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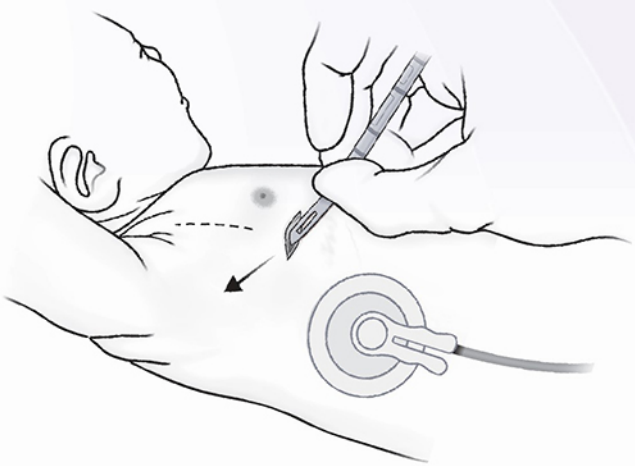
National Neonatology Forum

Neonatal Medications and Procedures

(NEOMAP)



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10 CHAPTER

Peripheral Intravenous Vein Catheterization

OBJECTIVE

The participants should practice the insertion of IV line for sample collection, intravenous fluid administration, medications, and blood transfusion.

SUPPLIES

- Two pairs of sterile gloves **(Fig. 1)**
- Sterile intravenous catheter of 24–26G **(Fig. 2)**
- Sterile infusion set with intravenous fluid **(Fig. 3)**.



Fig. 1: Pair of sterile gloves.



Fig. 2: Sterile intravenous catheter.

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Fig. 3: Infusion set with intravenous fluid.



Fig. 4: Swabs or cotton balls soaked in antiseptic solution



Fig. 5: Adhesive tape.

- Sterile 1, 2, 5, and 10-mL syringe (at least two each)
- Swabs or cotton wool balls soaked in antiseptic solution **(Fig. 4)**.
- Adhesive tape **(Fig. 5)**
- Syringe with normal saline.

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Fig. 6: Collect all the supplies needed, in a sterile tray.



Fig. 6: Collect all the supplies needed, in a sterile tray.

STEPS

- Identify an accessible vein, most commonly on the dorsum of hand, foot, or antecubital area.
- Collect all the items needed for peripheral vein catheterization **(Fig. 6)**.
- Perform hand hygiene and wear gloves **(Fig. 7)**.
- Create a sterile area at the bedside/tray.

WEAR STERILE/CLEAN GLOVES

- Assistant helps in peeling off outer a sterile covers of the disposables.
- Prepare the identified area with single swab applying for 30 seconds or three swabs technique using spirit swab.
- Allow it to dry.
- Insert peripheral intravenous vein catheterization (PIVC) by picking tip of PIVC at an angle to skin surface **(Figs. 8 and 9)**.
- After the PIVC is inserted completely, withdraw the needle **(Fig. 10)**.

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Fig. 8: Insert the iv cannula holding it an angle towards the skin.



Fig. 9: Insert the iv cannula at an angle.



Fig. 10: Withdraw the needle after inserting cannula.

- Flush the PIVC with 0.5–1 mL of normal saline **(Fig. 11)**.
- Fix the PIVC with semi-transparent adhesive.
- Fix the rear end of PIVC with usual dressing such as Durapore or micropore.

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Fig. 11: Fix the PIVC using a semi transparent tape.

- Can use splint only when its cannula is placed at a mobile joint area.
- Put the date of insertion of PIVC on the adhesive.
- Discard the waste in biomedical waste bin as per protocol.
- Wash hands and document the procedure.

DO'S

- Make sure that the key part of the disposable (tip of IV cannula) does not come in contact with non-sterile area.
- Follow nonpharmacological measures for pain relief.
- Keep the overlying skin clean and dry.
- Monitor in each shift and before any administration, for redness or tenderness of surrounding skin.

DON'TS

- Do not touch the prepared area and if touched, perform the cleaning steps again.

FURTHER READING

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TABLE 1: Objective structured clinical examination (OSCE) for peripheral intravenous vein catheterization (PIVC).

S. No.	*Steps*	*Points (1 each)*
1.	Identifies an accessible vein	
2.	Collects all the items needed for peripheral vein catheterization	
3.	Performs hand hygiene	
4.	Creates a sterile area at the bedside/tray	
5.	Wears sterile/clean gloves	
6.	Makes sure none of the parts of disposables (key parts) come in contact with non-sterile area	
7.	Prepares the identified area with single swab applying for 30 seconds or three swabs technique using spirit swabs	
8.	Allows it to dry	
9.	Inserts PIVC by picking tip of PIVC at approximately 30–45° angle to skin surface	
10.	After the PIVC is inserted completely, withdraw the needle	
11.	Flushes the PIVC with 0.5–1 mL of normal saline	
12.	Fixes the PIVC with semi-transparent adhesive	
13.	Fixes the rear end of PIVC with usual dressing such as Durapore or micropore	
14.	Puts the date of insertion of PIVC on the adhesive	
15.	Discards the waste in biomedical waste bin as per protocol	
16.	Washes hands and documents the procedure	
	Total (16)	

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