Management of anesthesia for photoimmunotherapy

Dear Editor,

Photoimmunotherapy is a newly developed, highly selective cancer treatment where phototherapy is combined with immunotherapy. A conjugate photosensitizer and a monoclonal antibody are injected to target a specific tumor antigen.On exposure to near-infrared light rapid, selective cancer cell death occurs. It is used to manage residual tumors and distant metastases.[1-3]The main anesthetic challenge is providing anesthesia to a patient with minimum possible exposure to ambient light.

A 62 year-old-male patient, with a known case of advanced carcinoma lower lip and tongue, had undergone glossectomy, mandibulectomy, infrastructural maxillectomy, and anterolateral thigh and radial forearm free flap reconstruction over the last two years. He was now posted for photoimmunotherapy for the recurrence of carcinoma floor of the mouth. On examination, his mouth opening was 1cm, thyromental distance 4cm with restricted neck movements. He received injections of the photosensitizer and antibody and was kept in a darkened room. He was transferred to the operation theatre with his entire body including his face fully covered with blankets. The lights inside the theatre were turned off and electrocardiogram leads, non-invasive blood pressure cuff, and pulseoximeter probe were attached with minimal exposure to light.

As the existing intravenous catheter was nonfunctional, a new 18G catheter was placed under ultrasound guidance in the right cephalic vein under the drapes. As the patient had a difficult airway, we planned awake fibreoptic-bronchoscope-assisted intubation. The right nostril was exposed, decongested, and sprayed with 10% lignocaine spray, and dollops of 2% lignocaine jelly was applied. A transtracheal block was administered with 4ml of 2% lignocaine and the trachea was intubated with a 7.0mm cuffed Ring-Adair-Elwyn tube through the exposed right nostril. Correct placement was confirmed with endtidal carbon dioxide waveforms and he was induced with propofol 100mg. Glycopyrrolate 0.2mg and vecuronium 6mg were given. Anesthesia was maintained with sevoflurane 1.5–2% in air oxygen (1:1) mixture and dexmedetomidine infusion. The patient's lids were closed after applying lubricant jel. All theatre personnel wore eye-protective goggles. The patient received five cycles of phototherapy and the intraoperative blood pressure surges were managed with propofol 20–30mg boluses. At the end of the procedure, neuromuscular blockade was reversed and he was shifted on T piece, fully covered with blankets, to a darkened postoperative cubicle and was extubated 2 h later.

During the conduct of general anesthesia in these patients the anesthesiologist should be very watchful as the theatre will be darkened and the eye-protective, colored, tinted goggles will impede visibility further. It is prudent to have definite intravenous access as extravasation can go unnoticed intraoperatively. Identifying the site of gas leaks or disconnections in the circuit will be difficult. Changes in the color of the blood may go unnoticed. The pulse oximeter probe should be changed to a different finger every 30 min. Accidental needle sticks and tripping are possible. The brightness of the anesthesia monitors should be reduced and mode changed to night mode if options are available. It is concluded that vigilant monitoring during the conduct of general anesthesia for photoimmunotherapy avoids mishaps and particular care should be taken to avoid exposure of the patient to ambient light.

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 initial s 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.

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