FemoStop Compression Procedure - Post Anaesthetic Care Unit

Effective: 4 May 2017

1. Guiding Principles

Any procedure that involves placement of a catheter inside a blood vessel carries certain risks and may be considered a high risk procedure at Geraldton Hospital. Some of the risks may include damage to the blood vessel, bruising or bleeding at the puncture site and infection.

The aim of the procedure is to guide nursing practice in the assistance of the application of a femoral compression device. This is to ensure safe and therapeutically correct techniques are utilised by staff to minimise the risk to the patient when controlling bleeding post femoral artery therapeutical or diagnostic catheterisation. Geraldton hospital only undertakes lower limb, (including iliac artery) and upper limb angiograms and angioplasty.

This procedure requires two (2) nursing staff who must be deemed competent in keeping with the principles of the WACHS Nursing and Midwifery Practice Framework and Guidelines.

Nursing staff must also be deemed competent to care for patients with an arterial sheath, vascular closure device and/or a femoral compression device following an angioplasty.

2. Procedure

The FemoStop comes in four parts; belt, arch, manometer and three-way stopcock. Instructions on use of FemoStop Application are included in Appendix 1.

2.1 Prior to application of device, a check needs to be completed

1) Haemodynamic parameters, BP, Pulse, neurovascular observations, pedal pulses present and sites marked must be recorded on the following forms:
   - MR92 Pre-Operative Anaesthetic Record – PACU section, MR149 WACHS Neurovascular Observation Chart and transcribed on discharge from PACU on to the MR140A.
   - MR140A WACHS Adult Observation and Response Chart. (Vascular patients routinely have an extensive range of other co-morbidities and as such patients will have very weak or absent palpable pedal pulses, a doppler may be needed to be used).
2) Be aware of potential complications – Hypertension, Haematoma or False Aneurysm at surgical site.
3) Provide patient with an explanation of procedure and obtain consent. Enforce the importance of ensuring the limb remains straight, and after 3 hours or as specified in the post-operative instructions, they can begin to ambulate gently.
4) Assess the patients level of comfort (e.g. level of pain, swelling at surgical site not present), and encourage patient to use a bottle/pan.

5) Position patient in the supine position with head up to 30 degrees on pillow. The patient will be in this position for 1.5 - 3 hours so they need to be informed of this
6) The application of FemoStop must be applied immediately post removal of sheath prior to transport to the post-acute care unit (PACU).
7) Refer to Appendix 2 - Nursing Alert for the contraindication of the use of FemoStop.

2.2 Application of device

1) The FemoStop can be applied prior to or after transfer off the operating table.
2) Perform hand hygiene and apply sterile gloves.
3) Explain procedure to the patient and obtain consent.
4) Position the paper belt under the patient's hips.
5) Ensure the belt is not creased, square to the body and equal lengths on both sides.
6) Lower third of belt is in line with the puncture site.
7) Check pedal and distal pulses; the dorsalis pedis and the posterior tibialis. If not able to palpate the pedal pulses, then utilise doppler and mark the sites.
8) Attach the dome to the arch by turning and clicking into place.
9) Detach the cover of the dome without touching the surface.
10) Line the star shape guide over the marked puncture site, secure the belt.
(The dome is placed either 2 finger width under or over the femoral artery puncture site of the vessel; the dome uses the femoral head to help with compression.
(The skin puncture site **is not** the vessel puncture site.)
11) The access site which is the skin access should be visible through the dome.

2.3 Compression Procedure

1) Ensure belt is not too tight as this will affect the dome device, you should be able to insert two fingers each side of the belt comfortably.
2) Attach the three-way stopcock to the dome and then connect the manometer directly to the three-way stopcock, ensuring the valve is in the 'off' position.
3) Slowly inflate to 60-80 mmHg, the operating surgeon will remove the sheath, inflate a further 20mmHg pressure **above the** patient's systolic pressure, hold for 1 – 3 minutes. Turn the stopcock to the off position.
4) Check Pedal Pulses - the dorsalis pedis and the posterior tibialis. If not able to palpate the pedal pulses, then utilise doppler. (*Pedal pulses should be affected but not necessarily obliterated at this stage*.)
5) **Note the pressure and time on the belt and document in the patient medical records.**

THE NURSE MUST STAY WITH THE PATIENT IN PACU

6) On arrival in PACU decrease pressure by 20mmHg – note time and pressure on belt.
7) Record observations 5 minutely for 15 minutes on the MR140A until haemostasis are achieved.

