

# REGIONAL ANAESTHESIA IN GENERAL PRACTICE

## ULNAR NERVE BLOCK

Pages with reference to book, From 333 To 335

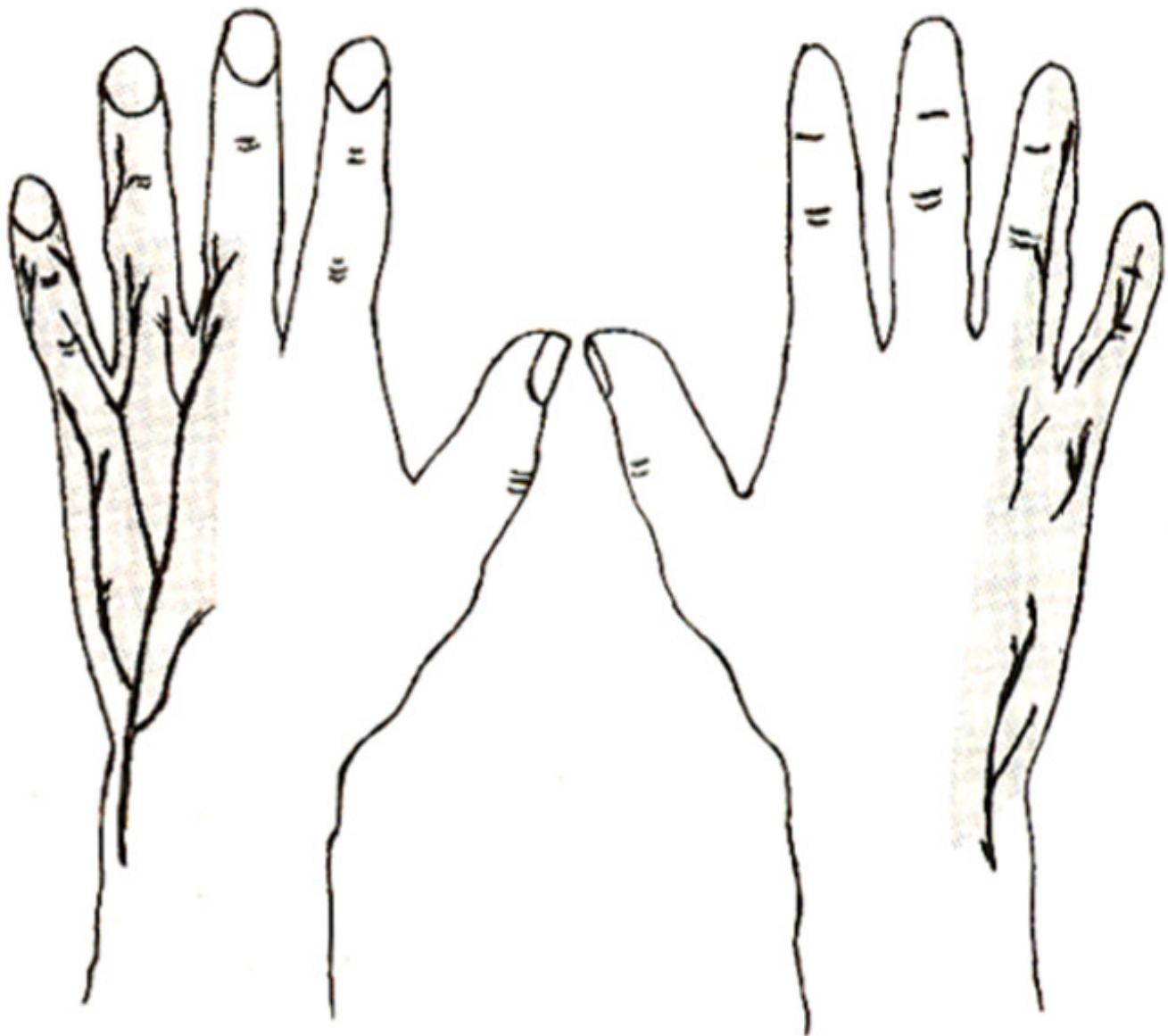
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### INTRODUCTION

The use of nerve block has several advantages compared to general anaesthesia. It is cheaper, has a short recovery period and minimal postoperative care, yet does require an intimate knowledge of anatomy and pharmacology. Ulnar nerve block is performed either at the elbow or at the wrist when minor surgery is to be performed within the area of the nerves distribution.

