



AL-Ayen University
College of Health and Medical Technology
Department of Anesthesia



Intravenous cannulation & Giving set

Lecture (2) theoretical
Basics of Anesthetic Equipment (1)
2nd Stage
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Intravenous cannulation:

is a technique in which a cannula is placed inside a vein to provide venous access.

Venous access allows sampling of blood as well as administration of fluids, medications, parenteral nutrition, chemotherapy, and blood products.

Cannula:

This device is available in various gauges (16-24 G), lengths (25-44 mm), compositions, and designs.

Tips:

Routinely, use the smallest gauge of catheter if possible to prevent damage to the vessel intima. In an emergency situation use a large gauge catheter to allow administration of large volumes of fluid .The superficial veins of the upper extremities are preferred to those of the lower extremities for peripheral venous access as they interfere less with patient mobility and pose a lower risk for phlebitis.

Flashback Chamber

Needle Grip

Injection Port Cap

Catheter Hub + Wings

Luer Lock Plug

Luer Connector

Catheter

Valve

Bushing

Needle



www.nurse1k.com

Cannula Sizes



14G

Orange



16G

Grey



18G

Green



20G

Pink



22G

Blue



24G

Yellow

Note

- **It is recommended to choose a straight portion of a vein to minimize the chance of hitting valves.**
- **Use the patient's non-dominant arm (if possible) For prolonged courses of therapy, it is recommended to start distally and move proximally as distal catheters are replaced.**

Indication:

- ✓ **Repeated blood sampling Intravenous fluid administration**
- ✓ **Intravenous medications administration**
- ✓ **Intravenous chemotherapy administration**
- ✓ **Intravenous nutritional support**
- ✓ **Intravenous blood or blood products administration**
- ✓ **Intravenous administration of radiological contrast agents for computed tomography, magnetic resonance imaging, or nuclear imaging**

Contraindications:

- **No absolute contraindications to intravenous cannulation.**

When **peripheral venous access is in an injured, infected, or burned extremity**, it should be avoided if possible.

- **Some irritant solutions can cause blistering and tissue necrosis if they leak into the tissue e.g. chemotherapeutic agents. These solutions are more safely infused into a central vein.**

Equipment:

1. Non-sterile gloves
2. Tourniquet
3. Antiseptic solution
4. 5-ml syringe Sterile
5. gauze
6. Cannula
7. Saline
8. Plaster



Before the procedure:

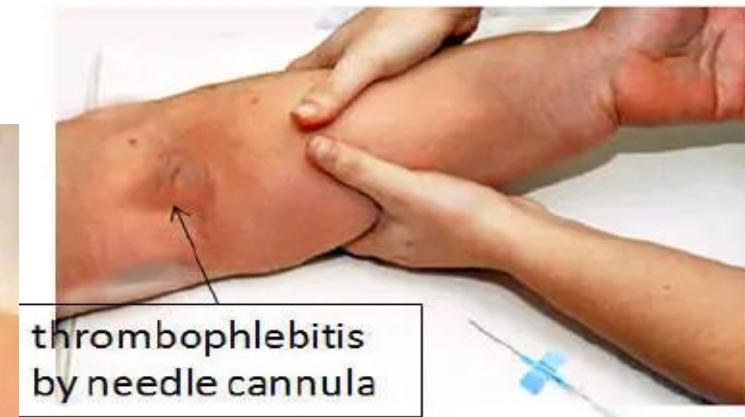
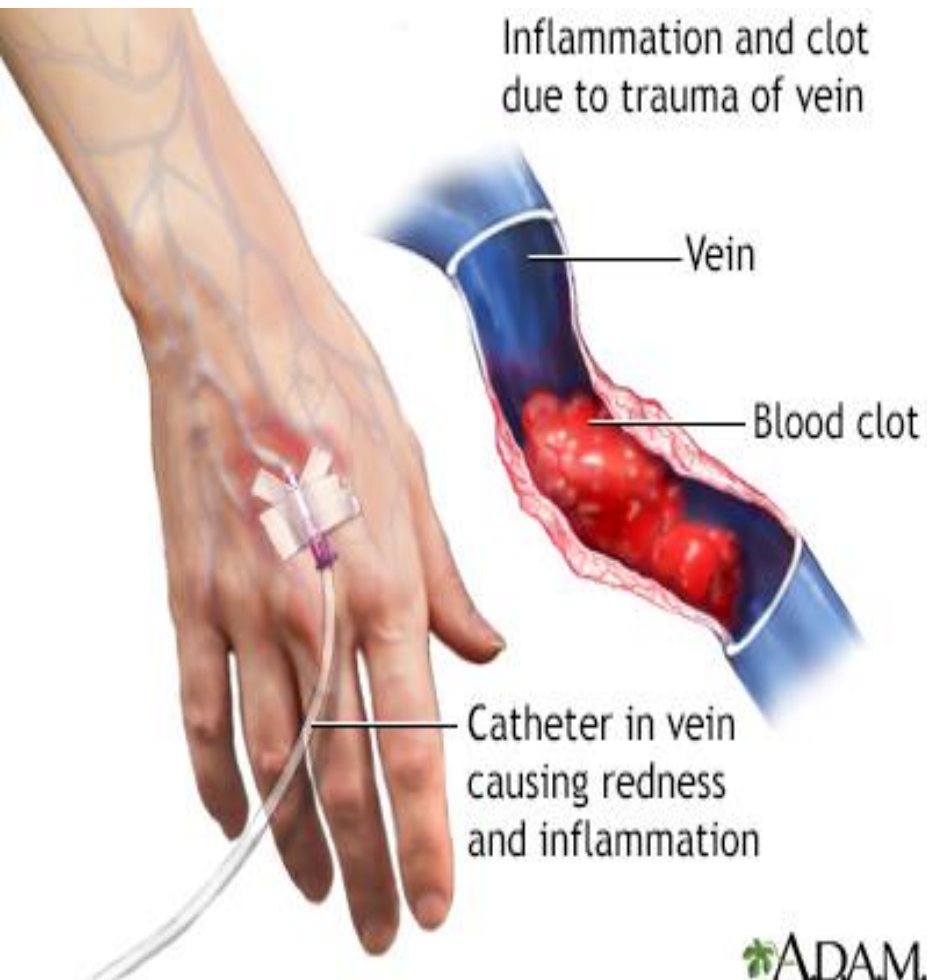
- 1. Introduce yourself to the patient. Explain the procedure to the patient and gain informed consent to continue.**
- 2. Make sure there is adequate light and that the room is warm enough to encourage vasodilation.**
- 3. Make sure the patient is in a comfortable position and place a pillow or a rolled towel under the patient's extended arm.**
- 4. The patient's skin should be washed with soap and water if visibly dirty.**
- 5. If difficulty is encountered in finding an appropriate vein, one of the following techniques may be used:**
 - ❖ Inspection of the opposite extremity**
 - Opening and closing the fist**
 - Using gravity (holding the arm down)**
 - Gentle tapping or stroking of the site**
 - Applying heat (warm towel/pack)**

Technique

- ✓ **Apply tourniquet and select the appropriate vein**
- ✓ Apply an antiseptic solution with friction for seconds, allow to air dry for up. Once cleaned, do not touch or repalpate the skin.
- ✓ Remove the cannula from its packaging and remove the needle cover ensuring not to touch the needle. Stretch the skin distally and tell the patient to expect a sharp scratch.
- ✓ **Insert the needle, bevel upwards at about 30 degrees.**
- ✓ Advance the needle until a flashback of blood is seen in the hub at the back of the cannula. Once this is seen, progress the entire cannula a further 2mm, then fix the needle, advancing the rest of the cannula into the vein.
- ✓ Release the tourniquet, apply pressure to the vein at the tip of the cannula and remove the needle fully. Remove the cap from the needle and put this on the end of the cannula. Carefully dispose of the needle into the sharps box.

Note

Check function by flushing with saline. If there is any resistance, if it causes any pain, or you notice any localized tissue swelling; immediately stop flushing, remove the cannula and start again. Apply the plaster to the cannula to fix it in place. Finally, ensure that the patient is comfortable and thank them.

