

7.0 Care of Midlines From C&V VAD guidelines

Date Inserted:

Indwelling lifespan (days): 29 days

Remove by date:

General Points	Midlines
<p>Assess external length of Midline before use: if the external length has changed since insertion seek advice - see Chapter 6 Managing Complications.</p> <p>Take care at all times not to pull the Midline out. Remember there's nothing to keep the Midline in apart from the dressing</p> <p>Avoid compression to vein containing the Midline. Do not use blood pressure cuff. Any bandage / tubular dressing must be loose.</p> <p>Use volumetric pump with a filtered giving set when infusing blood products to avoid blockage.</p> <p>Types of Midline used in the Haematology & TCTU and Critical Care:</p> <ul style="list-style-type: none"> • Groshong – blue in colour. A Groshong Midline can be either open ended or valved and can have single or double internal lumens (separate along the full length of the catheter). A valved Groshong Midline has a special two-way valve at the distal tip of the catheter to prevent bleed-back into the line. Therefore there is NO clamp on a Groshong PICC. The valve opens outwards when positive pressure is applied and will open inwards when negative pressure is applied allowing blood withdrawal from the catheter. • Power Glide - purple in colour. A Power Glide is not valved. Power Glides are power injectable with maximum injection rates (5ml/sec) allowing rapid infusion of fluids and allows injection of contrast medium and apheresis. • BD PowerMidline – purple in colour and labeled externally. Single and double lumen (DL) are available, of which 4Fr DL are currently stocked in critical care. These are pressure injectable with the maximum flow rate labeled on the line clamp (4Fr are rated up to 4ml/sec and up to 10 pressure injections). <p>Never use a Groshong Midline for administering contrast medium as this will cause this type of line to split</p> <p>NB Midlines visibly look like PICC Lines, but the device tip is only residing in the peripheral venous system. Care must be taken to check which device is being used. As the tip position is in a peripheral vein, only infusions suitable for peripheral administration should be given through it.</p>	
Insertion	Midlines
<p>Midlines are inserted by specially trained and competent nursing or medical staff only, into a large peripheral vein in the upper arm under ultrasound guidance and threaded along the peripheral vein.</p>	

Assessing Patency	Midlines
<p>NB Always use ANTT when accessing the midline</p> <p>Do not administer drugs or fluids unless the line is fully patent. By <i>fully patent</i> we mean that:</p> <ul style="list-style-type: none"> • The line can be flushed easily • There is flashback of blood <p>Do not administer chemotherapy via a Midline.</p> <p>If the Midline is not fully patent see 'Maintaining Patency'. Testing for patency:</p> <ul style="list-style-type: none"> • Test for flashback of blood before administering IV medication but note that you should not discard blood unnecessarily. • To assess for flashback you attach a syringe containing 10mls 0.9% saline* to the catheter, flush a 2-5mls into the line and then withdraw. As soon as you see a trace of blood in the catheter or syringe just flush the rest of the saline* into the line. <p>BUT NB: if there are infusional vasoactive drugs in the lumen, withdraw prior to flushing to avoid bolus dose.</p>	
Flushing	Midlines
<p>NB Always use ANTT when accessing the VAD Before flushing</p> <p>If there are infusional vasoactive drugs in lumen, withdraw prior to flushing to avoid bolus dose.</p> <p>Technique:</p> <ul style="list-style-type: none"> • Brisk push-pause technique with positive pressure finish <p>What to flush with:</p> <ul style="list-style-type: none"> • 10 mls 0.9% saline* between incompatible drugs / infusions and after blood sampling • 20 mls 0.9% saline* after blood products • Lock with a further 10mls 0.9% saline* <p>Frequency of flushing:</p> <ul style="list-style-type: none"> • Flush unused lumens at least once a week (10mls 0.9% saline*). Increase to twice weekly if there are patency problems. *must be prescribed • BD PowerMidline: Flush each lumen with 10ml of sterile saline every 12 hours and after each use <p>Needle free connectors:</p> <p>Must be changed aseptically weekly using ANTT or more often if:</p> <ul style="list-style-type: none"> ▪ Connector is faulty ▪ Connector has been removed for any reason ▪ Connector is leaking ▪ Blood is seen in the connector 	

Exit Site Care

Midlines

NB Always use ANTT for exit site care**Securement:**

- **Statlock:** Always fix catheter firmly to patient's skin using steri-strips, *Statlock* and a transparent dressing.

