

**Clinical procedures lecture
for
third year medical students**

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Basic suturing lecture

simple interrupted technique

- **Outline:**

- Introduction
- Indications
- Considerations before suturing
- Classification of suturing
- Instruments
- Suturing technique
- Summary

Introduction

- in order to speed up the healing process of the wound, wound closer techniques have been used for many years to close the wounds.
- **Suture**: a series of stitches made by doctors and surgeons using special instruments to hold tissue together until healing has taken place.
- The **indications** of suturing :
 1. to hold the wound margins together to promote wound healing by first intention.
 2. to approximate the wound margin to minimize wound contamination.
 3. to arrest hemorrhage

Considerations before suturing

- Occurrence
 - how long ago did the patient get the wound?
- tetanus status
 - the last shot?!
- wound status
 - Bleeding, Contamination, any foreign body (glass, etc.....)

Classification of suturing

Synthetic

Natural / biological

Non - Absorbable

Eg: polyester, nylon

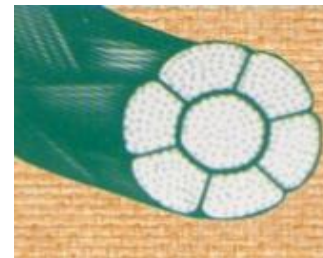
Absorbable

Eg: catgut, silk

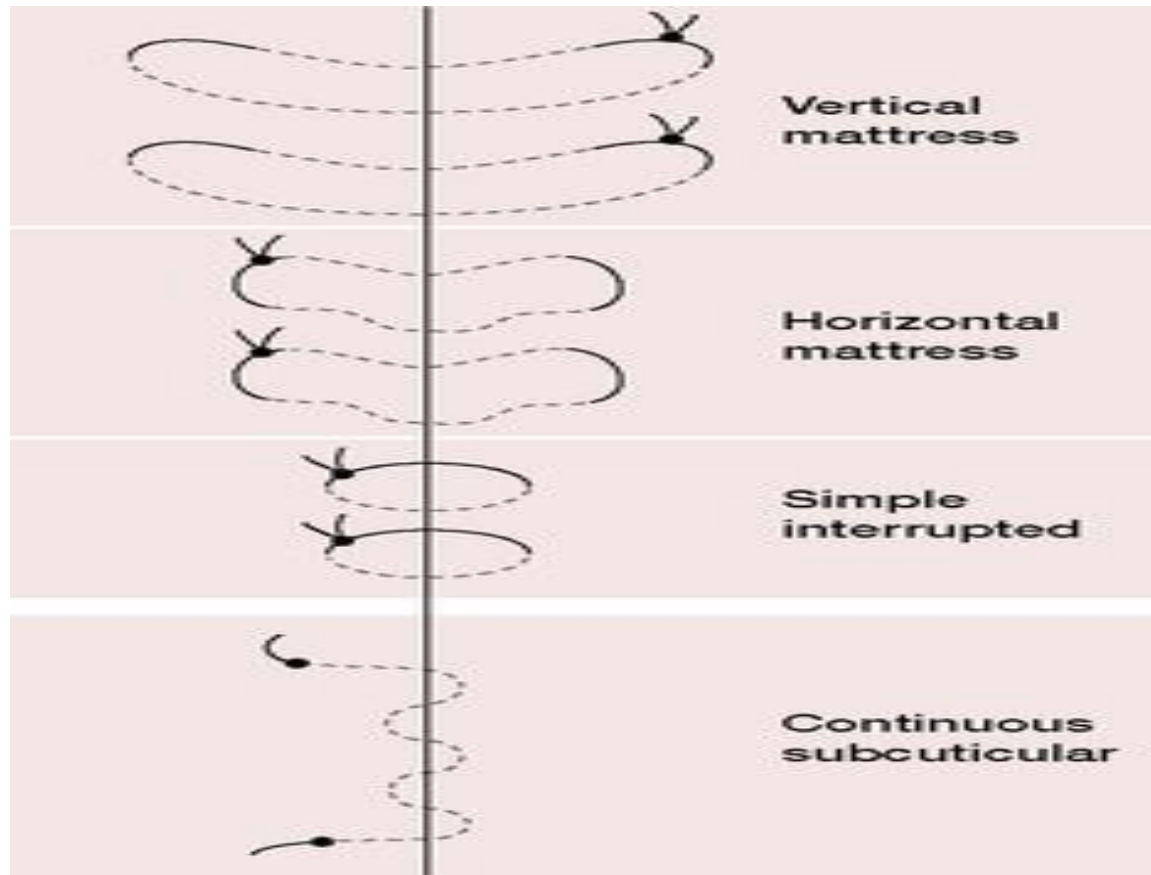
Monofilament



Multifilament



suturing technique



INSTRUMENTS

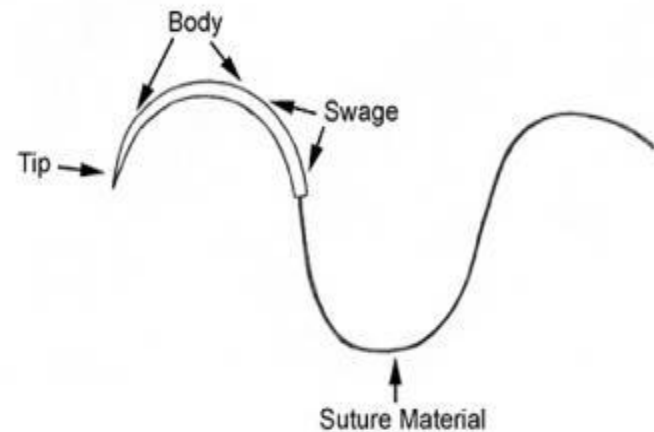
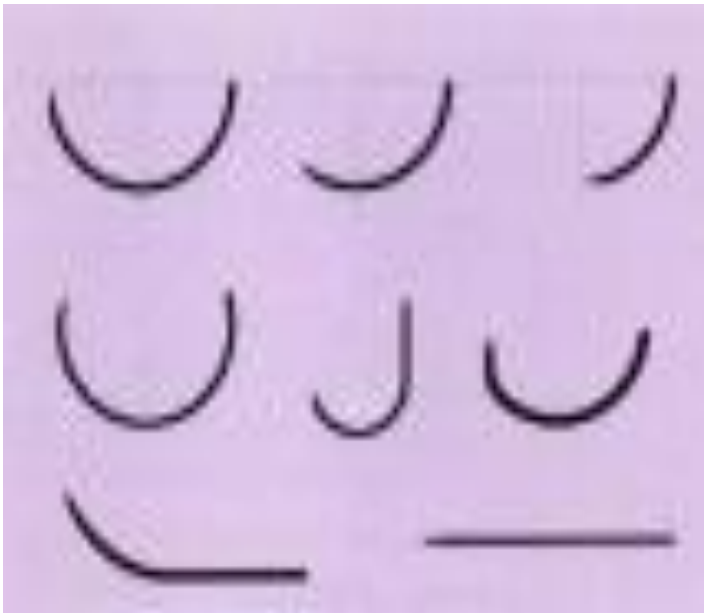


Instruments

Surgical Needles

Needles are of 2 shapes : straight and curved.

