

## Delayed recovery of consciousness after elbow arthroscopy

Sir,

A 45 year-old right hand dominant person weighing 88 kg (body mass index of 27 kg/m<sup>2</sup>) underwent elective elbow arthroscopy for removal of a loose body from his right elbow. He had a past history of depression and was on fluoxetine 20 mg. It was a day care procedure and for induction, he was administered fentanyl 100 µg, oxycodone 5 mg, propofol 250 mgs and rocuronium 30 mgs. The intubation was difficult (Cormack-Lehane three) and a bougie was used. The oxygen saturation (SpO<sub>2</sub>) was maintained at 99%.

Intra-operatively, the patient received ondansetron 4 mg and dexamethasone 8 mg. He was maintained on oxygen, air, sevoflurane and had volume controlled ventilation. Intra-operative monitoring used were electrocardiogram (ECG), oxygen saturation (SpO<sub>2</sub>), end tidal carbon dioxide, non-invasive blood pressure (NIBP) at 3 min intervals, end tidal sevoflurane and inspired oxygen. The arthroscopy was performed in the prone position and lasted for 35 min.

At the end of surgery, after the train-of-four response showed three twitches, rocuronium was reversed by glycopyrolate 0.5 mg and neostigmine 2.5 mg. The patient was extubated successfully in the theatre after he moved all four limbs, raised his head and spontaneously opened his eyes. He was transferred to the recovery room, and monitoring was continued using ECG, SpO<sub>2</sub> and NIBP. He was administered oxygen at the rate of 5 l/min by face mask.

In the recovery room, the patient was snoring heavily, had a persistent moaning sound, not responsive, but was maintaining his ventilation and oxygenation. There was no spontaneous eye opening or movements of the extremities and overall the Glasgow coma score (GCS) was 4, after about 15 min on arrival to the recovery room. Neurological examination was normal with plantar flexors and an intact anal tone. A urinary catheterisation done in the recovery room did not elicit any response with respect to pain, suggesting that the patient was in deep sedation.

As the patient's GCS was 4, he was intubated and ventilated. He was then transferred to the intensive care unit. This incident was thoroughly investigated for the cause. All blood investigations including blood gas analysis were normal on repeated occasions. A plain computed tomography scan of the brain did not reveal any abnormality. A repeat scan done after administering a contrast was also reported to be normal. Physician's opinion was sought but no conclusion could be arrived at.

The patient had episodes of jerky movements 12 h later. He was ventilated for 18 h following which he was extubated as the patient woke up spontaneously; hence, no other neurological tests like the electroencephalogram were performed. He was shifted to the ward the following day, 36 h after the procedure.

During the visit to the ward the following day, he was fully awake and had no recollection of the events after the surgery. He was subsequently discharged and remained asymptomatic on his last follow-up.

Elbow arthroscopy is a routinely performed procedure as a day care on the elective orthopaedic list. It is generally an uneventful procedure where the patient gets discharged the same day. There are certain complications which are specifically associated with an elbow arthroscopy, such as neurovascular injuries occurring due to incorrect placement of portals.

Islander G has reported on a patient who had jerky movements after an uneventful anaesthesia with propofol.<sup>[1]</sup> Chang *et al.* have reported on dissociative amnesia after general anaesthesia.<sup>[2]</sup> They administered alfentanil and propofol for induction. Rhona and Faleiro state that dissociative coma can be an uncommon cause of delayed recovery of consciousness.<sup>[3]</sup> Similar cases have been reported by others,<sup>[4,5]</sup> with one patient experiencing the same phenomenon on three separate occasions.<sup>[6]</sup>

Our patient was on fluoxetine for chronic depression and acts on the serotonin transporter proteins.<sup>[7]</sup> Zhao and Sun in their paper stated that intravenous propofol inhibits the serotonin transporter protein. The exact receptor on which propofol acts on serotonin transporter protein could not be determined.<sup>[7]</sup> Long-term treatment with fluoxetine enhances the inhibitory action of propofol and

this is achieved at lesser drug concentrations than normally required.<sup>[7]</sup>

The literature search did not reveal any relation of the surgical procedure with the delayed recovery from anaesthesia. Weber *et al.* have reported a case of a patient who awakened 6 h after general anaesthesia and it was hypothesised to be a case of psychogenic coma.<sup>[4]</sup> Haller *et al.* have reported a similar case where the patient regained consciousness after 2 h. In their opinion, it was a case of dissociative stupor.<sup>[5]</sup> Our patient, however, did not regain consciousness for more than 36 h after the procedure. We believe that drug interaction with propofol could have caused the delay in recovery.

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