8) Check puncture site for bleeding, swelling or pain.
9) Slowly decrease pressure by another 20mmHg until you get a palpable pedal pulse using doppler or fingers – leave in this position for 15 minutes.
10) Over 5 minutes intervals reduce in 20mmHg increments until you get to 50 mmHg on the manometer, leave it in this position for 1-2 hours. (Can be left in this position for 3 hours maximum.)
11) Reduce to 0mmHg and observe site for bleeding, there may be bruising to the site.
12) If no issues detected, remove the FemoStop completely.
13) Clean area and apply waterproof dressings
14) After 10 minutes the patient may sit and advise the patient to support area if coughing.
15) Notify surgeon of the need to reapply the FemoStop if any bleeding, bruising and swelling, or severe pain at the surgical site is apparent.
16) Document all information into the patient's medical record.

3. Responsibilities

1) The scrub and circulating nurse are responsible for applying the FemoStop when the patient is in the operating room.
2) If applied in PACU, it will become the responsibility of the PACU nurse and one of the surgical team to apply the device.
3) Staff are to follow the guidelines set out for the device.

4. Compliance

Failure to comply with this policy may constitute a breach of the WA Health Code of Conduct (Code). The Code is part of the Employment Policy Framework issued pursuant to section 26 of the *Health Services Act 2016* (HSA) and is binding on all WACHS staff which for this purpose includes trainees, students, volunteers, researchers, contractors for service (including all visiting health professionals and agency staff) and persons delivering training or education within WACHS.

WACHS staff are reminded that compliance with all policies is mandatory.

5. Evaluation

Monitoring of compliance with this document is to be carried out by Clinical Nurse Theatre; Vascular Team Leader.

1) Six monthly auditing is to be undertaken using the Clinical Incident Management System (CIMS) regarding adverse outcomes relating to the use of the FemoStop procedure.
2) Audit results are to be tabled at the Theatre nursing staff meeting and Theatre Planning meeting and directly with the Vascular Surgeon.
3) CIMS are to be tabled at the Regional Safety & Quality committee

6. References and Acknowledgment

1) RADI Medical Systems FemoStop Low Emission System. Product Information
2) St Jude Medical - FemoStop Gold Compression Assist Device
3) Armadale Health Service - Post-operative Care of Patients following Angioplasty Procedure (February 2017-2020).
4) Fiona Stanley Hospital - Femoral sheath Removal Post Procedure Using Femostop® II Haemostatic Device

7. Related Forms

MR149 WACHS Neurovascular Observation Chart

MR140A WACHS Adult Observation and Response Chart

This document can be made available in alternative formats on request for a person with a disability

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Directorate:	Nursing and Midwifery Services	**TRIM Record #**	ED-CO-14-22222
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Appendix 1