Curved needles are most common, general use in all tissue

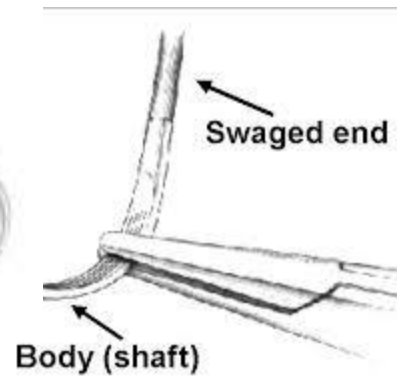


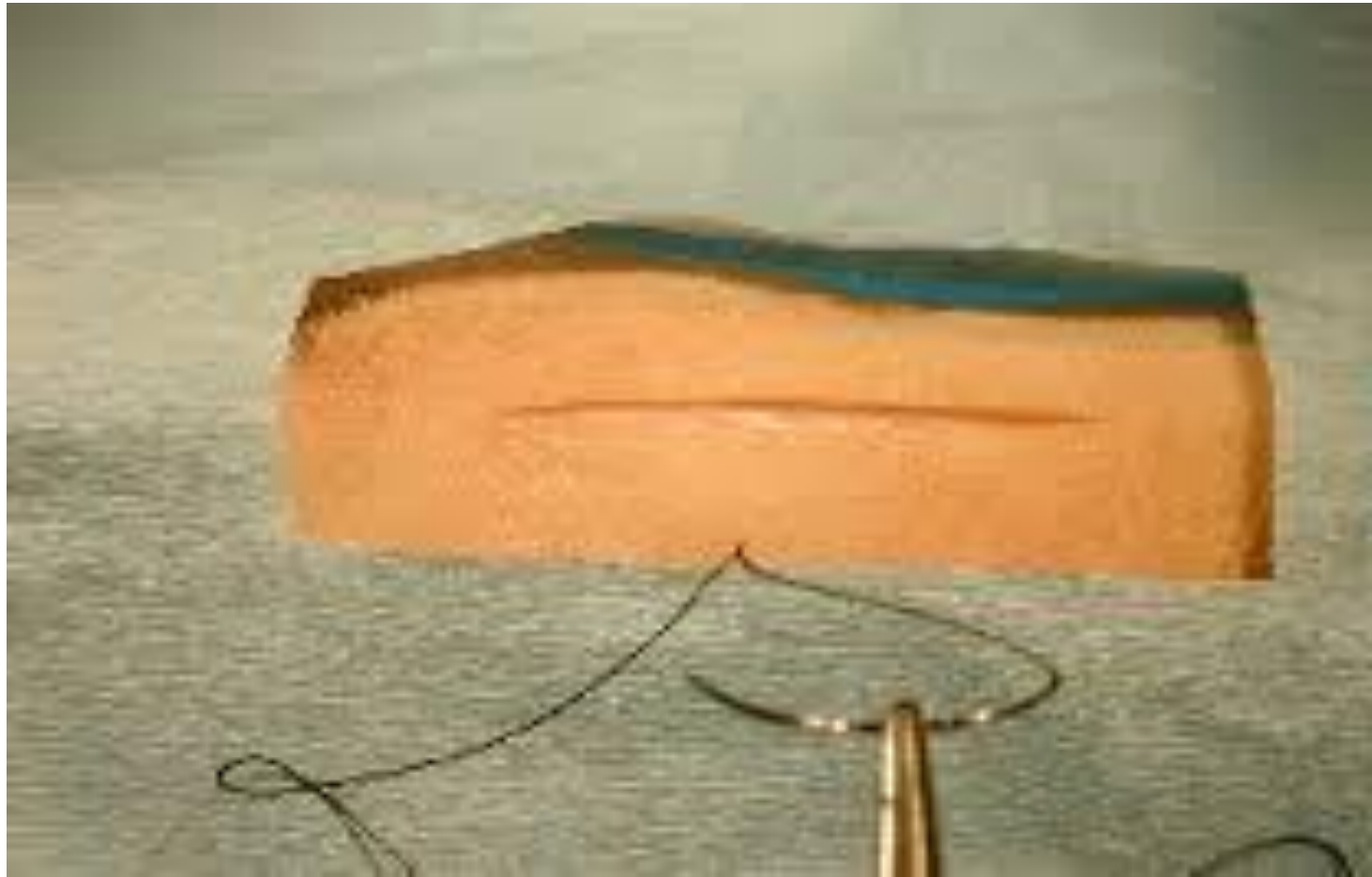
Packaging...



