



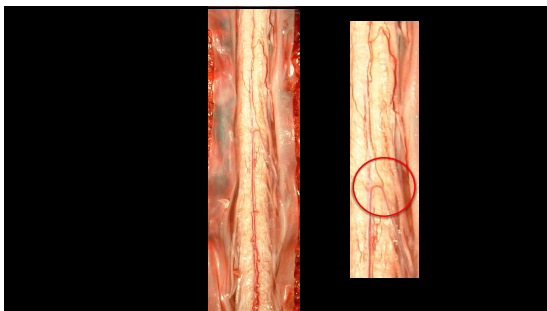
Motor Evoked Potentials (MEPs) provide highly reliable information on spinal cord function during open Thoraco Abdominal Aortic Aneurysm (TAAA) repair: advantages, requirements and why it hasn't worked for some groups

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No Disclosures




TAAA

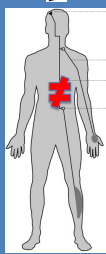
- Spinal cord perfusion is totally changed
- Collateral network takes over
- Anatomy has become irrelevant
- It is all about function
- Very high variability
- Unpredictable



**Shaggy thoraco-abdominal aorta:
only one single open intercostal artery**




Is this intercostal artery important?




electrical stimulation
 500 V, -1.2 A, 5 serial stimuli

- pyramidal cell in motor cortex
- peripheral nerve
- pyramidal tract
- alpha motor neuron in anterior horn of spinal cord

MEP response
abd. pol. brevis muscle

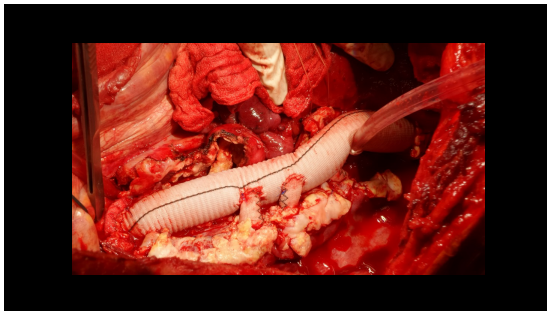
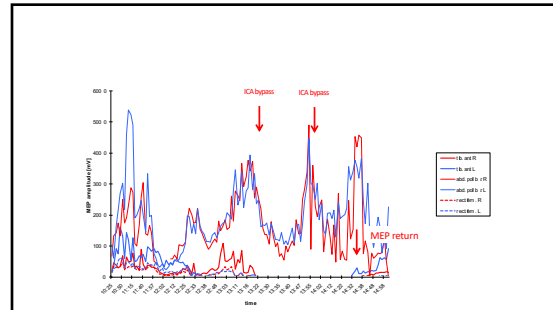


MEP response
sibolar anterior muscle



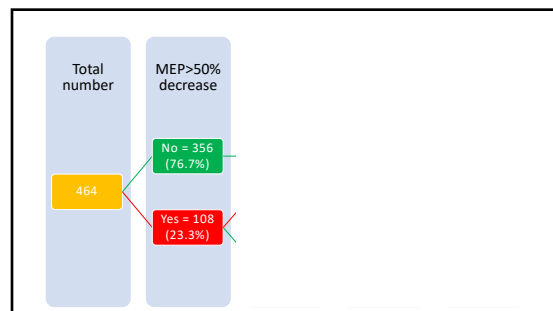
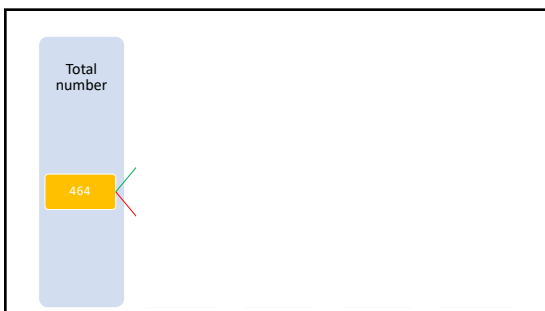
Prerequisites for reliable MEP monitoring

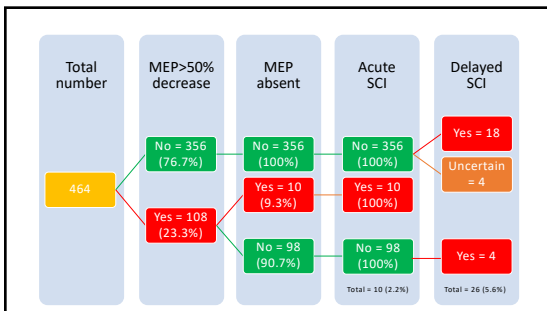
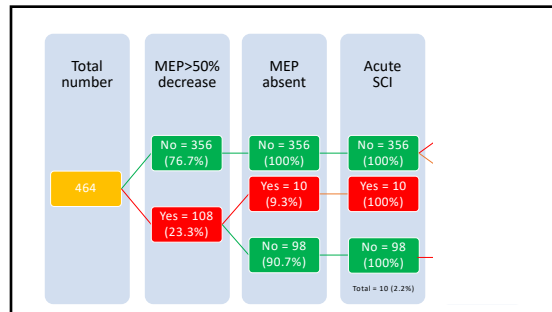
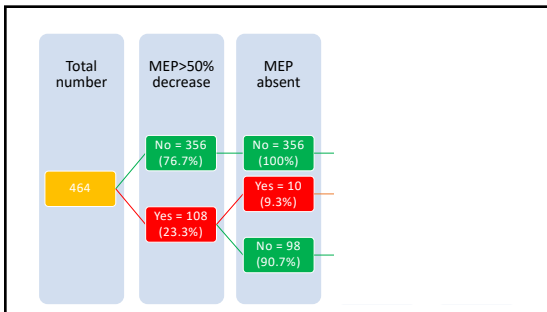
- Strict protocol regarding voltage and ampere
- Adequate MEP equipment
- Strict anesthesia strategy: combination of Ketamine and Propofol; never inhalation anesthesia with Halothane/Isoflorane



Measures in case of significant MEP decrease

- Increase MAP
- Increase distal aortic pressure
- Manage CSF pressure
- Check anesthesia medication
- Check essential lab panel





Summary

- Monitoring motor evoked potentials (MEPs) provides 100% reliable information on spinal cord function
- MEPs identify spinal cord ischemia and guides surgical interventions to restore function
- Management of segmental artery revascularization based on MEPs reduces spinal cord ischemic events
- Strict anesthesia protocol is mandatory to achieve reliable MEP monitoring

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