



Practice anaesthetic equipments lecture

I.V CANULAE AND GIVING SETS

BY

HASAN DWAIN AL-HILLFI

NADA SHAKER AL-SULTANI

B.M.T OF Anaesthesia and I.C.U

قسم التخدير.....المرحلة الثانية

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Peripheral intra-venous cannula

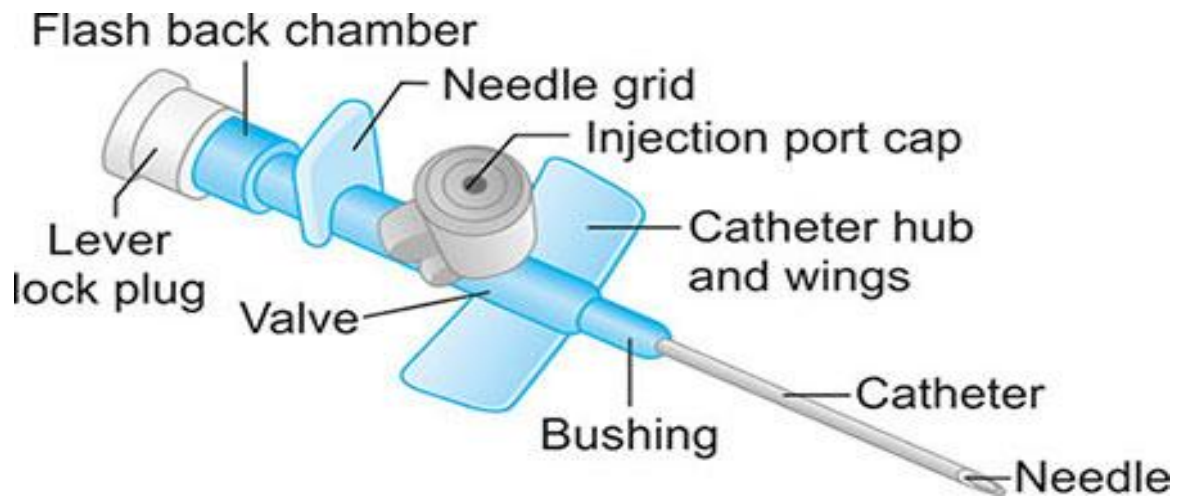
Is a common bed side procedure that make to provide I.V access by insertion a catheter inside the vein.

INDICATIONS:


- 1-I.V fluid therapy**
- 2- I.V drugs administration**
- 3- transfusion of blood products**
- 4- collection of blood sampling**
- 5- I.V administration of contrast agents for radiological interventions**

Cannula consist of:

- 1-needle with bevel end**
- 2- catheter**
- 3-catheter hub + wings**
- 4-one-way valve**
- 5-injection port with its cap**
- 6-needle grip**
- 7-flash back chamber**
- 8- lever lock plug**



Sizes and colour code and flow rate of I.V cannula

Color-coding of IV cannulas			
Color		Gauge	Maximal Flow Rate(mL/min)
Yellow		24G	13
Blue		22G	31
Pink		20G	67
Green		18G	103
Gray		16G	236
Orange		14G	270



Insertion technique

1-Prepare the patient: Explain the procedure to the patient and take informed consent. Consider using local anesthesia.

2-Select site of venous cannulation: Commonly used positions for venous cannulation are the dorsal hand, forearm, or antecubital fossa.

3-Apply a tourniquet proximally and encourage fist clenching to engorge the veins. Look for a straight, wide, “spongy” vein, with no evidence of valves.

4-Clean the site of venous cannulation with alcohol antiseptic and allow it to dry before cannulation.

5-Stretch the skin overlying the vein with non-dominant hand and insert cannula with your dominant hand.

6-With the bevel facing up, slide the cannula through the skin and into the vein until flashback of blood is seen; this indicates that the needle tip has penetrated the vein.

7-Advance the cannula a few millimeters further to ensure the catheter as well as needle tip enters the vein; withdraw the needle and advance the cannula inside the vein

8- Apply digital pressure of left thumb over the catheter tip, remove the needle, and put the cover of cannula.

9-apply sterile and transparent dressing over the cannula with and write down date of cannulation over the dressing.

Problems and complications of cannulation

- 1-Difficulty in finding vein , common problem especially in patients after multiple cannulation during prolonged hospitalization.**
- 2-Hematoma at the site of cannulation.**
- 3-Pain and induration**
- 4-thrombophlebitis**
- 5-Extravasation of fluids or drugs**
- 6-Swelling around the site of venous cannulation due to extravasation of fluids or drugs.**
- 7-Arterial puncture (rare)**
- 8-Infection**
- 9-Highly mobile vein: Seen in elderly population due to degradation of subcutaneous connective tissue; skin has be fixed tightly in these patients, to immobilize the vein, during cannulation.**

Note:

Intravenous cannula should be removed when no longer required, after 72–96 hours of insertion, or if there are any signs of phlebitis or infiltration or extravasation.

Giving sets

In modern day medical practice, intravenous¹ (IV) giving sets are regularly used to provide fluid therapy, to administer medicines, and blood products (e.g., blood & platelets). This practice is called infusion therapy. Most sets work by using gravity, often called gravity infusion.

Types of giving sets:

1-A Crystalloid giving set (basic IV giving sets)



2-A colloid giving sets (blood components)



This contains a 170-200 micron filter net to remove debris from blood components • Debris is derived from WBC's and

platelets which are no longer functional and also from cold insoluble protein and occasionally small clots.

3- burette giving sets (microdrips)



Deliver 60 drops per ml Allows closer monitoring of fluid and electrolytes.

THANK YOU