Instruments

Needle holder

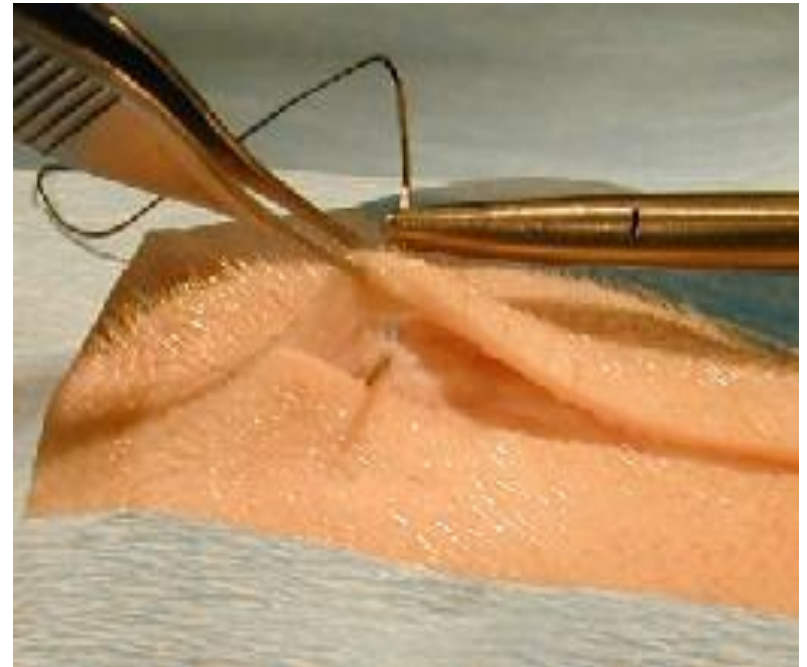




Instruments

forceps

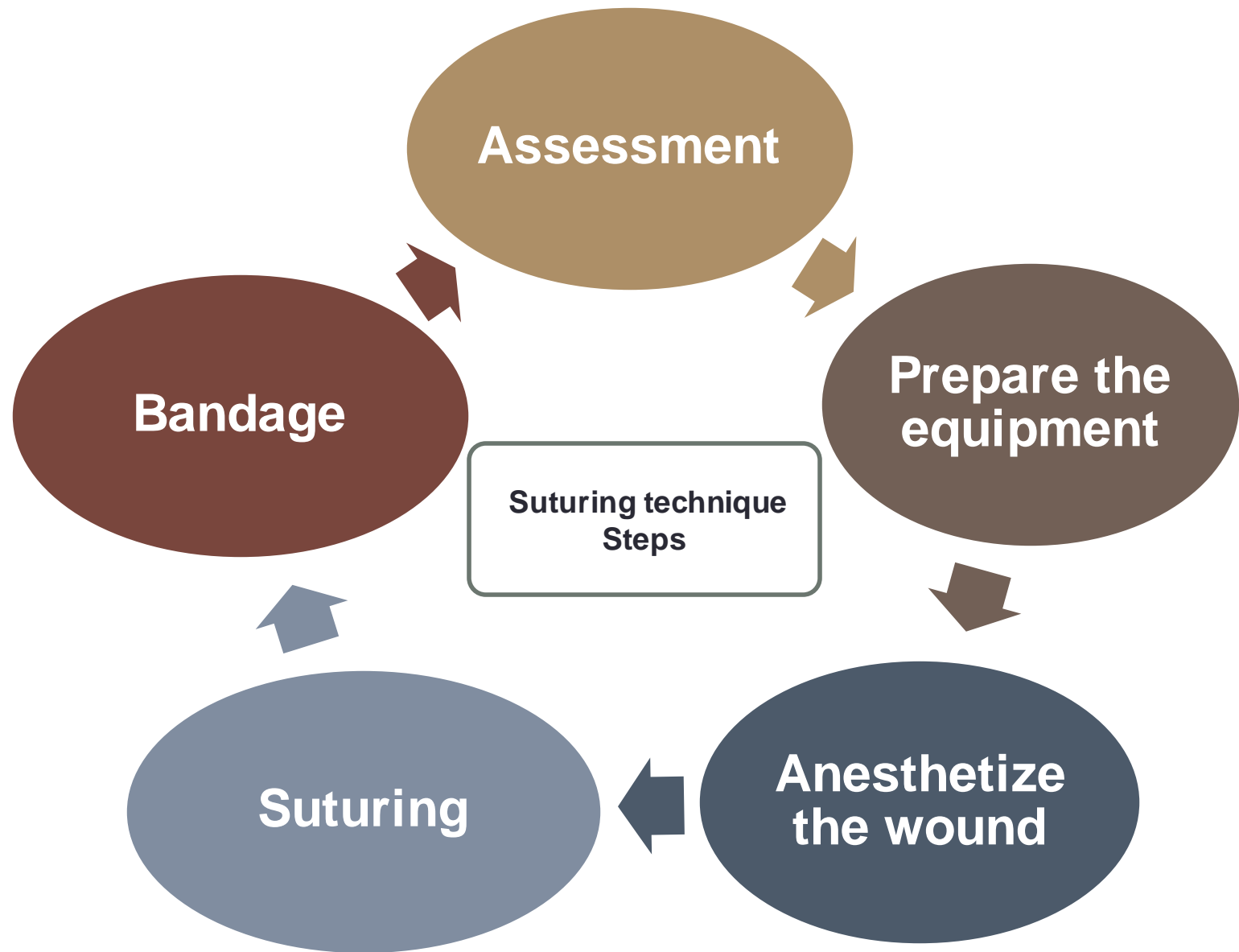
- allow you to control the position of the skin to make it easier to pass the needle through the skin.



Instruments

surgical scissor





Suturing technique

Step 1: Introduce yourself, explain procedure, gain on going consent and co-operation.

Step 2: roll up sleeves, remove watch, perform hand hygiene.

Step 3: Take a clear history of the incident(briefly).
check for tetanus prophylaxis.

Step 4: Check for allergies

step 5: Prepare the equipment (suturing kit, lidocaine, needles, syringes, sterile gloves, iodine...

Suturing technique

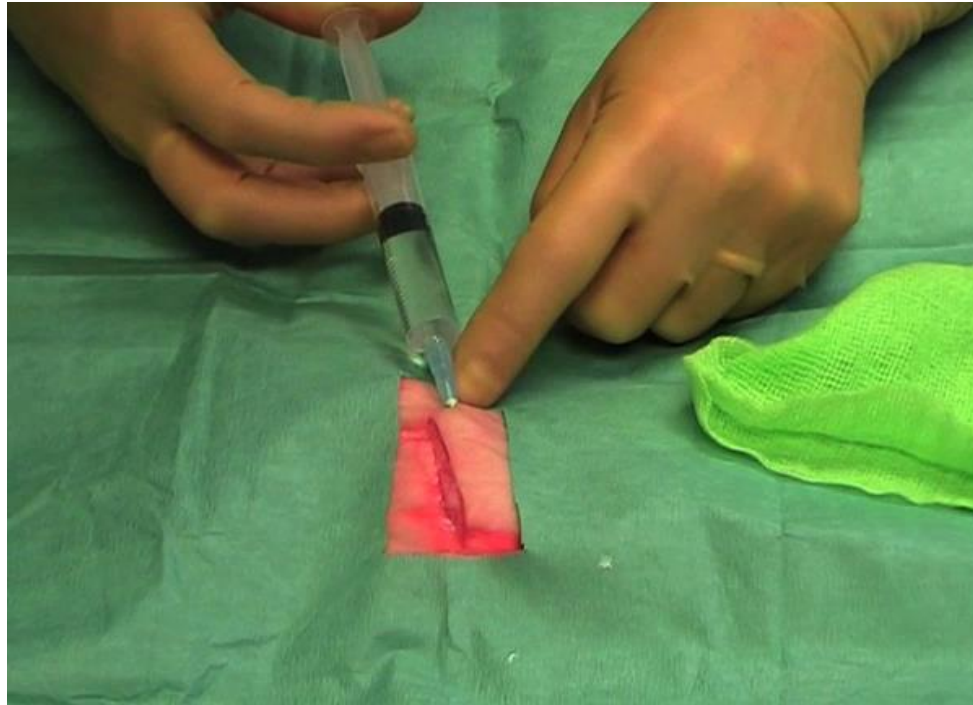
the procedure:

Step 6: Perform hand hygiene and apply sterile gloves correctly.

Step 7: Evaluate the wound: (site/depth/ length of wound, signs of infection, contamination, neurovascular state)

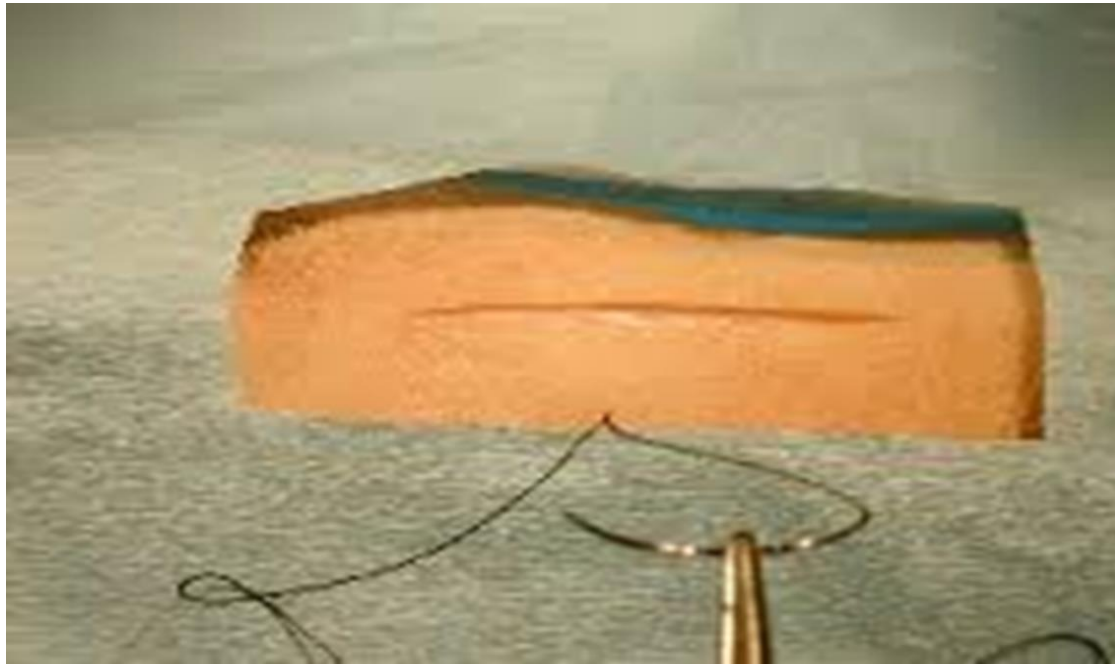
Suturing technique

Step 8: anaesthetize wound edges using lidocaine



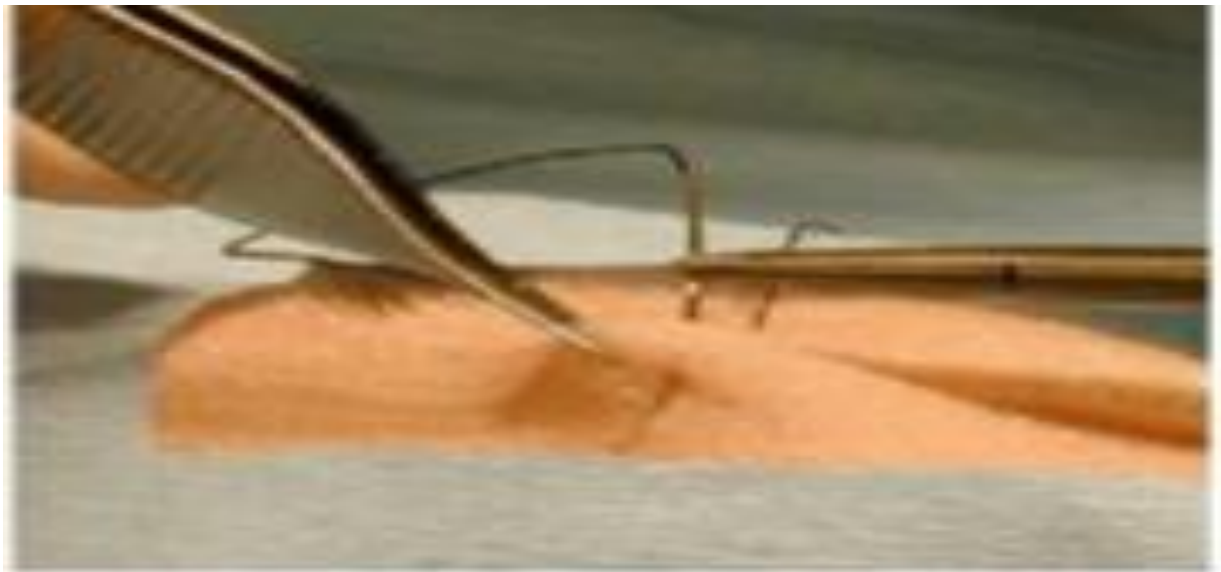
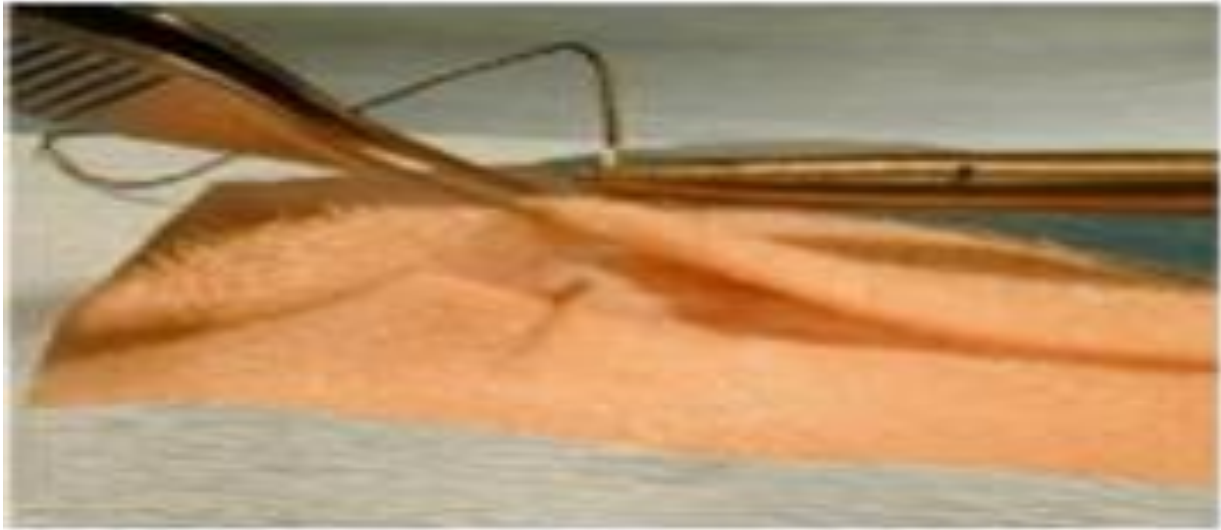
Suturing technique

Step 9: Place needle correctly into needle holder:
approximately 1/3 of the length of the needle from
the thread.



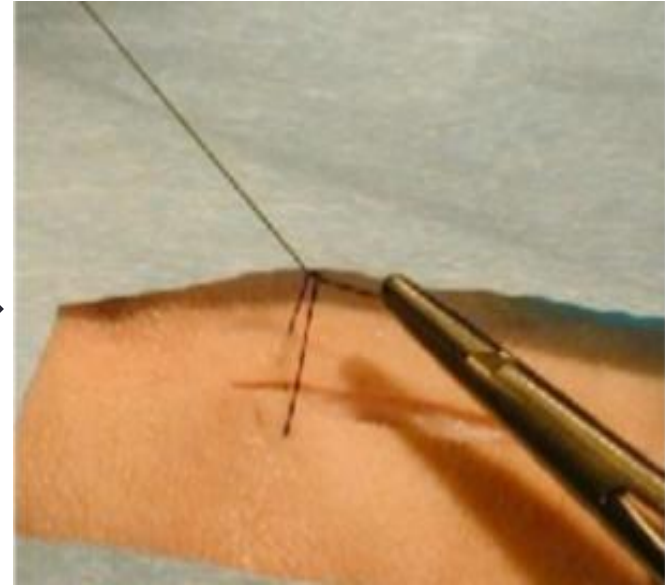
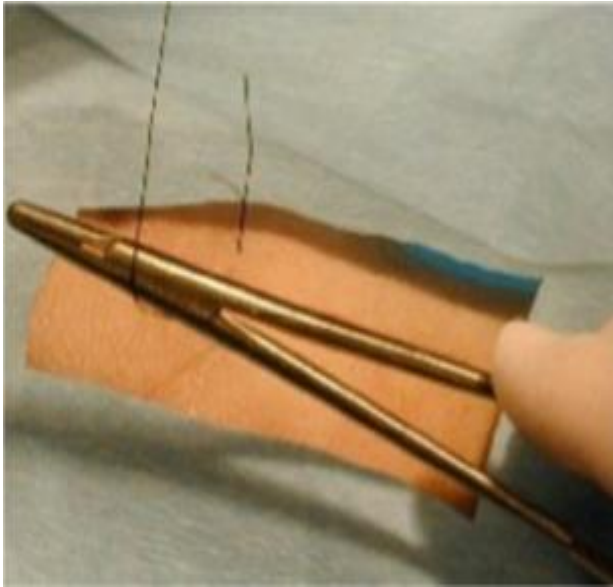
Suturing technique

Step 10: Support the wound edge using tooth forceps without pinching the skin as this can damage the skin, and pass the needle through each side of the wound and pull through an appropriate length of thread. As shown



Suturing technique

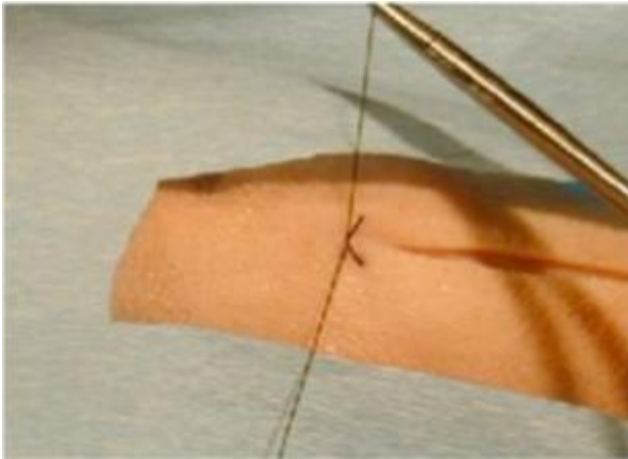
Step 11: Tie surgical knot effectively (2/1/1): Good tension, straight knot across both edges

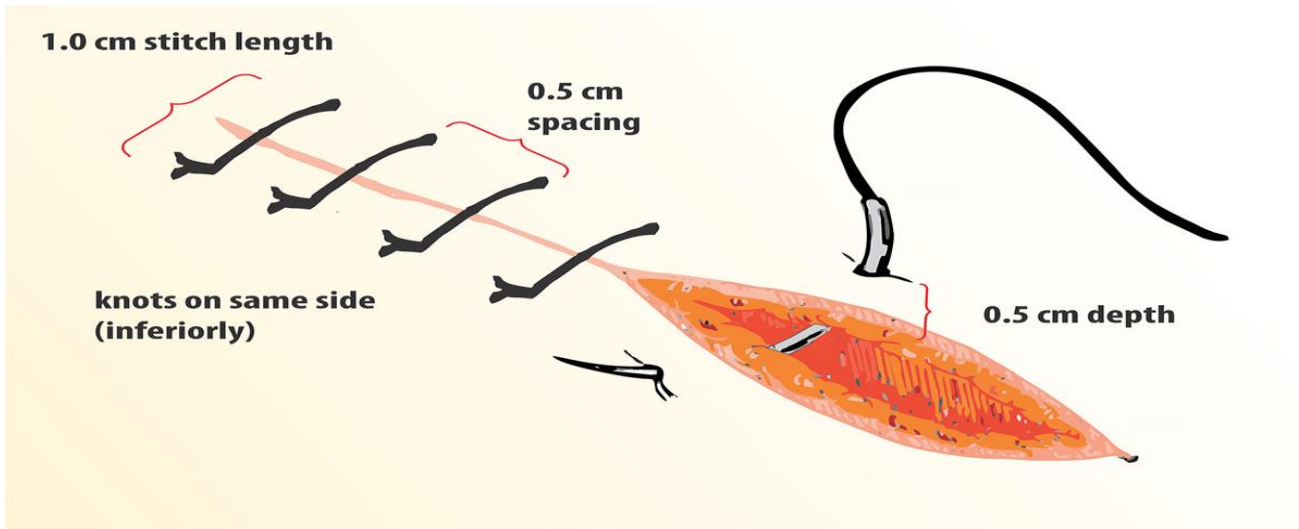
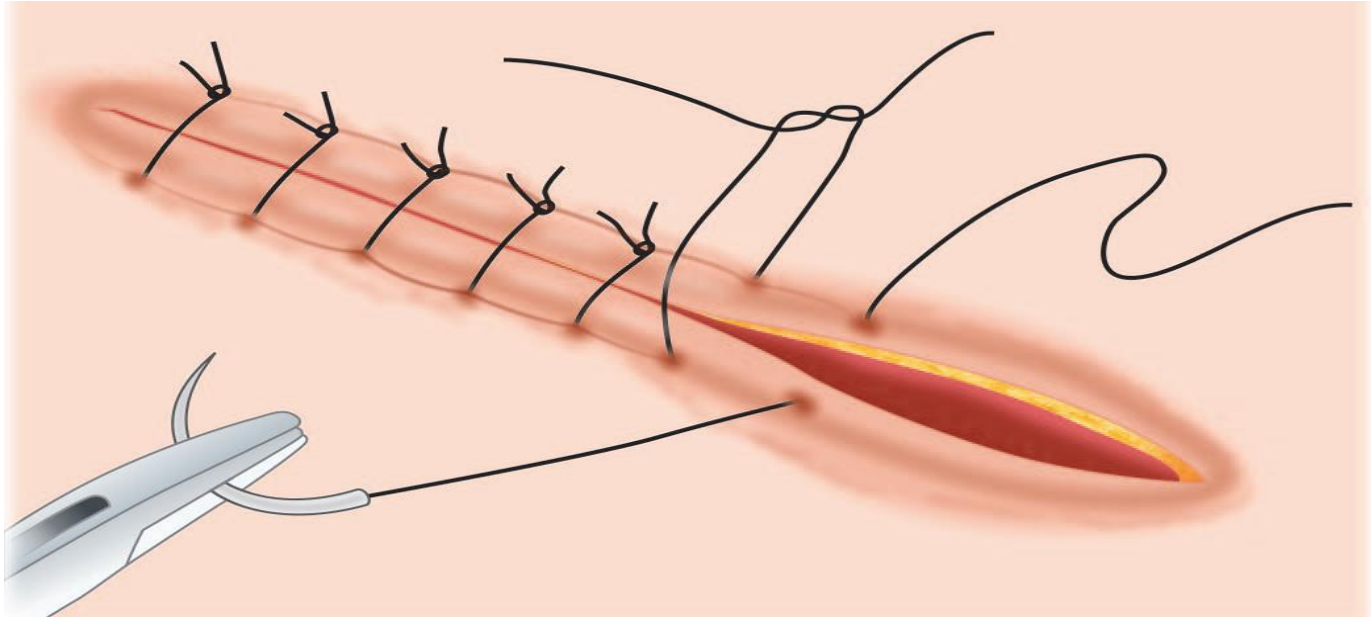


Suturing technique

Step 11: Cut the knot leaving an appropriate length of thread.

- ✓ Note: Maintain good aseptic technique throughout





Step 12: Dispose of sharps safely. Leave clinical area tidy and perform hand hygiene.



Summary

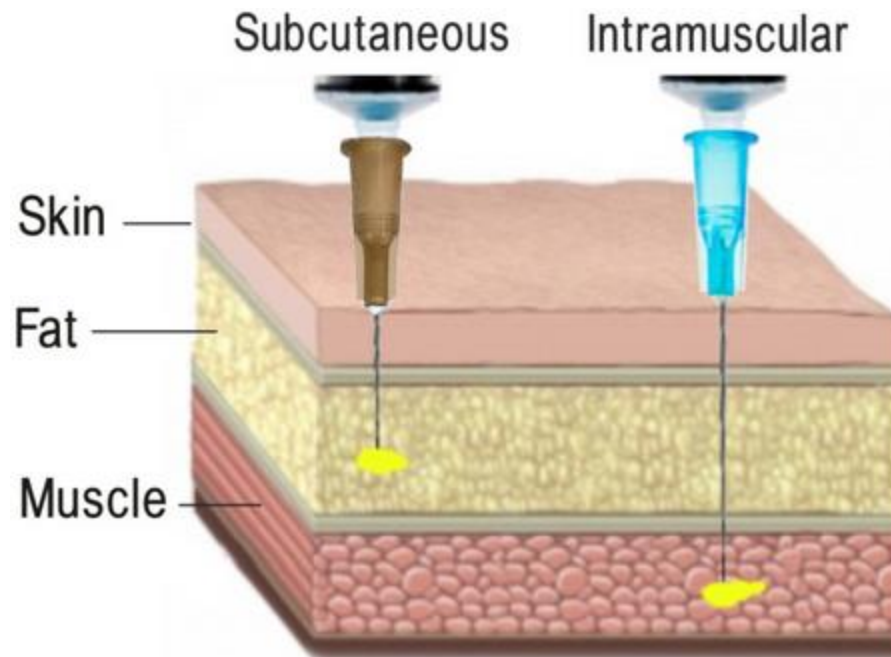
- **The indications of suturing :**
 - promote wound healing
 - minimize wound contamination
 - arrest hemorrhage
- **Classification of suturing:**
 - Natural / biological (Non – Absorbable)
 - Synthetic (Absorbable)
- **Suturing Instruments:** (needle, needle holder, forceps,.....)
- **Suturing technique** :???!!.....

INTRAMUSCULAR (IM) & SUBCUTANEOUS (SC) INJECTIONS

Outline:

- Introduction
 - Definition terms
 - Considerations before giving medications
 - I.M injection technique
 - S.C injection technique
 - Summary
-

I.M & S.C injection



introduction

- We administer medications to diagnose, treat, or prevent illness. They come in different forms and we take them in many different ways.
- There are different ways that can be used to administer the medications, depends on: absorption, duration of action, effects, patient status.....
 - **intravenous** (injected into the vein)
 - **Intramuscular**(injected into the muscle)
 - **subcutaneous** (injected into the fatty tissue)
 - **oral** (swallowed into the stomach)

introduction

- Before administer any medication the doctors and nurses should check: **six rights**
 1. right patient
 2. right drug
 3. right route
 4. right dose
 5. right time
 6. documentation: NOT written NOT done!

six rights of medication administration

- Example of written order (prescription chart):

The image shows a handwritten prescription chart with several annotations. The chart itself contains the following text:

R_x PATIENT NAME: John Smith
ADDRESS: _____
DOB: 11/1/80

DIRECTIONS:
Colace 100mg
1 tab PO qhs
Disp #30 (thirty)
Refills 0

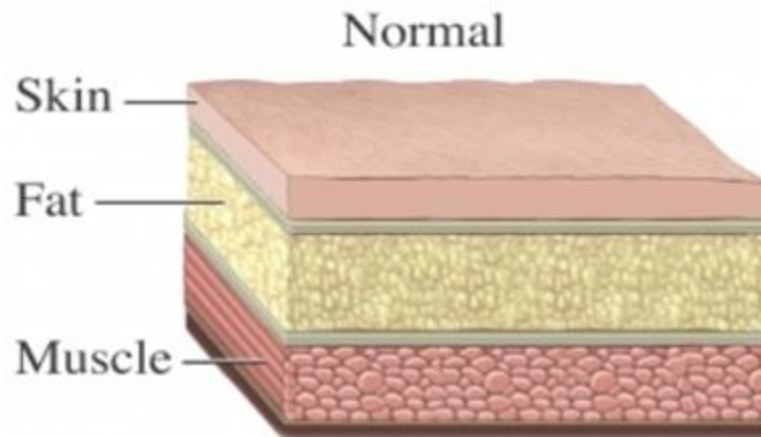
SIGNATURE: [Signature] DATE: 11/1/12

Annotations with red dots and arrows pointing to specific parts of the chart:

- Medication: Points to "Colace 100mg"
- Amount: Points to "1 tab"
- How Much: Points to "PO qhs"
- Refills: Points to "Refills 0"
- Patient name: Points to "John Smith"
- Date of birth: Points to "11/1/80"
- Strength: Points to "100mg"
- Frequency: Points to "qhs"
- Route: Points to "PO" (with "spelled out" written below it)
- Date: Points to "11/1/12"
- Sign: Points to the signature

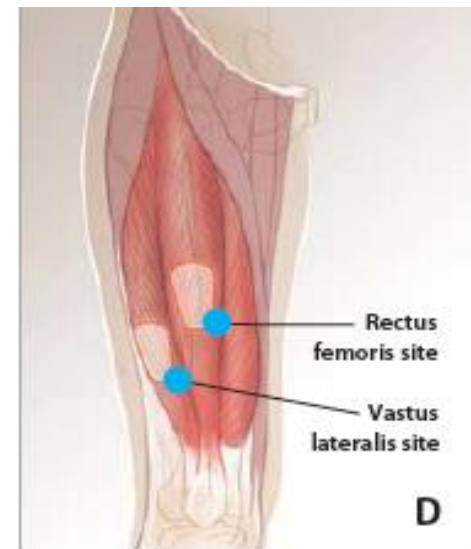
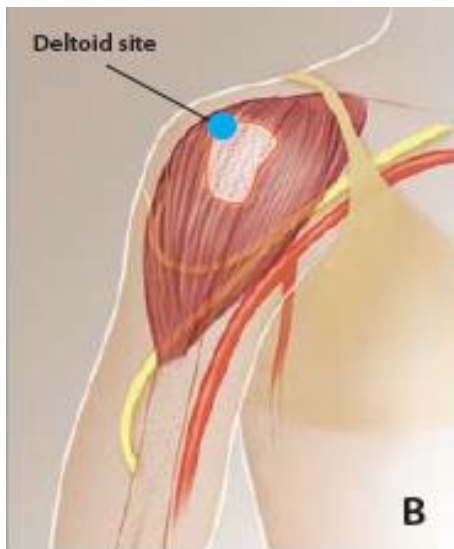
Definition terms

- **Intramuscular injection:** is a method used to deliver a medication deep into the muscles. This allows the medication to be absorbed into the bloodstream quickly but more slowly than if injected into a vein
- **subcutaneous injection :** is a method used to deliver a medication into the tissue layer between the skin and the muscle(fatty tissue). This way is usually absorbed more slowly than if injected into a muscle .

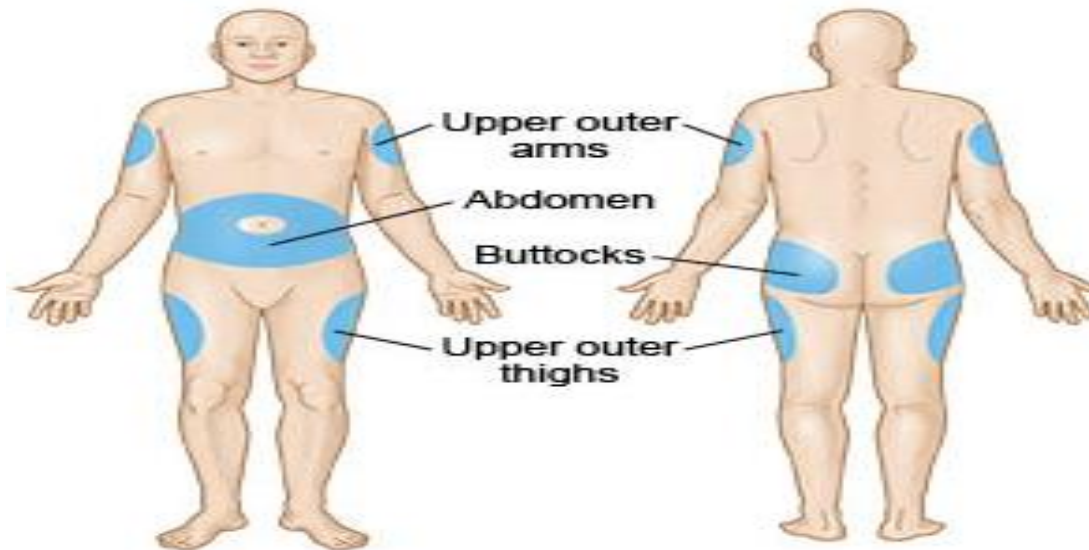


- **Sites** for intramuscular injections include:

- ✓ deltoid
- ✓ Ventrogluteal
- ✓ dorsogluteal
- ✓ vastus lateralis



- **Sites** for SC injections include:
 - ✓ outer aspect of the upper arms
 - ✓ the abdomen (from below the costal margin to the iliac crest)
 - ✓ anterior aspects of the thighs
 - ✓ upper back, and upper ventral gluteal area



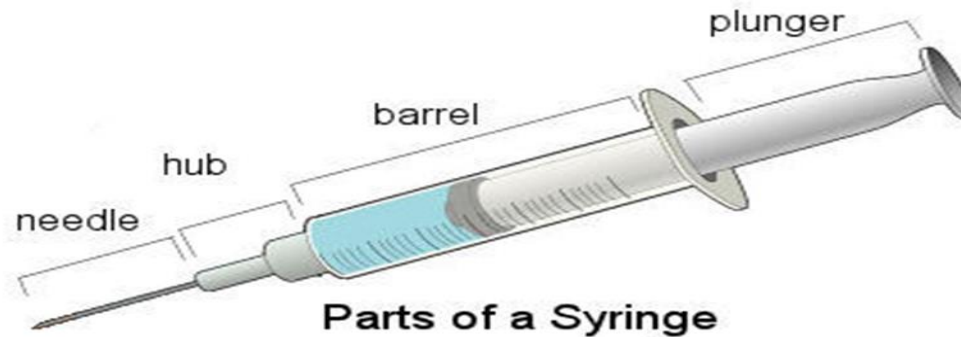
I.M injection technique

Before the procedure:

- ✓ Roll up sleeves, remove watch, wash hands, put on gloves
- get organized:
- ✓ Get all equipment ready in advance eg: syringe, needle, drug, gauze, swab...
- ✓ Check the drug name, dose, route and the time of administration against the prescription chart and also check the expiry date& allergy .

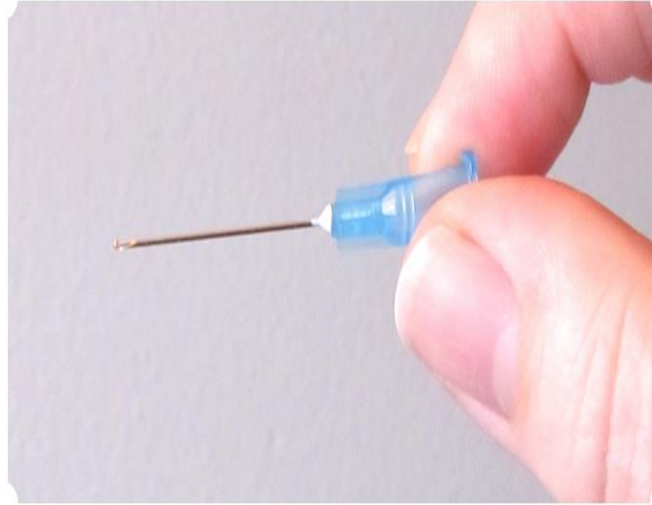
Preparing Syringe

- Choose correct needle length and gauge
- Minimize tissue injury and leakage
- Allow easy passage
- Needle length depends on injection site and age (adult, child)



I.M injection technique

- Use a blue needle to draw up the drug from a glass ampoule and discard needle in sharps bin (to avoid any small pieces of glass being injected into the patient)



I.M injection technique

the procedure:

- ✓ Introduce yourself to the patient, gain ongoing consent and cooperation.
- ✓ Identify correct patient verbally and with wristband and prescription chart.



I.M injection technique

- ✓ Check the prescription chart and ask the patient for any known allergies.

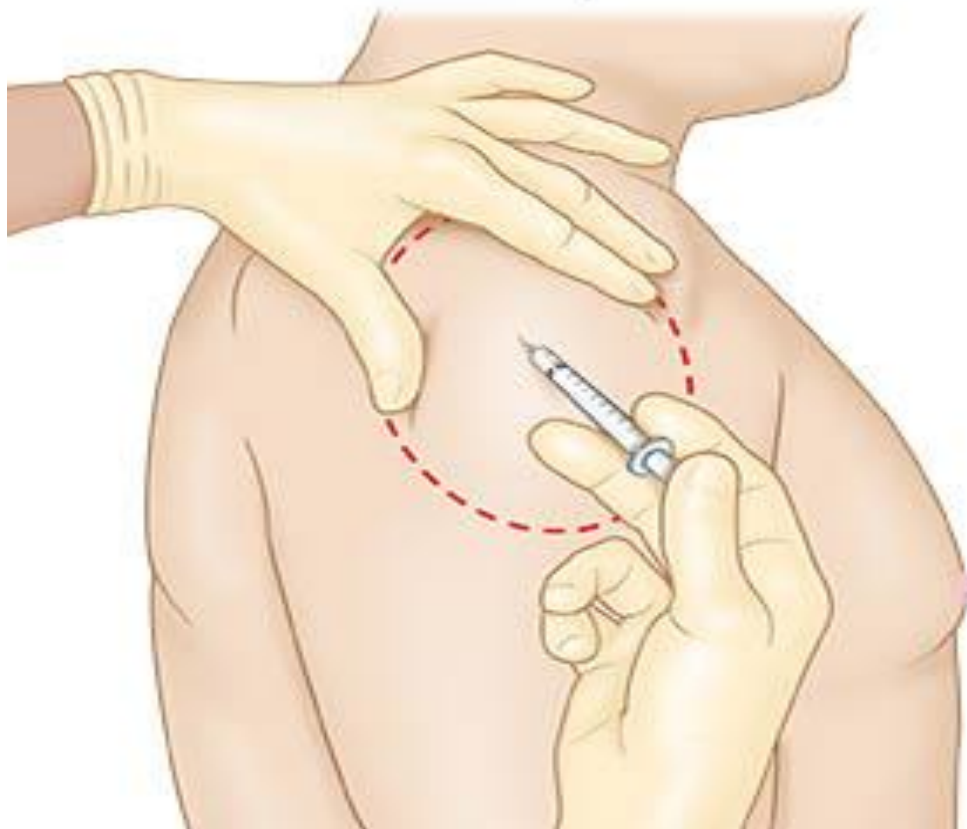
for example: allergy to latex, drugs.....

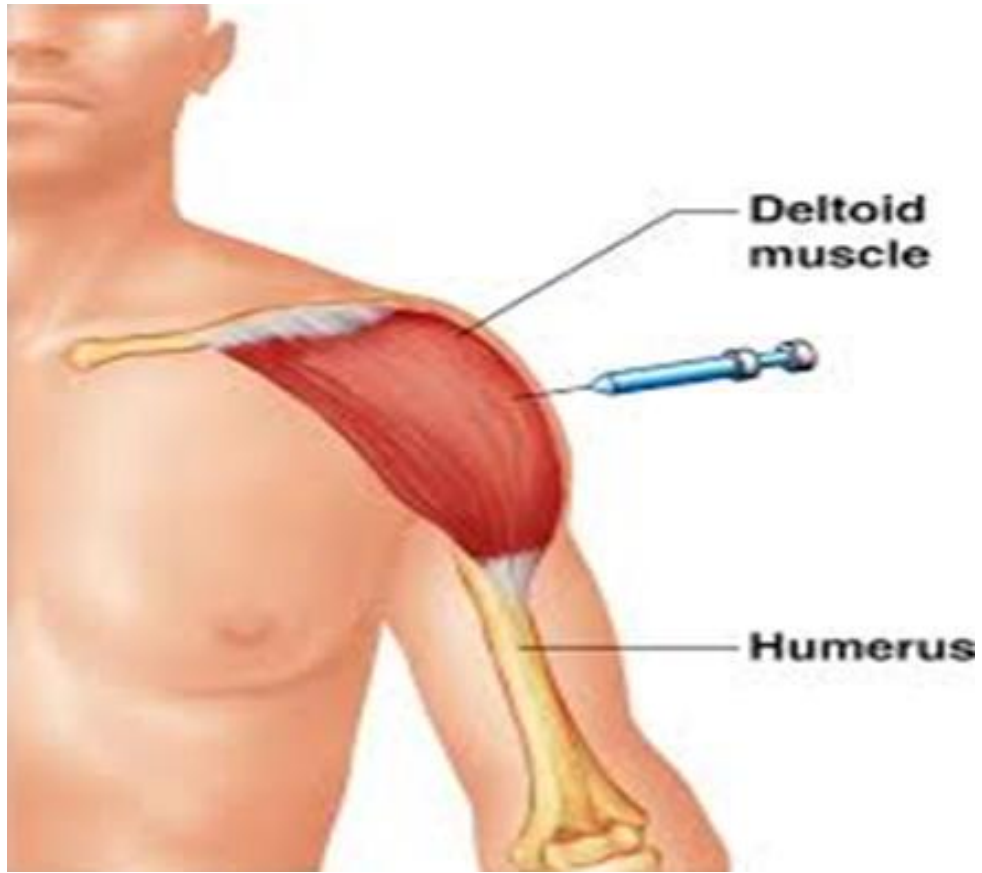
I.M injection technique

- ✓ clean the area with alcohol swab.
- ✓ Stretch the skin by pulling it laterally then administer the injection at an angle of 90° to the skin.
- ✓ Withdraw the plunger to check there is no blood (that the needle has not entered a blood vessel by mistake).
- ✓ Administer the solution slowly



Deltoid Injection





I.M injection technique

- ✓ Withdraw needle and release skin
- ✓ Place needle in sharps bin immediately
- ✓ Wipe and press firmly on the injection site until bleeding stops
- ✓ Leave clinical area clean and tidy and wash hands
- ✓ Sign prescription chart and document the drug given

S.C injection technique

Before the procedure:

- ✓ Roll up sleeves, remove watch, wash hands, put on gloves
- get organized:
- ✓ Get all equipment ready in advance eg: syringe, needle, drug, gauze swab
- ✓ Check the drug name, dose, route and the time of administration against the prescription chart and also check the expiry date& allergy .
- ✓ Use a blue needle to draw up the drug from a glass ampoule and discard needle in sharps bin (to avoid any small pieces of glass being injected into the patient)

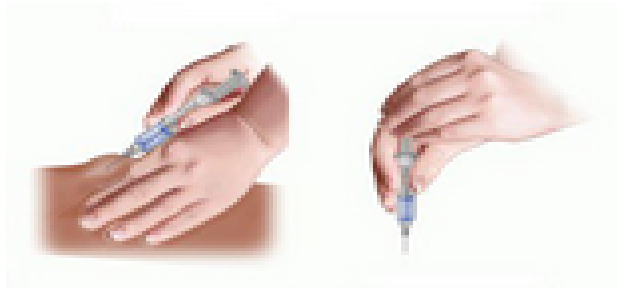
S.C injection technique

the procedure:

- ✓ Introduce yourself to the patient, gain ongoing consent and cooperation.
- ✓ Identify correct patient verbally and with wristband and prescription chart.
- ✓ Check the prescription chart and ask the patient for any known allergies.

S.C injection technique

- ✓ clean the area with alcohol swab.
- ✓ Pinch the skin and insert the needle into the subcutaneous tissue at an angle of 45°
- ✓ Administer the solution slowly
- ✓ Withdraw needle
- ✓ Wipe and press firmly on the injection site



S.C injection technique

- ✓ Place needle in sharps bin immediately.
- ✓ Leave clinical area clean and tidy and wash hands.
- ✓ Sign prescription chart and document the drug given.

SUMMARY

- Intramuscular (IM) injections administer medications into the muscle fascia, which has a rich blood supply, allowing medications to be absorbed faster through muscle fibers than they are through the subcutaneous route. Sites for intramuscular injections include the ventrogluteal, dorsogluteal, vastus lateralis, and the deltoid site.
- ~~Intramuscular injections must be done carefully to avoid complications.~~
- Subcutaneous (SC) injections are administered drug into the adipose tissue layer just below the epidermis and dermis. This tissue has few blood vessels, so drugs administered by this route have a slow, sustained rate of absorption. Sites for SC injections include the outer aspect of the upper arm, the abdomen, anterior aspects of the thighs, upper ventral gluteal area.

References

- Simpson, K. (2011). practical clinical skills workbook.
 - Doyle, G. & Anita, J. (2015). Clinical procedures for safer patient care. UK, British Columbia Institute of Technology (BCIT).
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