### ANATOMY<sup>1</sup>

The ulnar nerve originates from C6, C7, C8, T1 and lies in the ulnar nerve sulcus at the elbow which is situated on the posterior aspect of the medial epicondyl of humerus. It then runs down the flexor compartment of the forearm. In the distal third of the forearm it divides in dorsal and palmar branches. Dorsal branch is entirely sensory and gives branches to the ulnar side of the dorsum of the hand. The palmar branch divides on the radial side of the pisiform bone into a superficial and deep branch, superficial is the sensory branch and is distributed to the ulnar side of the palm, the little finger and the ring finger (Figure 1).



**Figure 1. Distribution of ulnar nerve to the hand.**

#### **INSTRUMENTS AND EQUIPMENT**

1. Sterile needles 25G and 23G.
2. 5 ml syringe.
3. Betadine antiseptic solution.
4. A small sterile pack containing:
  - A gallipot for antiseptic.

Figure 1. Distribution of ulnar nerve to the hand.

- Gauze Squares (4 cms x 4 cms)
- Sponge holding forceps.
- Small sterile drapes.

5. Resuscitation equipment must be at hand. Local Anaesthetic Solution Smlof 1% plain lignocaine solution or 0.25% plain bupivacaine solution.

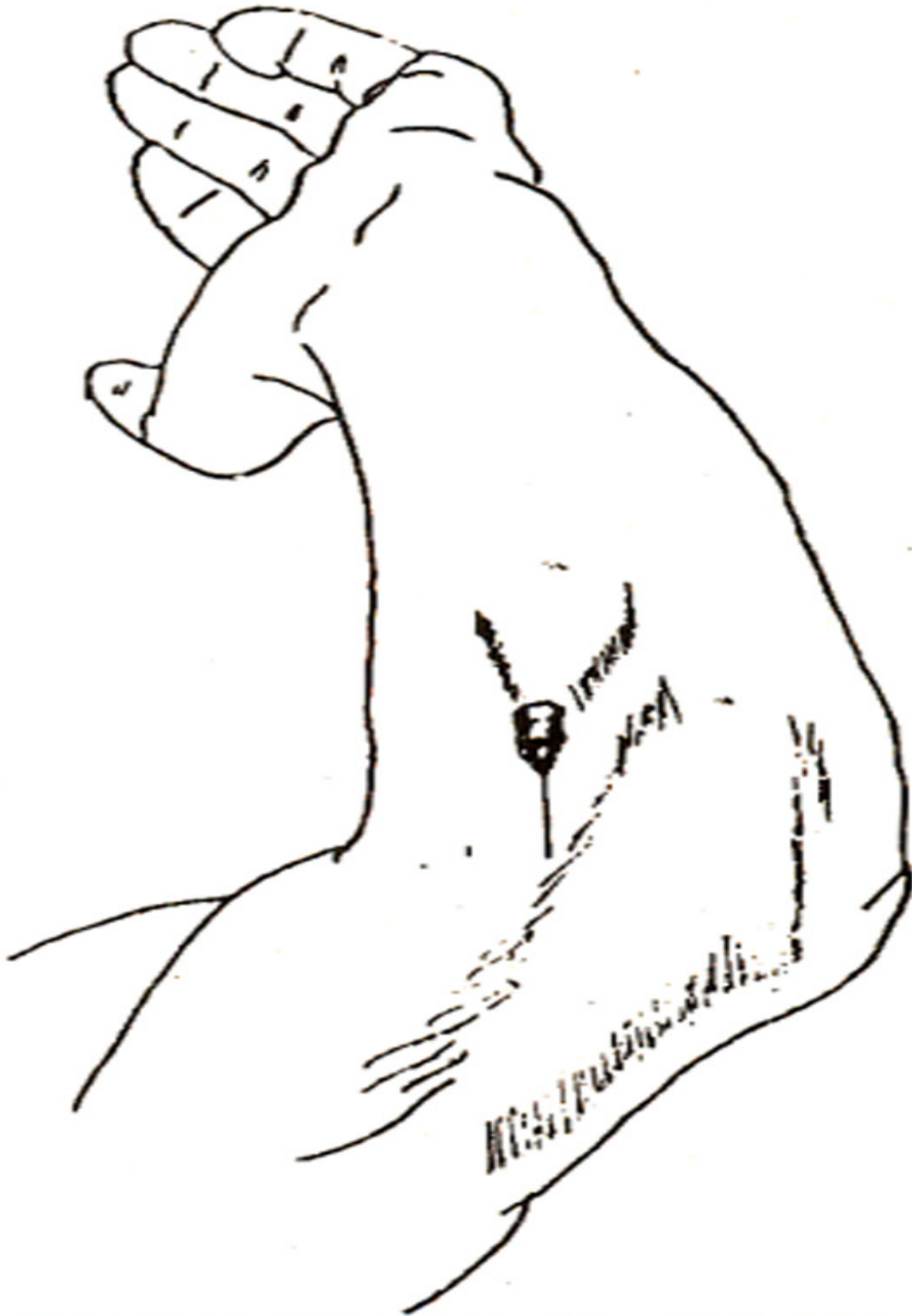
#### **PREPARATION OF THE PATIENT**

For any regional technique the patient is an active participant and therefore must be assessed before the insertion of block especially regarding:

