Letters to Editor

Anaesthetic management and considerations in a patient with chronic dicyclomine addiction

Sir,

A 21-year-old unmarried male patient presented with complaints of vomiting and abdominal pain for the past 8 months. Following examination and investigations along with endoscopic evaluation, he was diagnosed with a duodenal stricture causing subacute intestinal obstruction. During the pre-anaesthetic evaluation, the history of dicyclomine addiction was elicited. He was consuming dicyclomine 10 mg tablets 5–6 times daily for the past 4 years. There was no history of any other drug abuse or addiction and any de-addiction treatment for the same. On examination, tachycardia (126/min) and mydriasis were the positive findings. After a psychiatric consultation, the drug was stopped and tablet lorazepam 2 mg was initiated once daily. During the treatment, the patient exhibited mild withdrawal symptoms and craving for the drug which settled with sedatives. After the appropriate optimisation of metabolic status, the patient was posted for gastrojejunostomy.

A combination of regional and general anaesthesia was decided as the anaesthesia plan. After securing intravenous (IV) access and attaching standard monitors (electrocardiogram, non-invasve blood pressure, pulse oximetry), baseline vitals were noted. An epidural catheter was inserted at the L2–3 level. Rapid sequence induction of anaesthesia was performed and the trachea intubated with a 7 mm ID cuffed endotracheal tube. Sevoflurane was used for maintenance with a minimum alveolar concentration between 0.7 and 1.3 to maintain a bispectral index (BIS) of around 50. Episodes of hypotension after induction and during the procedure were managed with IV fluids and vasoconstrictors (phenylephrine). Opioids were minimally used. Anti-muscarinic drugs such as atropine were avoided and a muscle relaxant (rocuronium) was titrated using neuromuscular monitoring (target train of four-count of 0 to 1). Reversal agents were avoided at the end of the surgery. Neuromuscular recovery was assessed using neuromuscular monitoring and the trachea was extubated after achieving a train of four ratios of 0.9. The patient was agitated post extubation and was treated with aliquots of IV midazolam. The patient was kept under observation in the post-anaesthesia recovery room and showed no signs of respiratory distress. He was shifted to the ward after the appropriate modified Aldrete score was achieved.

Dicyclomine is a synthetic anticholinergic tertiary amine commonly used as an anti-spasmodic agent to relieve symptoms of irritable bowel syndrome. Like atropine, it crosses the blood-brain barrier and can produce neurological symptoms ranging from delirium to coma. Strict regulations and laws on narcotic drugs in India have led to alternate modes of drugs of abuse, especially those with the euphoric property. A case of dicyclomine abuse was reported from India in a young female in 2013.[1] Although anaesthetic management of several substance abuse drugs is available in the literature, experiences with dicyclomine addicts for anaesthesia and surgery are sparse. Commonly abused drugs are alcohol, cocaine, opioids, hallucinogens such as lysergic acid diethylamide, amphetamine, etc.[2]

In the present case, the patient presented with the symptoms of an exaggerated sympathetic nervous system such as tachycardia, blurred vision due to mydriasis and hyperhidrosis. The basic principle followed for anaesthetic management included avoiding the activation of the sympathetic nervous system, optimal use of muscle relaxants and opioids and avoidance of drugs with anti-cholinergic activity. Epidural supplementation was done to solve this purpose. Succinylcholine should also be avoided in such cases as prolonged use of dicyclomine may cause an up-regulation of muscarinic receptors causing an exaggerated response.[3] It may also act on autonomic muscarinic receptors leading to cardiac dysrhythmias. Drugs such as atropine and glycopyrrolate should also be minimally used as they may exaggerate anti-cholinergic symptoms. Serotonin syndrome may be an important differential diagnosis, especially in cases where the diagnosis of abuse or addiction is missed.[4] Although reversal agents were avoided in our case, using neostigmine may have a favourable cholinergic effect in such cases and can be used while titrating the dose of glycopyrrolate. Patients with substance abuse have an increased risk of intraoperative awareness.[5] In the present case, BIS was used to prevent this dreaded complication. Episodes of hypotension may be observed in such cases due to a decrease in catecholamine reserve as

a result of chronic sympathetic hyperactivity.[6] IV fluids and directly acting sympathomimetics such as phenylephrine are generally enough to manage such episodes.

Anaesthesiologists often encounter such cases of substance abuse more often in emergency surgeries. In this context, specific pharmacological implications of the drug on the body and its interaction with anaesthetic agents should be considered and a plan of anaesthesia should be adjusted accordingly to provide for a safe perioperative course.

Declaration of patient consent

The authors certify that they have obtained all appropriate patient consent forms. In the form the patient(s) has/have given his/her/their consent for his/her/their images and other clinical information to be reported in the journal. The patients understand that their names and initials will not be published and due efforts will be made to conceal their identity, but anonymity cannot be guaranteed.

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Conflicts of interest

There are no conflicts of interest.

Prabakaran P, Megha Gupta, Praveen Talawar, Mridul Dhar

Department of Anaesthesiology, AIIMS, Rishikesh, Uttarakhand, India

Address for correspondence:
Dr. Prabakaran P,
Room No. 69205, JR/INTERN Hostel, Building No 69, AIIMS Campus, Veerbhadra Road, Rishikesh - 249 203, Uttarakhand, India.
E-mail: prabakaranlee@gmail.com

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