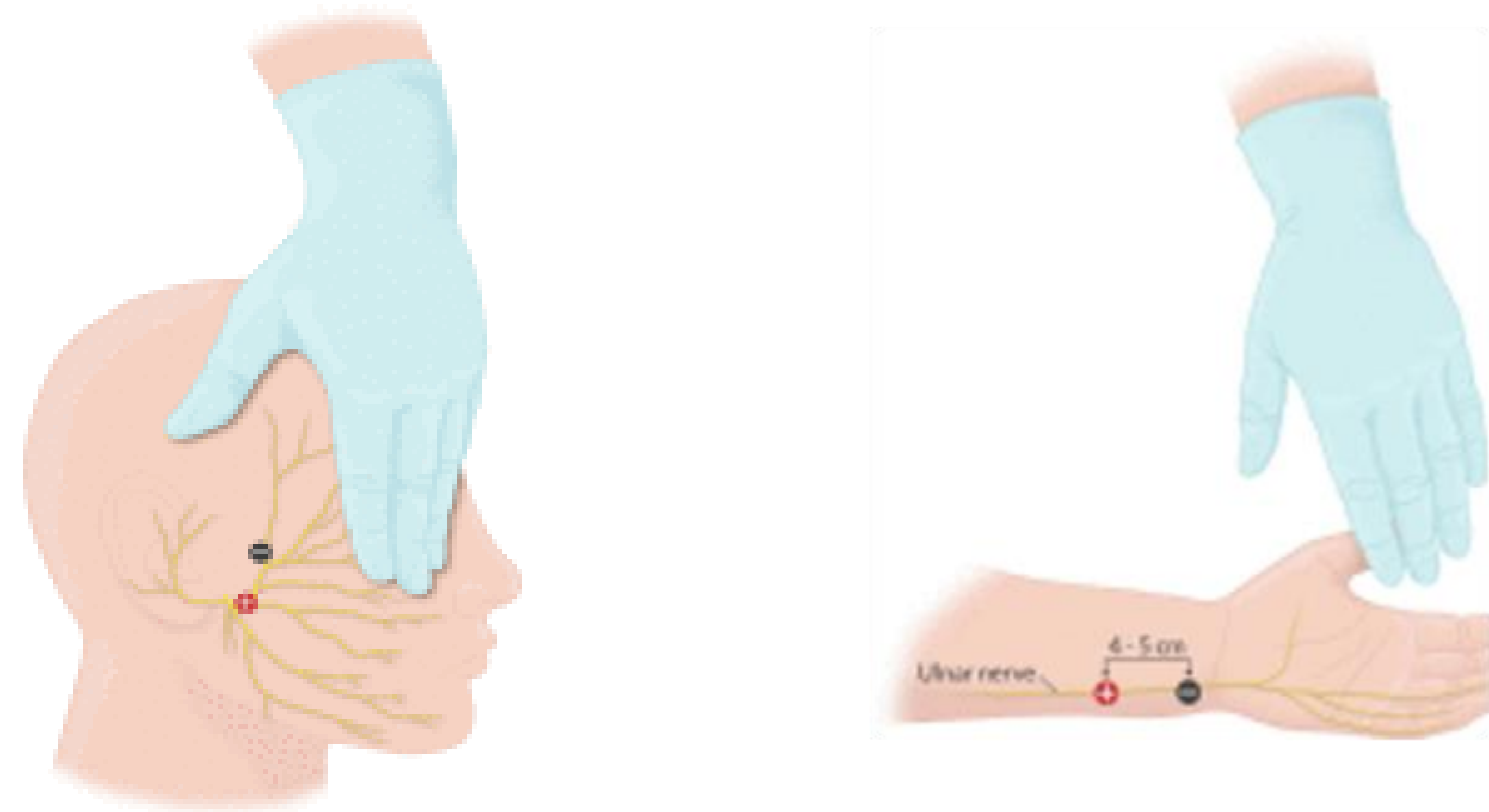


Botulinum Toxin: A Complicating Factor in Neuromuscular Monitoring

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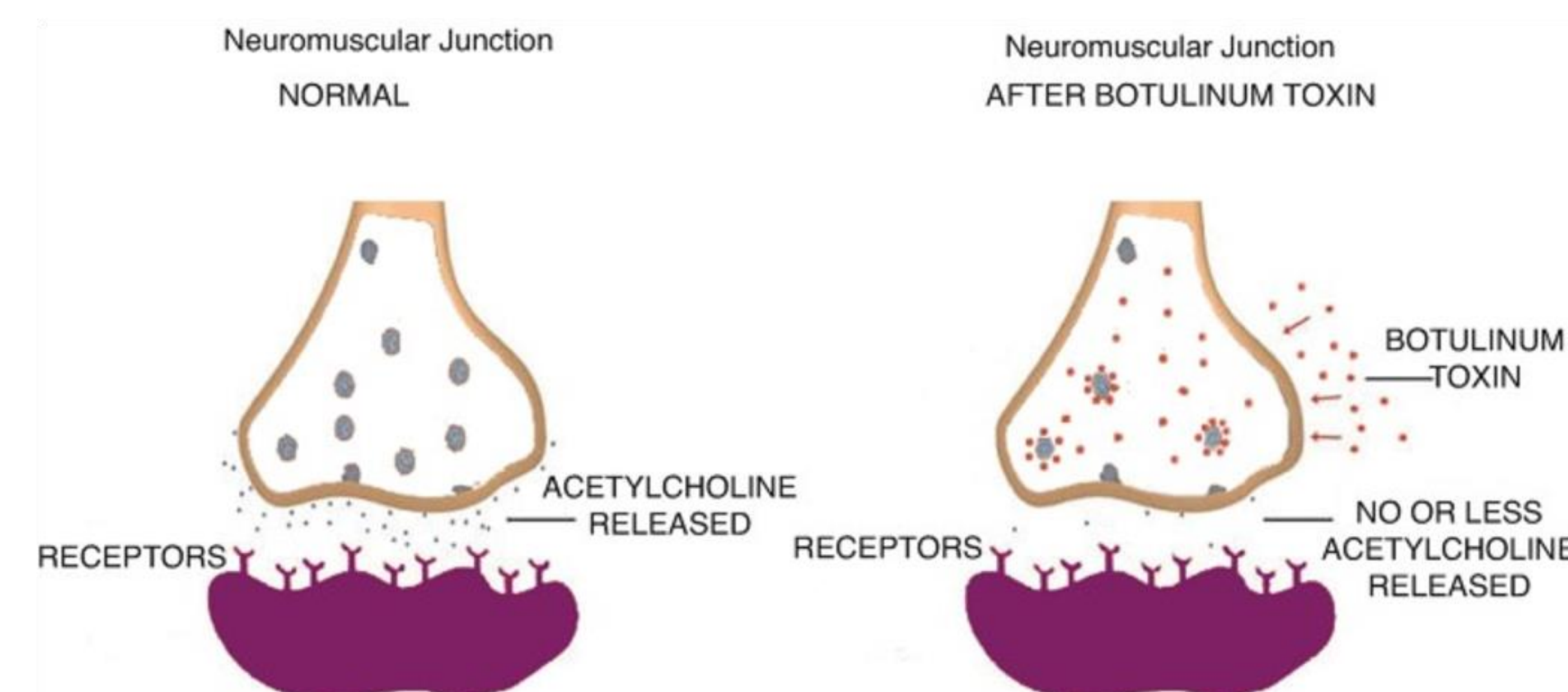
Introduction:

- Botulinum toxin has become the number one minimal invasive cosmetic procedure in the United States.
- Botox injections are easily obtained in the outpatient setting
- Botulinum toxin blocks the release of acetylcholine from the neuromuscular junction
- The ability of assessing the depth and recovery of neuromuscular blockade is impacted by the denervation from Botox injections



Case Study:

- 32 year-old female classified as ASA 2 presented for elective diagnostic laparoscopy. Patient's past medical history included hypertension, hyperlipidemia, and bipolar disorder.
- Preoperative anesthesia evaluation was unremarkable and the patient endorsed no prior surgical procedures.
- General anesthesia with intravenous induction of propofol, lidocaine, fentanyl, and 50 mg rocuronium for neuromuscular blockade was completed.
- 60 minutes post-induction the patient had 0/4 TOF and weak post tetanic twitch at the facial nerve. Based on the pharmacokinetics of rocuronium, the patient was re-dosed with 20 mg of rocuronium.
- Upon completion of the case, the patient's arms were untucked, and ulnar nerve TOF was utilized for confirmation of adequate reversal with sugammadex. Notably the twitches at the ulnar nerve were 2/4 vs 0/4 at the facial nerve.
- In PACU the patient endorsed recently undergoing Botox injections.



Discussion:

- Patients tend to not disclose their BoNT surgical procedure during the preoperative anesthesia assessment ^{2,3}
- The use of BoNT poses a significant challenge during cases especially robotic and laparoscopic during which the patient's arms are tucked
- Residual neuromuscular blockade can lead to emergent re-intubation in the postoperative recovery period if not adequately reversed¹
- When it is necessary to monitor relaxation at the facial nerve, preoperative assessment should include recent Botox injections, and evaluation of adequate reversal should not rely on response at this site.

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