HUNTLEIGH

DOPPLEX ®
ADVANCED POCKET DOPPLERS
CLINICAL APPLICATION NOTES

NOTE 5 Using A Hand Held Doppler To Assist With PICC Placement

HOW TO USE THIS APPLICATION NOTE

- ***DOPPLEX®*** *EQUIPMENT REQUIRED* Select the most appropriate ***Dopplex®*** Pocket unit to perform the examination. For suggestion of suitable ***Dopplex®*** equipment, refer to Figure 1.
- *PROCEDURE* Peripherally Inserted Central Catheters (PICCs) are placed via cannulation of one of the patient's antecubital fossa veins. Follow the procedure in Figure 3.
- *LOCATING VEINS* Figure 4 suggests the ideal probe position for locating veins.

FIGURE 1 EQUIPMENT REQUIRED

- Bi-directional Doppler, *Super* ***Dopplex® II,*** *Multi* ***Dopplex® II*** or *Maxi* ***Dopplex®*** with VP8 probe.
- Coupling gel
- Tourniquet
- Surgical marker

FIGURE 2 IDENTIFYING VEINS

Veins generate low velocity Doppler signals which can be described as sounding like 'wind'; arteries generate pulsatile multi-phasic signals.

FIGURE 3 PROCEDURE

- Adequate skin preparation should always be performed prior to venipuncture. The person placing the PICC should always wear appropriate clothing to provide personal protection, to create and maintain a sterile environment, e.g. sterile gloves, gowns, etc.
- The area surrounding the site should be draped to ensure that a sterile environment is created and maintained.
- NOTE - Always clean the probe tip with an alcohol impregnated wipe or a damp cloth impregnated with a mild detergent before and after use. Remove excess gel before storing the probe.

FIGURE 4 TESTING POSITION

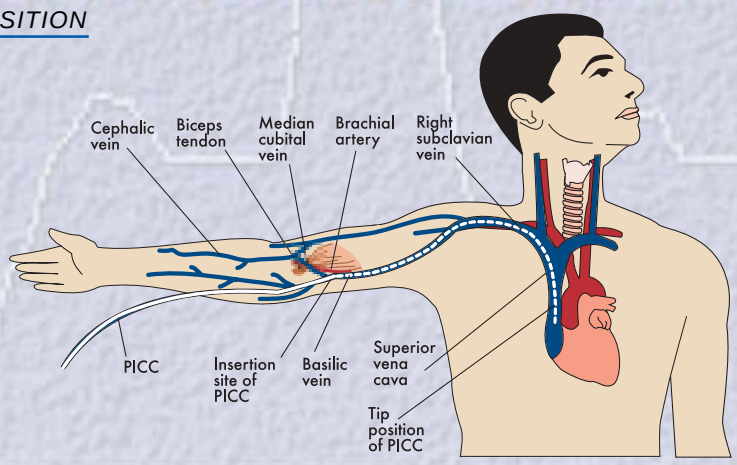


FIGURE 5 EXAMINATION

- Lightly apply the tourniquet above the antecubital fossa. (Optional)
- Apply gel to area under investigation

- Hold the probe at an angle of between 45° and 60° to the vessel under examination
- Slowly sweep the probe across the area to locate the vein

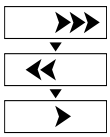
- Use the clinical marker to mark either side of the vein

- Place the PICC in accordance with the PICC manufacturer's instructions or local guidelines

FIGURE 6 NOTES

It is important to be able to differentiate between the sounds generated by the Arteries and Veins. Arteries generate high frequency multi-phasic sounds, whereas veins usually generate low velocity monophasic signals. If using a Bi-directional Doppler, vessel type can be confirmed by the information displayed on the bar graph. See examples below.

Normal ***Dopplex***® Display of an Artery



Normal ***Dopplex***® Display of a Vein

The bar graph display should always be coincident with the sounds.

References: Gabriel J, PICCs: How Doppler ultrasound can extend their use. Nursing Times, volume 95 No. 6:1999
Our thanks go to Mrs Janice Gabriel Senior Onocology Nurse specialist / Manager for helping with the compilation of this application note.

EDUCATIONAL MATERIAL AVAILABLE FROM HUNTLEIGH HEALTHCARE

- Library of Sounds Audio Cassette
- Assessment & Treatment of Leg Ulcers Video
- Vascular Investigations Video
- Assessment of the Diabetic Foot Video
- ABPI & TBPI guides.

APPLICATION NOTES AVAILABLE FROM HUNTLEIGH HEALTHCARE

- ***NOTE 1*** • Arterial Investigation Of The Lower Limb
- ***NOTE 2*** • Venous Investigation Of The Lower Limb Using Doppler
- ***NOTE 3*** • Venous Investigation Of The Lower Limb Using PPG
- ***NOTE 4*** • Screening For The Absence Of An Acute DVT Using PPG
- ***NOTE 5*** • Using A Hand Held Doppler To Assist With PICC Placement

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