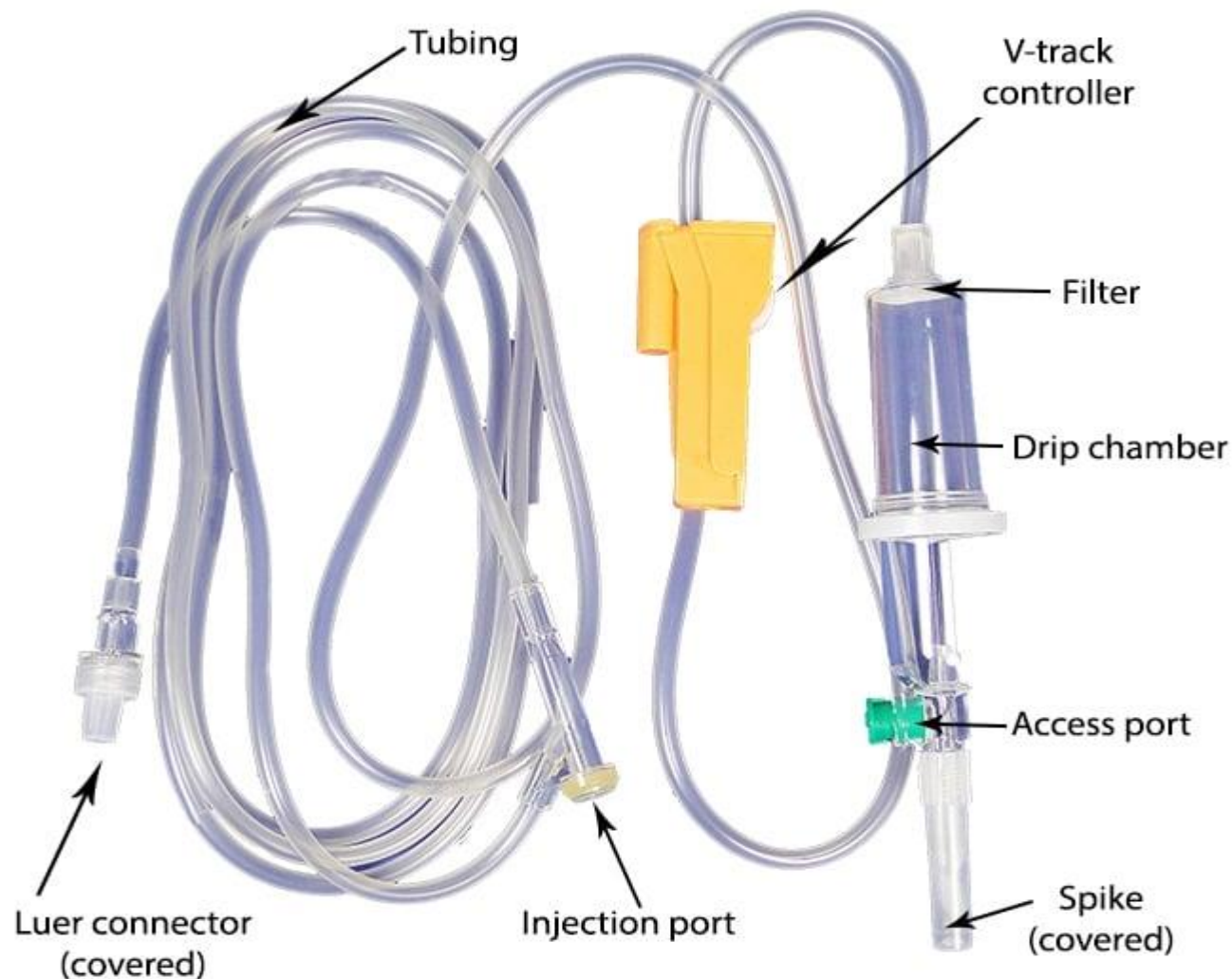


Complications

1. **Pain**
2. **Failure to access the vein**
3. Blood stops flowing into the flashback chamber
4. Arterial puncture
5. Thrombophlebitis
6. Peripheral nerve palsy
7. Skin and soft tissue necrosis

IV Infusion set (Giving set)

It is used to pass the I.V. Fluid directly into the veins. The system of administration employs a drip chamber which prevents air entering into the blood stream and allows estimate and smooth flow of I.V. Fluid.



Q1/What is the difference between these devices?



A close-up photograph of a pink rose, showing the delicate texture and layers of its petals. The rose is positioned on the left side of the frame, with its petals extending towards the center. The background is a soft, out-of-focus white, which makes the pink color of the rose stand out. The overall mood is gentle and appreciative.

***Thank you
for listening***