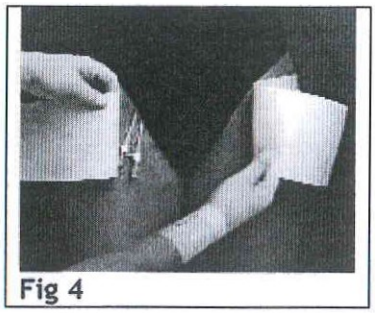
Fig 4

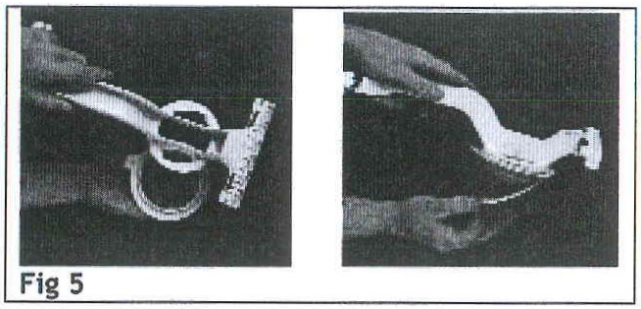
Fig 5

Attach dome to plastic bridge, peel back lid, keeping dome sterile

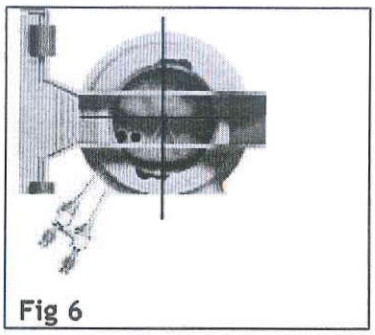
Fig 6

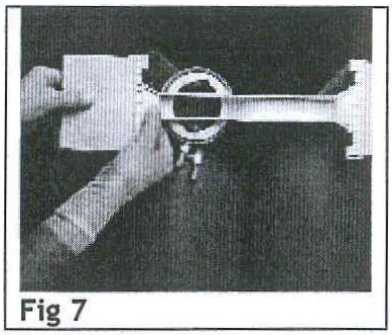
Fig 7

Centre the dome by utilising the transparent viewing window on top of the FemoStop.
Dome should be positioned approximately 2cm proximal and medial from skin incision site.
Attach belt by threading the belt through loosened locks on either side of plastic arch.

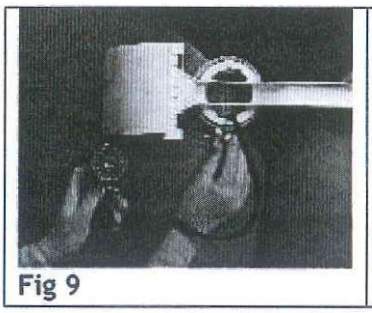
Fig 9

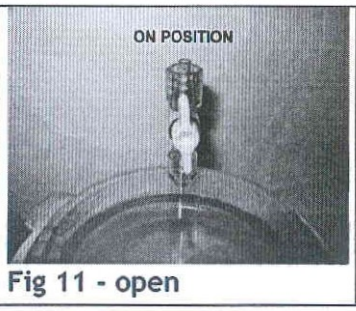

Fig 11 - open

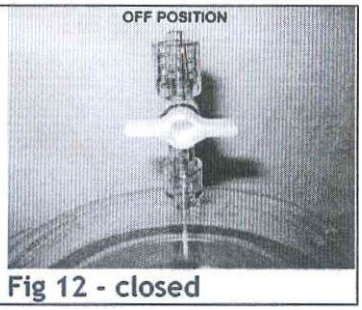

Fig 12 - closed

Open stopcock and inflate to 20-80mmHg above the patient's baseline systolic pressure
Only maintain this from 1 – 3 minutes, See Nursing Alert Appendix 2.

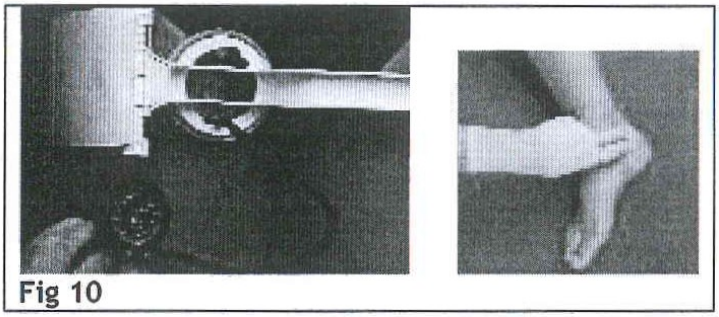
Fig 10

Appendix 2

NURSING ALERT

- To avoid limb ischaemia – do not leave the dome of the FemoStop inflated 10 – 20 mmHg above the patient's systolic blood pressure for longer than three minutes.
- Avoid releasing pressure from FemoStop dome via the FemoStop pump too quickly. Slow release will reduce the risk of flushing thrombotic material into the artery. To avoid tissue damage, ensure the FemoStop device is not left on the patient for an inappropriate length of time. This can also cause thrombosis, embolization and therefore pain injury or death.
- If a large haematoma is present and the puncture site is unable to be directly palpated then the FemoStop should not be used in this situation – continue digital pressure.