Anesthetic concerns when paralyzing is not an option

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Introduction

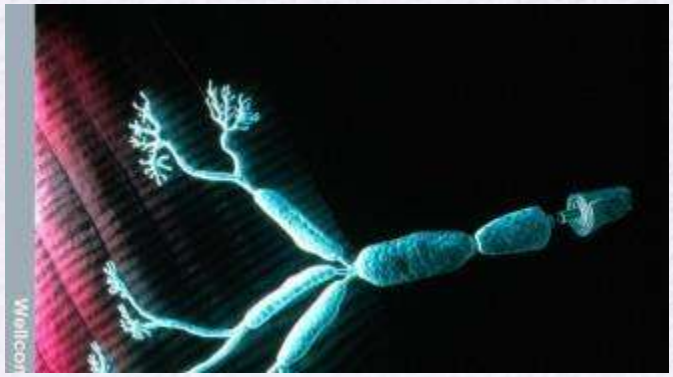
- Neuromuscular blockade is utilized in many of the surgeries performed today.
- There are two types of neuromuscular blocking agents: Depolarizing and Non-depolarizing agents
- The only depolarizing agent on the market today: Succinylcholine
- There are many Non-Depolarizing agents, such as: Rocuronium, Vecuronium, Nimbex

Why do we need muscle relaxation???

- To aid intubation
- To facilitate the surgical procedure
- To aid the surgeon

Disorders where NMB is best avoided

- Myasthenia Gravis- Best to avoid suxx ; NDMB resistant if not treated and prolonged effect-use lower dose (1/3)(with reversal Increased risk of cholinergic crisis)
- Lambert-Eaton- Sensitive to both
- Duschenne- Avoid Suxx, NDMB much longer recovery
- Musc Dystrophy- Avoid Suxx, NDMB much longer recovery
- Guillain Barre – Avoid Suxx, NDMB Sensitive
- Mult Scler- Avoid Suxx, NDMB Sensitive to
- ALS – Avoid suxx, NDMB Sensitive to
- Hunt Chorea- Prolonged Suxx, NDMB Sensitive
- Cereb Palsey- Suxx OK, NDMB Need more if on chronic anti-convulsants

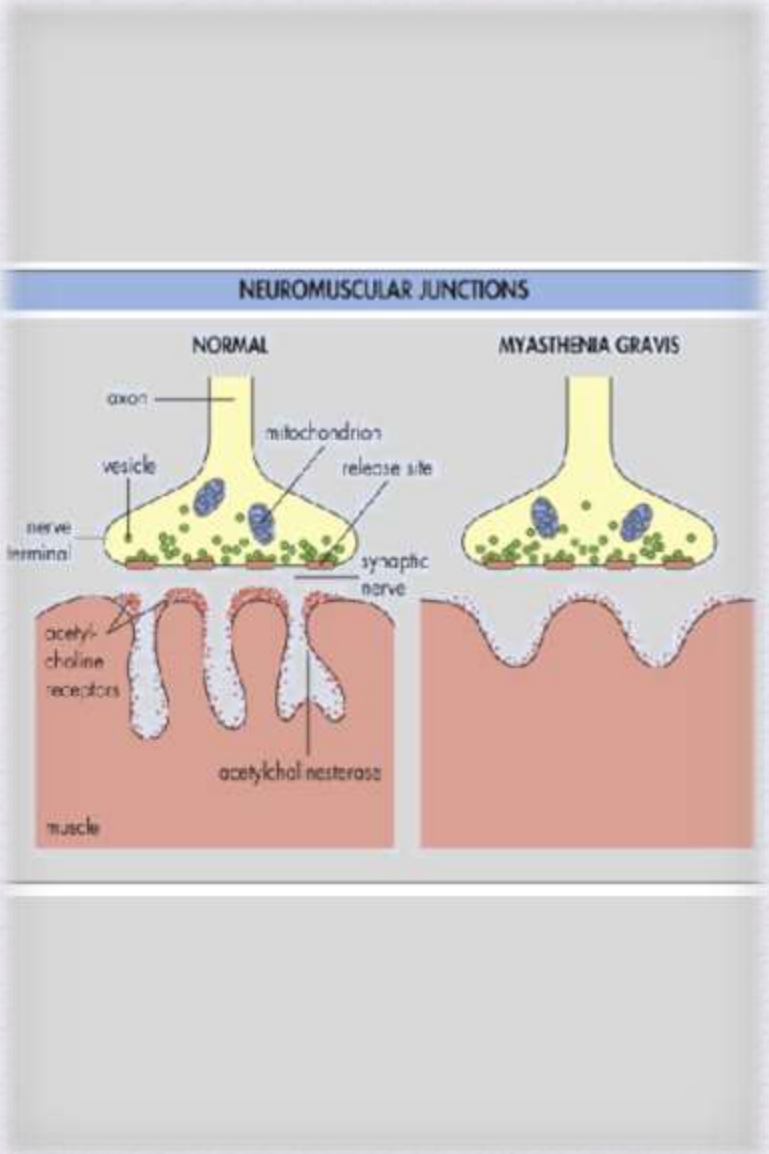


Discussion

- Myasthenia gravis
- A chronic autoimmune disorder in which there is a lack of AcH receptors at the neuromuscular junction

- Common symptoms:
- ✓ A drooping eyelid
- ✓ Blurred or double vision
- ✓ Slurred speech
- ✓ Difficulty chewing and swallowing
- ✓ Weakness in the arms and legs
- ✓ Chronic muscle fatigue
- ✓ Difficulty breathing

- Common medications: anticholinesterases (mestinon) and immune suppressants (prednisone) are both common medications



Case Presentation

- 46 year old female
- Scheduled for Robot assisted laparoscopic cholecystectomy
- No Known Drug Allergies
- Surgical Hx: No Problems with anesthesia in the past
- Medical Hx: Myasthenia Gravis (mild to moderate), Obesity
- Significant current medications: Mestinon 60 mgPO tid

Anesthetic implications and how this case was managed

- What are the problems here????
- Choice made to perform cholecystectomy laparoscopic
- No neuromuscular blockade used
- Induction: remifentanil, Lidocaine, and Propofol given for induction and sevoflurane inhalation prior to intubation

Maintenance

- Remifentanil drip at 0.375 mcg/kg/min (titrated to effect)
- Propofol drip at 120 mcg/kg/min (titrated to effect)
- Sevoflurane at 0.5 MAC
- Not always a need for neuromuscular blockade
- Patient was relaxed enough for surgeon throughout procedure

Emergence

- Extubated fully awake at end of case when strong enough
- Monitored closely in PACU for extended period
- Patient sent home when cleared

Anesthesia considerations with MG

- Pre-op: Assess severity and other common disorders such as, hypothyroidism, RA, lupus, anemia
- Assess current medications and doses
- Pre-op sedation and anxiolytics should be used with caution as MG patients have lower lung reserve

Continued

- Assess need for post-op ventilator support: if disease greater than 6 years, Mestinon dose 750 mg/day 48 hours pre-op, presence of COPD or vital capacity less than 2.9 liters
- Volatile gases can help relax muscles for intubation
- Extubation criteria: awake, head lift 5 seconds, sustained negative inspiratory pressure of -25 cm H2O, respiratory rate less than 30, vital capacity of 10 ml/kg, assess for bilateral vocal cord abductor weakness (stridor)
- Post-op analgesics given with caution
- Reintroduction of anticholinesterase post-op is very important

References

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Thank You

Questions????