Cleaning:

- Clean exit site dressing changes with *Chloraprep* using a 30-second back and forth friction rub. Allow to dry.
- NB If there is loose blood or exudate present this should be removed first using sterile gauze and 0.9% sterile saline.

Dressings:

- **Post-insertion:** gauze, steristrips and *Securacath* dressing under a transparent dressing for 1 day (may be longer for outpatients).
- **After 1 day:** Use a clear transparent dressing (*Tegaderm, IV3000 or Leukomed*) on top of securing device.
- Change every 7 days (or sooner if dressing becomes wet, soiled or detached).
- If patient cannot tolerate a transparent dressing at all, use *Duoderm* dressings (see Appendix 9). Change every 7 days or more frequently if at high risk of exit site infection. (Change sooner if dressing becomes wet, soiled or detached). If this is not tolerated, consult with the VAD team as a gauze-type dressing – e.g. *Mepore* may be required.

Bathing, showering & swimming:

- **Bathing & Showering:** Patient should not get the dressing wet. If possible provide a waterproof covering for bathing and showering (eg *Limbo*).
- **Swimming:** is not advised.

Midlines should be removed as soon as possible if they are not needed.

Who can remove Midlines? Any qualified nurse who follows these guidelines.

Procedure:

- Always use ANTT when removing a Midline
- Patient should be sitting/lying with the Midline exit site below the level of the heart (this will help prevent air embolism)
- Remove the dressing and *Statlock* (take swabs if signs of infection)
- Pull Midline out slowly and gently an inch or two at a time. As each inch goes by, change the position of your hand so that your fingers are close to the exit site. This will reduce the likelihood of the catheter breaking.
- If you meet resistance, STOP. Resistance may be due to venospasm. If this happens, apply warm packs to the patient's arm for about 5 minutes before resuming. If there is still resistance, call the central venous access team for advice.
- Once Midline is out, apply pressure to exit site with sterile gauze for 3 minutes.

- If systemic infection is suspected, use sterile scissors to cut off the tip of the catheter and without contaminating it drop it into a dry sterile specimen pot. Send it to microbiology for culture.

Keep wound dry for 1 to 2 days or until healed

VIP score

Catheter exit site	Score	Action
Healthy appearance; <ul style="list-style-type: none"> no pain no inflammation 	0	Continue observations
Either: <ul style="list-style-type: none"> slight redness pain 	1	Possible signs of phlebitis <ul style="list-style-type: none"> continue close observations
Two of either <ul style="list-style-type: none"> pain erythema Swelling +/- discharge 	2	Early stages of phlebitis: Seek advice <ul style="list-style-type: none"> swab exit site assess dressing type consider treatment (e.g. analgesia; antibiotics; heparin)
All of below evident: <ul style="list-style-type: none"> pain inflammation swelling induration +/-discharge 	3	Moderate level of phlebitis: Seek advice <ul style="list-style-type: none"> swab exit site consider Doppler consider treatment (e.g. analgesia; antibiotics; heparin)
All of below evident & extensive <ul style="list-style-type: none"> pain inflammation swelling induration +/- discharge 	4	Advanced stages of phlebitis: Seek advice <ul style="list-style-type: none"> swab exit site blood cultures Doppler initiate treatment (e.g. analgesia; antibiotics; heparin) * consider removal of catheter (send tip)
All of below evident & extensive <ul style="list-style-type: none"> - pain - swelling - pyrexia - inflammation - induration +/-discharge 	5	Advanced stages of thrombophlebitis: Seek advice <ul style="list-style-type: none"> - swab exit site - blood cultures - Doppler - Treatment (e.g. analgesia; antibiotics; heparin) * consider removal of catheter (send tip)

References:

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