandibular squamous cell carcinoma. Although initially listed for general anaesthesia, on the morning of surgery the patient informed us of a significant phobia of nausea and vomiting, and was highly motivated to have the procedure performed under local anaesthesia.

We anticipated a number of challenges in providing safe and sufficient sedation for this procedure. The patient had a potentially difficult airway, as a result of her previous surgery and radiotherapy. Preoperative examination revealed a Mallampati score of 3, Calder grade B, and only 2.5 cm of mouth opening. We also anticipated a lengthy procedure (~2.5 h), and the requirement for surgery at two separate anatomical sites. In view of previous experience in critical care, we decided that dexmedetomidine (Dexdor; Orion Corporation, Espoo, Finland) would be the most appropriate agent; offering anxiolysis, moderate sedation, and analgesia, with lower risk of airway or respiratory embarrassment.

We initiated sedation in the anaesthetic room 15 min before going into theatre, at a rate of 7 μg kg⁻¹ h⁻¹. We then titrated the rate upwards to the desired state of the patient being rousable to voice, which in this instance was 14 μg kg⁻¹ h⁻¹. During the procedure, a 15% reduction in heart rate and 10% reduction in baseline systolic blood pressure were noted, but these parameters remained stable throughout; as Mahmoud and Mason1 highlighted in their review, the need for pharmacological resuscitation did not occur.

The surgeons were able to interact with the patient during the procedure, and the ability to converse with the patient proved most useful to the surgical team. We have included their thoughts here for completeness.

The palmaris longus tendon inset to the left lower lip aimed to recruit the range of mimetic excursion of the ipsilateral zygomaticus muscle group and transmit this to the lower lip. The challenge of judging the degree of tension to exert during inset of the tendon to deliver the optimal lower lip position both in rest and during smile function was aided by the ability to have the patient execute mimetic facial movements on command during the procedure. The level of sedation achieved with this agent (DEX) allowed for administration of adequate local anaesthesia at donor and recipient surgical sites, for effective rousing and interaction with the patient performing facial movements on verbal command when required, and for the patient to return rapidly to a sleep state between commands.

After surgery, we gradually reduced the rate of infusion in recovery, terminating it 45 min after completion of surgery.

On review that evening, the patient informed us that she had felt very comfortable during the procedure. She had no specific recall apart from the injections of local anaesthesia and of a comment made by one of the surgeons relating to the length of her palmaris longus tendon. She was highly satisfied with her sedation and surgery, and was discharged home that evening.

At postoperative outpatient review 2 weeks after surgery, she reported good cognitive and physical function after the procedure. She demonstrated improved lip competence with no change in hand grip, including playing 18 holes of golf within 7 days of the procedure and without impairment of her handicap!

As stated in the review article, the current European License for DEX extends only for patients requiring light to moderate sedation or for the management of agitation and delirium in intensive care.2 Within anaesthesia, it is yet to be licensed in the UK, although it is licensed for use in operating theatres in the USA.

Within critical care, the ProDex, MiDex, and Sedcom studies have shown a reduced duration of mechanical ventilation with DEX compared with midazolam, a reduced prevalence of delirium compared with midazolam, a reduced time to extubation compared with propofol and midazolam, and an improved ability to communicate pain compared with propofol.3-5

In the context of anaesthesia, DEX has been shown to reduce minimal alveolar concentration requirements and volatile use, postoperative opioid requirements in postanaesthesia care units, and postoperative nausea and vomiting.3 Its use is also associated with a reduction in postoperative delirium in patients undergoing cardiac surgery.6

In the patient described, DEX enabled us to provide a safe and successful anaesthetic that honoured the patient’s wishes. There were no adverse cardiovascular side-effects, and the patient’s postoperative reported experience was highly satisfying. We acknowledge that DEX is not rapidly titratable, which is evidenced by our need for 15–30 min of titration before the start of surgery. We also allowed a period of time for gradual termination of the infusion in recovery. Despite these time constraints, we cannot think of any other drug that would have achieved the same result. With emerging evidence of efficacy and value for its use outside of intensive care, we would suggest that a review and extension of its current European license should be considered.

Written consent for the description of the aforementioned patient was obtained from the patient.

Declaration of interest

J.B.-S. has previously spoken on behalf of and received honoraria from Orion.
Restoration to normal physiology without the use of excessive fluids

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References


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