- a. Examination of landmarks.
  - b. Coagulation status
  - c. Presence of any cutaneous infections near the block site.
  - d. Presence of any neurological deficit.
2. Reassure and explain the procedure to the patients.
  3. In nervous individuals diazepam 5 to 10 mgs orally given two hours before the administration of block is a suitable premedication.
  4. The operator must take sterile precautions before performing the block, i.e., nose and mouth covered with a mask and hands washed and gloved.
  5. An indwelling intravenous cannula is a must before insertion of any block.

### **TECHNIQUE<sup>1,2</sup>**

A Ulnar nerve block at the elbow (Figure 2).



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**Figure 2. Ulnar nerve block at the elbow .**

1. The patient should be lying supine with the arm abducted and elbow flexed at 90°.
2. The site should be prepared and draped.
3. Palpate the nerve in the ulnar sulcus at the elbow.

4. Warn the patient before inserting the needle.
5. Raise a skin bleb using a 25G needle.
6. Wait 1-2 minutes till the skin is anesthetized.
7. Change the needle to 23G.
8. Insert the needle towards the nerve till paraesthesia is elicited and radiates down the little finger.
9. Fix needle and inject 2mls of lignocaine slowly over 10-20 seconds.

**B. Ulnar nerve block at the wrist.**

1. The patient lies supine with the forearm supinated.
2. Identify flexor carpi ulnaris.
3. Go at right angles to skin at the level of styloid process of ulna till paraesthesia is elicited. Inject 4mls of 1% lignocaine. This blocks the palmar branch.
4. To block the dorsal branch place a subcutaneous ring from the tendon of flexor carpi ulnaris to the midpoint of dorsal aspect of wrist.

**Indications**

Minor surgery in the area of distribution of the ulnar nerve.

**Contraindications**

Ulnar nerve neuritis.

Onset of Block.

Within 5 minutes.

Duration of Block

With 1% lignocaine 160-120 minutes. With 0.25-0.5% plain bupivacaine 180-360 minutes.

