Intravenous mishap following residual anesthetic drug in intravenous extension line

Sir,

We report here a case of intravenous (IV) mishap occurring in a 45-year-old female, a clinical case of hypertension, diabetes mellitus, coronary artery disease, postpercutaneous coronary intervention on polypharmacy, who underwent left-sided modified radical mastectomy for left-sided breast cancer. The case was conducted under general anesthesia (induction with calculated doses of fentanyl, propofol, and vecuronium with intermittent positive pressure ventilation using oxygen and isoflurane), paravertebral block with invasive arterial monitoring along with other routine monitors. We started the case with a 20-gauge IV cannula which had been inserted in the surgical ward, and attached a 100-cm extension line to facilitate drug administration, as the arm would be by the patient's side. As the drip was not running properly, we immediately secured another IV access in the foot after induction and connected it with a separate IV set which was made with two 100 cm extensions connected to it. We did not use the first drip further during surgery. Intraoperative course of the patient was uneventful. The patient was extubated once fully awake and obeying commands as well as met other extubation criteria. At the end of surgery the LMA was removed and, the patient was shifted to recovery. IV line in the foot removed and the IV bottle connected to the extension on the hand. On arrival in recovery room, the patient was fully awake, oriented, and monitor connected showed a heart rate of 89/min, blood pressure of 123/81 mm Hg, respiratory rate of 14/min, and SpO_2 of 98%. Then, after 5 min, the patient suddenly became unresponsive even to deep pain, respiratory effort became inadequate (respiratory rate of 10/min with minimal tidal volume), and SpO_2 dropped to 92%. This event was noticed once nurse in the recovery room started the IV drip. Bag and mask ventilation was started with 100% oxygen using Bain's circuit. Monitors showed a heart rate of 84/min, blood pressure of 200/102 mm Hg, and SpO_2 of 98%. Electrocardiogram (ECG) was showing ventricular bigeminy. Injection xylocard 2%, 3 ml IV was administered. Classic laryngeal mask airway (LMA) size 3 was inserted, and bag and mask ventilation was continued. Flickering of eyelid was noticed in response to verbal commands. Inadequate reversal of neuromuscular blocker was suspected, and neostigmine 1 mg and glycopyrrolate 0.2 mg IV were administered. After 5 min, respiratory rate and tidal volume improved and monitor showed a heart rate of 80/min. Blood pressure was 123/81 mm Hg and ECG was within normal limits. After 15–20 min, the patient was fully awake with sustained head lift of >5 s, sustained hand grip of >5 s, positive gag reflex, and with heart rate of 68/min, blood pressure of 150/79 mm Hg, respiratory rate of 18/min, and SpO_2 of 100%. After proper oropharyngeal suctioning, LMA was removed, and the patient was put on face mask with oxygen at 5 l/min. After close monitoring for an hour, she was transferred back to the parent ward. This event in our case was attributed to residual neuromuscular blocking drug and traces of propofol that might have been left behind in the IV extension in hand.

Literature search relating to critical care incidents in anesthesia owing to IV mishap revealed that although there are numerous incidents of similar type in pediatric age group, similar reports in the adult population are very few. There is a case report of 80 kg adult male becoming apneic and cyanosed after flushing of IV antibiotic in ward 4 h after surgery. The author attributed this to residual suxamethonium (7 mg dose) that was in the dead space of 18-gauge cannula.[1]

The National Patient Safety Agency was the first to create awareness among medical personnel when a baby sustained neurological damage due to flushing of residual neuromuscular blocker in an IV cannula in the ward.[2] The importance of flushing IV line before and after administration of IV drug is considered as a basic standard and is incorporated in anesthesia preprocedure checklist or in surgical safety checklist.[3] Unintentional administration of anesthetic agents previously recognized as drug error is very precisely classified as "'Never Event" by Harrop-Griffiths[4] should be truly perceived by all anesthesiologists as slightest mistake in this aspect can lead to catastrophes if go unrecognized.

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Conflicts of interest

There are no conflicts of interest.

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References

1. Stone RJ. Suxamethonium in the deadspace of an adult's indwelling intravenous cannula. Anaesthesia 1993;48:838.
2. Bowman S, Raghavan K, Walker IA. Residual anaesthesia drugs in intravenous lines – A silent threat? Anaesthesia 2013;68:557-61.
3. Walker IA, Reshamwalla S, Wilson IH. Surgical safety checklists: Do they improve outcomes? Br J Anaesth 2012;109:47-54.
4. Harrop-Griffiths W. Never events. Anaesthesia 2011;66:158-62.

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