Safety Pharmacology Society Webinar:

Common Artifacts Seen in Blood Pressure Signals and Methods for Surgical Refinement

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Common Artifacts in Systemic Blood Pressure Waveforms

- Signal drop out
- Waveform « dampening » or absence of signal
- Positional catheter

Waveform tracings courtesy of Jason Cordes and Laura Ringer, Global Safety Pharmacology, Pfizer Inc
Signal Drop Out

- Implant too far away from antenna
- Surgical contribution unlikely
Waveform dampening or absence of signal

- Catheter backing out of vessel (to one of smaller diameter)
- (Early clot) at catheter tip
Positional catheter

- Change in artery diameter [and change in blood flow?] or catheter tip position

**External iliac artery**

**Aorta**
Surgical Refinements – Prevent Catheter Migration and Early Failure

- Encircling suture techniques
  - Two plus connecting “tether” ties
  - Multiple – # based on proximity to heart

- Suture type

Surgical Refinements – Prevent Catheter Migration and Early Failure

- Selection of artery relative to catheter diameter
- Avoid use of tissue adhesives
- Insert catheter with precision to prevent gel displacement
  - Evaluate tip if multiple attempts are made
Surgical Refinements - Prevent Implant and Catheter Migration

- Place implant between the sartorius and gracilis muscles
  - Limited dissection between muscle planes better supports device
  - Deeper pocket protects implant

Surgical Refinements - Prevent Implant and Catheter Migration

- Anchor distal-most encircling vascular suture into one of the suture flanges on the implant
Surgical Refinements - Prevent Implant and Catheter Migration

- Insertion of catheter into the descending geniculate artery
  - Branches off main femoral artery at the middle to distal one third of the femur
  - Reduce possibility of lameness
- Smaller dissection planes are created and less shifting/movement of implant early postop

General Surgical Hint – Incision position prevents implant exposure/perforation

- K9: Create skin incision « caudal » to artery
- NHP: Create skin incision up along the slope of the pectineus muscle
- Curvilinear shape increases exposure without increasing incision size or tissue trauma

Questions and Discussion