

Vascular Access Requirements for the Injection of IV Contrast Agents

TITLE: Vascular access requirements for the injection of IV contrast agents

OUTCOME STATEMENT:

Safe intravenous access for the injection of intravenous contrast is a prerequisite in obtaining high quality contrast enhanced or angiographic studies. Proper access and technique is vital to ensure patient safety and the avoidance of potentially serious complications of contrast media extravasation and or air embolism. Bolus intravenous contrast injection using the antecubital (AC) fossa or forearm is the preferred method for power-injecting contrast medium, however other vascular access options have been approved (specifications below).

SCOPE:

FILE MAINTENANCE INFORMATION:

Original Effective Date:

Revision Dates:

Review Dates:

Author(s): Team, and Primary Responsible Party

Body or Person Last Approved: Team (s), and Primary Responsible Party(ies)

DEFINITIONS: Please refer to the Central Venous Access Device Policy for a detailed explanation of the devices.

Power injection - a programmed contrast delivery system used to deliver a specified dose of contrast medium at a specific flow rate.

Contrast – A substance used to improve the visibility of internal structure during imaging.

Peripheral intravenous catheter - Catheter used to gain vascular access of a peripheral vein.

Midline catheter - Peripheral catheter used to gain vascular access of a peripheral vein usually inserted into the antecubital fossa or upper arm where vascular access is required from 1- 4 weeks.

Central venous catheter - Catheter used to gain vascular access of a central vein terminating in the SVC.

PICC catheter - Peripherally inserted catheter used to gain vascular access of a central vein with termination in the SVC.

Implanted port – A surgically inserted central catheter attached to a reservoir (portal) that is implanted into a surgically created pocket on the chest wall or upper arm.

PROCESS:

To ensure quality diagnostic and CT imaging, vascular access devices must be able to accommodate a power injection rate of 4-5 mL/sec and up to 6 mL/sec in patients with a larger body habitus. The preferred route for intravenous contrast administration is a peripherally inserted catheter, however vascular access options are suitable for the injection of intravenous. The following guidelines are to be followed to ensure safe intravenous access for the injection of IV contrast and assure high quality contrast enhanced or angiographic studies and apply to these procedures:

- Abdominal CT
- PE CT
- CT Angiography
- MRI

Access and Device Specifications

	Specifications	Special Instructions
Peripheral access	<p>≥ 18 Gauge Catheter</p> <p>Preference: R or L AC</p> <p>Alternative location: Forearm is the alternative choice to AC if unable to access the AC</p>	<p>✓ If unable to obtain AC or forearm access, notify the CT technician to determine if another site and or size catheter may be an option.</p>

		✓ Verify the catheter flushes easily.
Mid Line	4/5 French Must be power rated	✓ Always check hub to verify infusion rate and or max PSI
Central line	Must be power rated and capable of accommodating $\geq 6\text{mL}/\text{sec}$	<ul style="list-style-type: none"> ✓ Always check hub to verify infusion rate and or max PSI ✓ Flush in accordance with the Central Venous Access Device policy at the completion of the procedure
PICC lines	Power-PICC Power-PICC Solo	<ul style="list-style-type: none"> ✓ Always check hub to verify infusion rate and or max PSI ✓ Flush in accordance with the Central Venous Access Device policy at the completion of the procedure
Implanted Port	Implanted ports inserted at SSM Health St. Mary's Hospital are power ports and can withstand injection of contrast media.	✓ Flush in accordance with the Central Venous Access Device policy at the completion of the procedure
EJ/IJ Access	May not be used for injection of IV contrast	
IO Access		

DOCUMENTATION:

Document the manual flushing procedure as outlined in the Central Venous Access Device policy.

REFERENCES:

Professional Nursing Practice Council (2016). Central Venous Access Device Policy