



Scenario Title: pneumatic tourniquet during AVF creation

General Learning Objectives:

- ✚ Performs focused patient assessments.
- ✚ Evaluates patient assessment data.
- ✚ Identifies the primary patient care problems/nursing diagnoses.
- ✚ Prioritizes patient care.
- ✚ Implements patient care that meets quality, safety, and evidence-based standards.
- ✚ Collaborates with team members as appropriate.
- ✚ Communicates effectively with patient, family, and health care team.
- ✚ Provides patient education.

Scenario Focused Objectives:

- ✚ Understand the purposes of using pneumatic tourniquet.
- ✚ Identifying Guidelines on Using a Pneumatic Tourniquet.
- ✚ Learn Proper Pneumatic Tourniquet Application & Technique.
- ✚ Identifying Complication of Pneumatic Tourniquet Application.

Case Details:

Mr. Ayman 28 years old, was admitted today for Radio-Cephalic Arteriovenous Fistula Creation (AVF) since he was diagnosed with ESRD 6 months ago, and he is on Hemodialysis schedule 3 times /week. The surgeon and the attending anesthetic Physician are planning to use Regional Anesthesia for the surgery

Now the physician is ordering to prepare for and apply pneumatic tourniquet to create less blood field to prepare the patient for the surgery.

BP: 125/80 Pulse: 90 SpO₂: 98% Temp: 37.5c RR: 16

History / Back Ground:

Past Medical History: HTN.

Past Surgical History: Rt. internal Jugular CVC 6 months ago.

Family History: Father died at age 80 with MI.

Social History: married, no smoking, working as a teacher at school.

Role Assignment:

- 1- Surgeon.
- 2- Anesthesia Physician.
- 3- Anesthesia Nurse.
- 4- Theater Nurse.

Scenario Running Duration: 20-25 min

Scenario Debriefing Duration: 20 min.

Setting: Operation Room (SimMan 3G B)

Equipment's:

- 1 – PPE
- 2 – Monitor
- 3 -Pneumatic Tourniquet kit
- 4 –IV Access
- 5 –IV Medication
- 6 –Local Anaesthesia
- 7 –Vital Sign
- 8 –SimMan 3G

- 9 -
- 10 -
- 11 -
- 12 -
- 13 -
- 14 -
- 15 -
- 16 -

Simulation Pre-Briefing Form

Critical thinking questions

Pre starting any scenario the student will be prepare to answer the following questions:

1 - What Is a Pneumatic Tourniquet?

2 – Identify Guidelines on Using a Pneumatic Tourniquet?

3- Why & when is a Pneumatic Tourniquet Used?

Patient state	Right Action
<p>State 1:</p> <p>Patient is lying over the OR bed awake, Conscious, Oriented.</p> <p>The patient vitals at ward :</p> <p>BP: 125/80 Pulse: 90 Spo2: 98% Temp: 37.5c RR: 16</p>	<ul style="list-style-type: none"> ✚ Wash hands. ✚ Introduce yourself. ✚ Identity your patient (2 identifier). ✚ Assessment and physical examination of the patient. ✚ Establish IV access. ✚ Patient monitoring / vital signs. ✚ Equipment Preparation (Pneumatic Tourniquet Kit). ✚ Communicate with patient and explain procedure. ✚ The proper size cuff needs to be determined and chosen for placement. ✚ Use two layers of padding (Orthopedic Cotton Bandage) between the tourniquet and the patient's skin. ✚ The extremity needs to be exsanguinated by elevating the arm for at least a minute to allow blood to drain out. ✚ While the arm is elevated, starts wrapping the arm tightly with Esmarch's bandage. ✚ Start at the fingers and moving up toward the shoulder. ✚ Apply pneumatic tourniquet. ✚ Reassess Vital Sign of the patient (BP). ✚ The pneumatic tourniquet is set to the appropriate pressure to keep blood from returning. ✚ The tourniquet pressure should be 50 mm Hg above the systolic blood pressure ✚ Start anesthesia induction as per physician's orders. ✚ Intraoperative monitoring, Blood pressure, Tourniquet pressure, Tourniquet time.

State 2:

The surgery is completed after 60 minutes and the doctor is asking you to deflate the pneumatic tourniquet and to take care of the patient.

at the surgeon's request, deflate the tourniquet cuff by taking the following steps:

- ✚ Apply pressure dressings over the incision to protect the wound from blood resurgence.
- ✚ The final bandage is applied and pressure is exerted over the incision prior to tourniquet cuff deflation, to prevent blood resurgence.
- ✚ Deflate the tourniquet cuff slowly to establish immediate venous return and prevent engorgement and complication as hypotension.
- ✚ Record the time of deflation.
- ✚ Immediately remove the deflated cuff and any underlying limb protection following cuff deflation.
- ✚ Record the time of cuff removal.
- ✚ Check the circulation of the limb. Note the return of color to the limb and any abnormalities.
- ✚ Inspect the cuff site and note any signs of soft tissue damage.

Full documentation about the whole procedure:
Identification of the person who applied the cuff
/Location of the cuff/Times of inflation and deflation of the tourniquet /Length of tissue aeration periods, if applicable/Original tourniquet pressure /Initial systolic blood pressure /Subsequent systolic blood pressures.

End of Scenario