

# NEUROMUSCULAR BLOCKERS



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# CASE 7



- A 47 year old patient is undergoing the clipping of intracranial aneurysm of the anterior communicating artery under general anesthesia .. The surgery is being performed under the microscope .. So even the smallest movement by the patient could have devastating consequences.

# QUESTION



Q: how can the patient be protected and the surgery allowed to proceed?

- For induction we do not use any IV agents that could raise intracranial pressure like **ketamine**. However we use **thiopental**, **etomidate** or **propofol** that has no significant effect on CSF
- As for maintenance we use **fentanyl** and its derivatives  
Then as neuromuscular blockers we use **vecruonium** or **rocruonium** to avoid any complications

# QUESTION:



- Q: what are the clinical pharmacology of the neuromuscular blockers ?
  - Depolarizing (Suxamethonium, Succinylcholine):  
Acts as acetylcholine
  - Nondepolarizing:  
Block neuromuscular junction plate. They compete with acetylcholine.

# QUESTION:



- Q:maintenance of blockade: how much is enough?

<u>TOF Response</u>	<u>Approximate Percentage of Receptors Blocked by Agent</u>	<u>Clinical Significance</u>
Four Twitches	0 to 75	May be able to move although may experience weakness. Amenable to reversal of blockade with antagonist
Three Twitches	75	May need to administer additional drug to prolong relaxation. Short or intermediate acting agents may be reversible
Two Twitches	80	Suitable for short term relaxation as well as long term mechanical ventilation.
One Twitch	90	Usually gives conditions suitable for short term procedures including intubation and long term mechanical ventilation.
Twitches Absent	100	Conditions for intubation. Long term saturation may lead to prolonged effects.

# QUESTION:



Q: reversal of the neuromuscular blocked and emergencies?

Steps of emergence:

- Turn off the agent (inhalation or IV agents)
- Reverse the muscle relaxants.
- Return to spontaneous ventilation with adequate ventilation and oxygenation
- Suction upper airway
- Wait for pts to wake up and follow command
- Hemodynamically stable Reversal: Is used for nonNdepolarizing\$ muscle relaxants and they are neostigmine, glycopyrolate or\$atropine.



THANK YOU