Strategies for Pneumatic Tourniquet Use

Failure or misuse of pneumatic tourniquets can lead to muscle ischemia, nerve damage, convulsions, and coma. Addressing cuff availability and educating staff about cuff selection, application, and inflation pressure are fundamental strategies to avoid complications.

Before Patient Use
- Maintain an adequate selection of cuffs.
  - Contoured cuffs are desirable for excessively tapered limbs.
  - Do NOT reuse single-use cuffs.
- Ensure electronic controllers are connected to line power and/or have adequate battery capacity; perform self-test.
- Select the proper size cuff, and look for cracked tubing and loose connectors.
- Keep tubing off the floor and routed to avoid accidental contact by personnel.
- Apply a soft padding uniformly to the operative limb cuff site.

After Applying a Tourniquet Cuff
- Do not allow prepping solution to migrate under cuff.
- Determine minimum limb occlusion pressure (LOP).
  - Place a Doppler stethoscope on a distal arterial pulse.
  - Increase cuff pressure until the pulse stops.
- Set cuff inflation pressure for adult patients at LOP plus:
  - 40 mm Hg if LOP is less than 130 mm Hg,
  - 60 mm Hg if LOP is between 131 and 190 mm Hg, or
  - 80 mm Hg if LOP is greater than 190 mm Hg.
- Set cuff inflation pressure for pediatric patients at LOP plus 50 mm Hg.
- Minimize cuff inflation time.
- Notify the surgical team of elapsed inflation time at regular intervals.
- Monitor cuff pressure during the procedure, especially when repositioning the limb.
- Remove cuff and padding immediately after completing procedure.
- Indicate the following in patient record:
  - Times of inflation and deflation
  - Inflation pressure(s)
  - Site of cuff placement
  - Controller ID number

Include Tourniquet Controllers in the Facility’s Technology Management Program
- Inventory tourniquet controllers so that they can be identified and located in the event of hazard and recall notices.
- Schedule units for routine inspection and preventive maintenance.

For more information, visit http://www.patientsafetyauthority.org.

Sources:

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