

## [OS1-81] Don't Believe Everything You Read: Inadvertent Vecuronium Administration Due to a Mis-labeled Pre-filled Syringe

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A 9-year-old, 29 kg female presented to the GI suite for upper endoscopy for abdominal pain. This was the patient's first anesthetic; her past medical history, physical exam, and family anesthetic history were unremarkable.

One anesthesiologist [LG] served as sole anesthesia provider. An induction with N<sub>2</sub>O and sevoflurane (sevo) proceeded uneventfully. After IV placement, IV dexamethasone (4mg) and 2% lidocaine (2.5 ml) were given using hospital pharmacy-filled syringes. Propofol (20mg) and ondansetron (4mg) were given using syringes prepared by LG. A nasal cannula and bite block were placed, the patient was placed left side down, and the endoscopy began. Maintenance was via sevo/propofol.

After two minutes, the patient's SpO<sub>2</sub> fell, and the capnogram disappeared and remained absent despite a jaw thrust/chin-lift. The endoscope was removed; bag-mask ventilation raised the SpO<sub>2</sub> to 100%. Propofol was given, a laryngeal mask airway (LMA) was placed and the ventilator was set to pressure support mode with 1% sevo. The procedure ended 8 min later and sevo was stopped.

The patient had poor respiratory effort and appeared weak. LG suspected that the patient had been given a neuromuscular blocking agent (NMBA). LG and another anesthesiologist checked the drug syringes used during the case and in the drug tray prepared by pharmacy. Both counted the expected number of pre-filled vecuronium (5) and succinylcholine (2) syringes.

The patient remained apneic, and no end-tidal sevo was detectable. Tears formed in the patient's eyes and her heart rate and blood pressure increased. Glycopyrrolate (0.2mg) and neostigmine (1mg) were given. Within a minute the patient's respiratory effort improved. Since it appeared as if an NMBA had been given, more reversal agents were given to reach a full dose. The patient regained adequate ventilation for LMA removal.

Within 24 hours, the patient cried and related the stress of hearing people and being unable to move. Close contact was maintained with the family, the cause of the event was explained and a psychiatric interview was arranged. Long lasting psychological effects were considered unlikely. Ultimately, the patient and her family expressed gratitude for the care they received.

This case was discussed with other anesthesia staff and four other anesthesiologists reported similar situations suggesting an NMBA effect. Suspecting that pre-filled syringes labeled as lidocaine instead contained vecuronium, all syringes of both drugs were removed from anesthesia carts. It was determined that a pharmacy technician had produced mislabeled syringes by breaking protocol and filling syringes concurrently with lidocaine and vecuronium.

While pre-filled syringes have been shown to reduce drug administration error, the system is not infallible. Human vigilance, knowledge, and inferential strategies remain crucial to patient safety even with the rise of technology-based error detection and decision support systems. This case underscores the importance of timely, direct communication with patients and families and psychiatric evaluation when awareness during anesthesia is suspected. In this case, the proper recognition, communication, investigation and intervention steps were taken to keep the patient safe.

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