

Application of tourniquet



Critical points

1. The tourniquet functions badly or not at all.

Action:

- Check the functionality of cuff and tourniquet before use.
- Use a larger cuff.

2. Complications occur due to the use of the tourniquet.

Action:

- Make sure that the skin and soft tissue under the cuff are well-protected.
- Avoid pooling of liquids (disinfectants) under the cuff.
- Adapt the pressure of the tourniquet to the (systolic) pressure of the patient and the thickness of their muscles and soft tissue. The connection tube proceeds proximally from the cuff to the equipment. The tube is placed, without twisting or putting pressure on the skin, besides the patient (never beneath the patient).
- Use the tourniquet up to two hours maximum. Inform the surgeon.
- Drape the wound before the tourniquet is deflated.
- Lift the extremity above heart level just before opening the cuff.

Note

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Check functionality of equipment before use.

Avoid pooling of liquids and pressure points.

Procedure

This is a suggested procedure. Please follow the guidelines and instructions of your hospital.

Note



Discuss inflation, pressure, and times with surgeon and anesthesia care team.

1. Prepare material:
 - Cuff (size adapted to limb)
 - Synthetic cotton
 - Connection tube for tourniquet equipment
 - Tape

2. Discuss and define pressure of the tourniquet with the anesthesia team and the surgeon. The pressure is defined based on the systolic pressure. The upper extremity's pressure should be 75–100 mmHg above the systolic pressure but 250 mmHg at maximum. The lower extremity is the systolic pressure x2 with a maximum of 350 mmHg.
3. Fix the anesthetic frame. Uncover the injured extremity and prepare the patient.
4. Disinfect your hands.
5. Check skin condition for injuries.
6. Apply the cotton circular around the extremity, without wrinkling, on an area with most muscle mass.
7. Position the cuff on the cotton. Fix the cuff well with the connection tube proximally.
8. Connect the tube well to the equipment.
9. Cover the distal edge of the cuff with a tape (to avoid pooling of liquids under the cuff).
10. The extremity is held up (above heart level) just before inflation of the cuff for 1 to 3 minutes.
11. Inflate the cuff, control the pressure, and communicate with the anesthetic team.
12. Document use, pressure, time, and irregularities of tourniquet use.

Reference(s)

- **McEwen JA [Internet]**. Applying the Tourniquet. [Accessed November 2013]. Available from: http://www.tourniquets.org/use_care.php#applying.
- **AfPP**. *Standards and recommendations for safe perioperative practice*. 3rd ed. Harrogate: Association for Perioperative Practice (AfPP); 2011.
- **AORN**. *Perioperative standards and recommended practices*. 2010 Edition. Denver: AORN Inc; 2010.