BioFlo Midlines with Endexo Technology

Why Choose a Midline Catheter?

The midline catheter can deliver the same medications as a peripheral intravenous catheter (PIV) including a variety of antibiotics. However, PIVs typically need to be replaced every couple days, usually due to performance failure, while midline catheters can provide access for several weeks (<30 days). Midline catheters are also ideal for patients that may require more than five days of intravenous therapy. A midline catheter’s extended period of functionality provides many benefits, such as:

- Staff efficiency by eliminating the need for frequent PIV replacement
- Material savings from reduced use of supplies
- Improved patient satisfaction from fewer needle sticks (PIV restarts) and interruptions to treatment
- A potential option for patients with compromised vasculature
- Reliable venous access when a central venous catheter is no longer indicated for treatment

The length of a typical midline catheter ranges between 3 in. (7.5 cm) to 8 in. (20 cm), longer than a peripheral catheter but shorter than the peripherally-inserted central catheter (PICC). Since midlines terminate at or below the axillary vein, versus the central venous circulation, confirmatory chest radiographs are not required allowing for immediate initiation of therapy as well as cost savings.¹

Midline catheters also deliver intravenous medications or hydrating fluids into a larger vessel diameter than PIVs. This increased vessel diameter (6-8mm) facilitates a greater flow rate of blood at the catheter tip, ensuring adequate dilution of medications (Hadaway, 2000; Rosenthal, 2008). This dilution reduces the incidence of chemical phlebitis, infiltration and patient discomfort during drug administration (Anderson, 2004, 2005; Gorski & Czaplewskei, 2004; Lawson, 1998; Myers and Kyle, 1993). Midlines can tolerate isotonic medications and solutions (250-350mEq/L) (Rosenthal, 2008), drugs and solutions with a pH level between 5 and 9, with a low osmolarity (<600mOsm) (Anderson, 2005, Klein & Metules, 2001; Rosenthal, 2008; INS, 2006) or blood products (Kupensky, 1998).

Are all Midlines alike?

With many options available on the market today, it can be difficult to determine which vascular access device is best for your practice and patient. When assessing for device selection keep in mind the following:

**Catheter material**—Novel catheter material v. standard silicone or polyurethane catheter

**Insertion Method**—Modified Seldinger technique (MST) v. Accelerated Seldinger technique (AST)

**Power Injection Capabilities**—Not all midlines are power injectable or clearly labeled

**Disruptive Technology**

The BioFlo Midline Catheter is the only midline catheter with Endexo Technology, providing a catheter material more resistant to platelet aggregation. This novel, disruptive technology is present throughout the catheter shaft including the intraluminal, extraluminal and cut surface of the catheter, and is present for the life of the catheter.

The BioFlo Midline Catheter is an effective solution to preserving a patient’s peripheral access. It provides a cost-effective alternative to multiple IV site rotations for patients who need short-term venous access. This improves the likelihood that the patient will receive his or her ordered therapy, which may lead to a shorter hospital stay, and improved patient satisfaction.

**Right patient. Right Time. Right Line.**

With the rapid changes in health care today, meeting the vascular access needs of patients is a vital component to providing high quality care. Identifying the right device is crucial, and as a result midline catheters have emerged as a viable option for today’s unique vascular access care. AngioDynamics offers various training programs to support your understanding of early assessment and appropriate vascular access device selection.
# Recommendations for Placing Midline Catheters in the Adult Acute Care Setting

## Recommendations for Insertion
- Use strict aseptic technique and maximal barrier precautions
- Insert under ultrasound guidance above the ante cubital crease
- Basilic vein preferable
- Catheter distal tip should be at or below the axillary vein

## Recommendations with Therapy
- Ideal for IV therapy lasting <30 days
- Use with near isotonic solutions (250-350 mEq/L)
- Medication pH should be no less than 5 nor exceed 9
- Good consideration for patients that are difficult IV access (DIVA)
- Fluids with osmolality <600mOsm/L

## Special Considerations for Midline Use
- Patients at risk of thrombosis
- Patients with compromised circulation
- Patients at risk of lymph edema
- Patients with end stage renal disease requiring vein preservation

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## Important Risk Information

**BioFlo Midline Catheter with Endexo Technology**

**Intended Use/Indications for Use:** The BioFlo Midline catheter with Endexo Technology is indicated for short-term access (<30 days) to the peripheral venous system for intravenous therapy, including but not limited to, the administration of fluids, medications and the sampling of blood and blood products.

Refer to Directions for Use provided with the product for complete instructions, warnings, precautions and potential complications.

CAUTION: Federal Law (USA) restricts this device to sale by or on the order of a physician.