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 mg PO 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
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


Thank You

Questions????