UNMC Orthopedic/Anesthesiology Consensus on the Use of Regional Anesthesia in Traumatic Injuries

I. Policy:
   1. This policy is intended to develop a consensus on the use of regional anesthesia in traumatic orthopedic injuries.

II. Purpose:
   1. Ensure a uniform and safe approach to this specific patient population with respect to the use of regional anesthesia.
   2. Define patients at high risk for acute compartment syndrome (ACS) based upon injury patterns as identified by McQueen and Gaston.¹
   3. Define contraindications/relative contraindications to regional anesthesia in this patient population.
   4. Define goals of regional anesthetic technique.
   5. Define role of APS in preoperative and post-operative management.

III. Injury patterns which will be considered contraindications to regional anesthesia:
   1. Tibial diaphyseal fracture
   2. Massive soft-tissue injury
   3. High energy distal radial fracture
   4. Crush syndrome
   5. Diaphyseal fracture of the radius and/or ulna
   6. Evidence of traumatic nerve injury or dysfunction
   7. Evidence of coagulopathy
   8. Altered mental status
IV. Injury patterns which may be have potential relative contraindications to regional anesthesia:

1. The following injury patterns will require discussion with orthopedic surgery prior to attempted nerve blockade:
   
   1. Femoral fracture
   2. Tibial plateau fracture
   3. Injuries high risk for associated vascular or nerve disruption such as true knee dislocation or elbow dislocation

   a) Exception if: orthopedic opinion or vascular studies rule out vascular injury and a normal neurological exam is present.

V. Goals of regional anesthesia:

1. Improve pain control, functional status, minimize narcotic side effects.
2. Minimize dense motor and sensory blockade by utilizing dilute long acting local anesthetics for post-operative pain control:
   
   1. Bupivicaine or ropivicaine solutions will not exceed 0.25% concentrations in single shot or catheter solutions.
3. Dense motor and sensory blockade will only be used when surgical regional anesthesia is requested:
   
   1. Mepivicaine or lidocaine will be utilized to limit the duration of surgical regional anesthesia.

VI. Role of APS in preoperative and post-operative management:

1. APS will perform a thorough neurological exam to exclude pre-existing neurological injury or signs of ACS prior to nerve block.
2. APS will communicate to orthopedic surgery the type of block done and expected sensory or motor distribution anesthetic effects.
3. APS will provide standard post-op daily evaluation.
4. APS will provide prompt ad-hoc bedside evaluation of patients and communicate to orthopedic surgery if displaying signs concerning of ACS, such as:
   
   1. Breakthrough pain despite adequate block sensory distribution.
   2. Breakthrough pain inconsistent with block duration.
   3. Sensory or motor impairment inconsistent with expected block distribution or duration.
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VII. References: