WELCOME

TO

This is an Education Platform

We provide Free PDF Notes and Videos Classes for Pharmacy Students

Web Site http://www.fdspharmacy.in/

You tube https://www.youtube.com/channel/UC77iEsiuZolU4pB8WAJIR5Q

What app https://chat.whatsapp.com/IzSgXtFEvhS4LN5xhUgq5z

Telegram https://t.me/+cvxm17xSloA4MjVl

Face book https://www.facebook.com/Fdspharmacy-105764311994440/

E-mail fdspharmacyinfo@gmail.com

Diploma in Pharmacy 2nd Year
Hospital & Clinical Pharmacy
Experiment

To perform the IM vaccination and injection techniques using mannequins

Aim:

To perform the IM vaccination and injection techniques using mannequins.

Reference :

‘ Dr. Gupta G.D. , Dr. Sharma Shailesh, Dr. Sharma Anshu, “Practical Manual of Hospital & Clinical Pharmacy” Published by Nirali Prakashan, Page no 52 – 56

Materials Required

- Non-sterile gloves
- Apron
- Equipment tray
- Syringe
- Injecting needle (21-23 gauge and 25mm long)
- Drawing-up needle (to filter out sub-visible particles of glass, rubber and other residues while withdrawing medications from ampoules).
- 70% isopropyl alcohol wipe
- Gauze or cotton swab
- Sharps container
- Medication to be administered
- Patient's prescription

Theory :

Intramuscular Vaccination and Injection Technique: The process of injecting a medication in the deep muscular area is known as intramuscular injection. After intramuscular administration, the medication gets quickly absorbed in the bloodstream.

Purpose

1. To provide a quick and rapid effect of medication.
2. To assure that the complete amount of drug administered will be absorbed in the bloodstream.
3. To deliver the medications that cannot be administered intravenously.

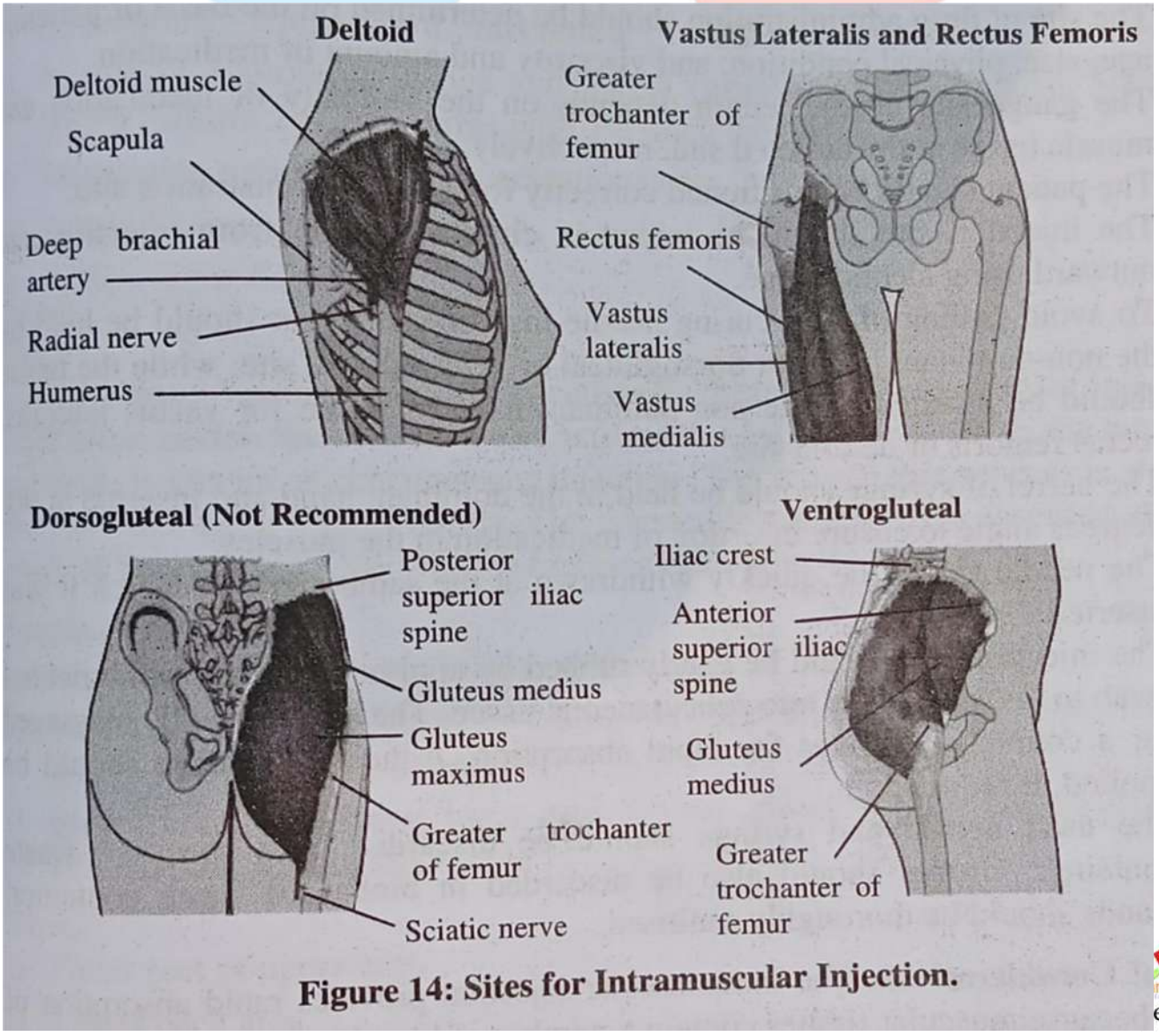

Figure 14: Sites for Intramuscular Injection.

Sites

1. **Upper Arm (Deltoid Muscle):** This muscle is located in upper arm just below the shoulder. For marking the injection site, the nurse should place the palm of non-dominant hand on patient's shoulder and spread her thumb apart from the other finger to form an upside down V-shape. The needle should be injected in the middle of V.
2. **Thigh (Vastus Lateralis Muscle and Rectus Femoris):** These sites should be marked by dividing the frontal thigh into third from the top to bottom of thigh. For injecting drug in the vastus lateralis, the needle should go in the middle third on the outer portion of the thigh. The rectus femoris muscle is located in the middle third, at the front of the thigh
3. **Hip (Ventrogluteal Muscle):** This site can be marked by lying down the patient on his/her back and then placing the heel of palm as the wrist is lined up with patient's thigh. The nurse's thumb should be towards the patient's groin and her fingers should be toward the patient's head. The nurse should feel the bony area with her ring finger, and then make a V-shape with her pointer finger and middle finger. The drug should be injected between these fingers.
4. **Buttocks (Dorsogluteal Muscle):** This site can be marked by dividing one butt cheek into quadrants (halfway down the middle and halfway across). The drug should be injected in the outer upper quadrant, towards the hip region.

Procedure

1. The dose should be prepared as given in the medication order.
2. The site of drug administration should be determined on the basis of patient's age, size, physical condition, and viscosity and amount of medication.

3. The gauge and needle length depends on the viscosity of medication and muscle tissue at the targeted site, respectively. 4) The patient should be positioned correctly for better administration site.
4. The injection site should be wiped in circular motion from injection site outward using alcohol wipe.
5. To avoid pulling of skin during needle insertion, the skin should be held by the non-dominant hand for dorsogluteal or ventrogluteal site, while the tissue should be pinched by the non-dominant hand of tissue for vastus lateralis, rectus femoris or deltoid site.
6. The barrel of syringe should be held in the dominant hand and inserted at 90- degrees angle to ensure insertion of medication in the muscles.
7. The needle should be quickly withdrawn at the same angle in which it was inserted.
8. The injection site should be gently rubbed by applying pressure with alcohol swab to avoid seepage into subcutaneous tissue. The site should be massaged for a couple of minutes for rapid absorption. Adhesive bandage should be applied, if required.
9. The used needle and syringe should be discarded in a specified waste container. Gloves should also be discarded in biohazard waste container. Hands should be thoroughly sanitised.

Special Considerations: The intramuscular injection provides rapid absorption of drugs because muscular tissues contain a number of blood vessels. The following guidelines should be considered while administering intramuscular injections:

1. Aqueous solutions get absorbed within half an hour.
2. Due to increased vascularity, the danger of injecting the medication into a blood vessel is increased.
3. Injection of viscous medications should be avoided in muscle tissue that has lost muscles mass.

4. For a normal healthy adult, the medication dose is mainly 3ml, which is further tolerated up to 4ml in larger muscles (gluteus medius). For thin adults, the medication dose should be 2ml. for pediatrics (of <2 years), the medication dose should not be more than 1mi
5. The needle should be penetrated beyond the adipose tissue (fat layer).
6. To penetrate the muscles tissue, a longer and heavier gauge needle should be used. Usually for a normal healthy adult, 20-23 gange and 1- 1½ inch long needle should be used to penetrate the deeper tissues at 90 degrees angle.
7. The needle length and gauge should be smaller for paediatrics, geriatrics, or thin persons due to lesser muscle mass.

Result :

IV vaccination and injection techniques using mannequins was performed.