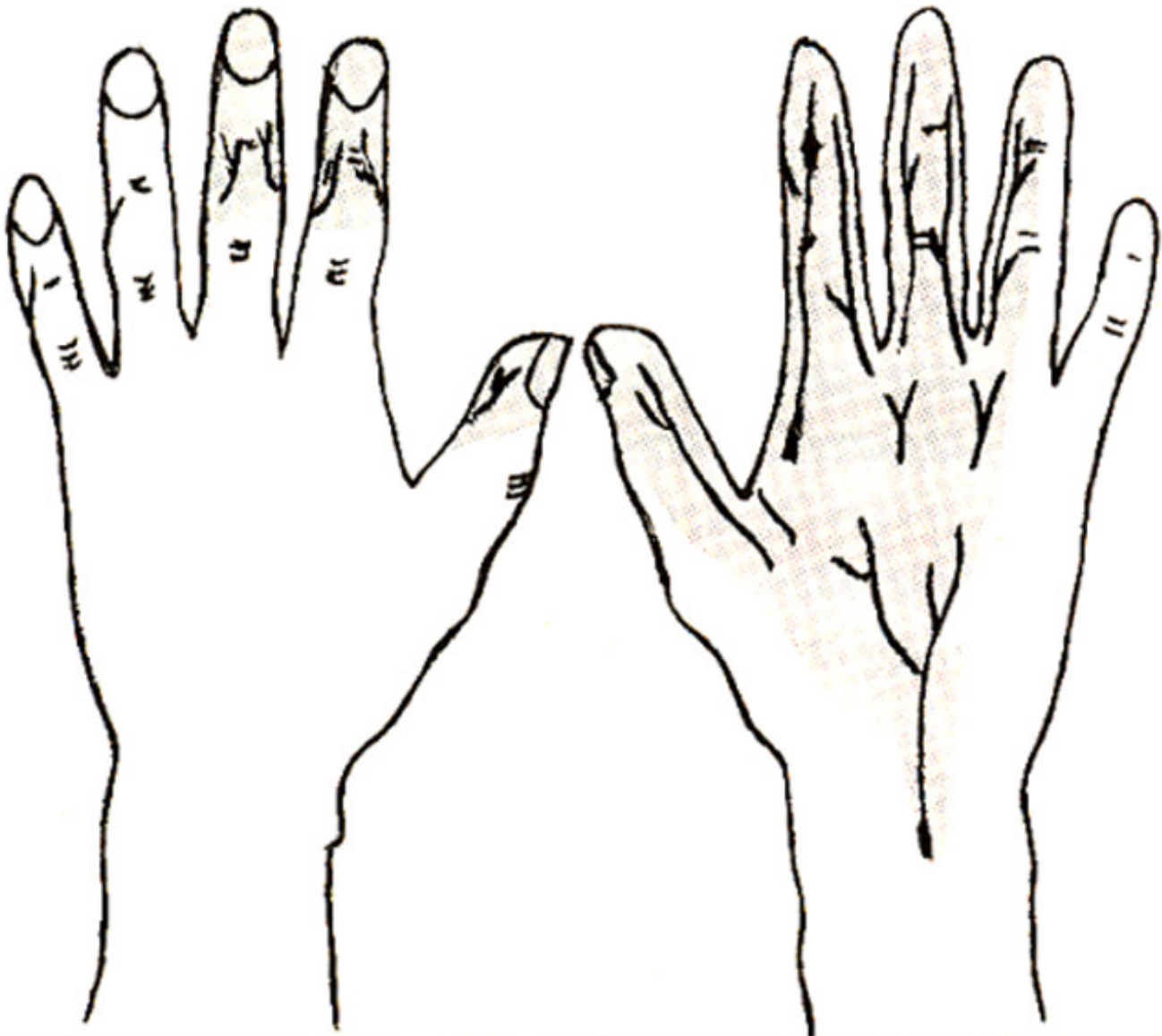
**MEDIAN NERVE BLOCK**

**INTRODUCTION**

The median nerve block is useful when minor surgery is to be performed within the area of the nerves distribution.

**ANATOMY**

The median nerve originates from C5, C6, C7, C8 and T1. In the cubital fossa it lies medial to the brachial artery and is covered by the aponeurosis of the biceps muscle. It then continues in the flexor compartment of the forearm between the superficial and deep flexors and at the level of the proximal crease it comes to lie superficially. It innervates the palmar surface of the radial side to the midline of the ring finger (Figure 3).



**Figure 3. Distribution of median nerve to the hand.**

#### **INSTRUMENT AND EQUIPMENT**

1. Sterile needles 25G and 23G.
2. 5ml syringe.
3. Betadine antiseptic solution.
4. A small sterile pack containing:
  - A gallipot for antiseptic.
  - Gauze squares (4cms x 4cms)
  - Sponge holding forceps.
  - Small sterile drapes.
5. Resuscitation equipment must be at hand.

#### **LOCAL ANAESTHETIC SOLUTION**

5ml of 1% plain lignocaine solution or 0.25% plain bupivacaine solution.

#### **PREPARATION OF THE PATIENT**

1. For any regional technique the patient is an active participant and therefore must be assessed before

the insertion of block especially regarding:

- a. Examination of landmarks. b. Coagulation status.
- c. Presence of any cutaneous infections near the block site. 4. Presence of any neurological deficit.
2. Reassure and explain the procedure to the patient.
3. In nervous individuals diazepam 5 to 10 mgs orally given two hours before the administration of block is suitable premedication.
4. The patient must be observed and verbal contact maintained with him throughout.
5. The operator must take sterile precautions before performing the block, i.e., nose and mouth covered with a mask and hands
6. A indwelling intravenous cannula is a must before insertion of any block.

### **TECHNIQUE**

#### **A. Median nerve block at the elbow.**

1. The patient lies supine with the arm slightly abducted supinated.
2. The site is prepared and draped.
3. Identify the two epicondyles at the elbow and draw a line between the two.
4. Identify the brachial artery on this line.
5. Raise a skin bleb using a 25G needle.
6. Wait 1-2 minutes till the skin is anaesthetised.
7. Change the needle to 23G.
8. Insert needle just medial to the brachial artery on the line drawn. 9. When paraesthesia obtained inject 5 ml of lignocaine 1% solution or 5 ml of bupivacaine 0.25% solution.

#### **B. Median nerve block at the wrist.**

1. The patient lies supine with the arm slightly abducted and supinated. The wrist is flexed on a sandbag.
2. Proximal crease of the wrist is identified.
3. The tendons of flexor palmaris longus and flexor carpi radialis are identified.
4. The needle is inserted at right angles to the skin between the two tendons at the level of the proximal crease.
5. The needle is moved fanwise in a plane at right angles to the long axis of forearm to obtain paraesthesia.
6. When paraesthesia elicited inject 5ml of 1% lignocaine slowly add 2ml subcutaneously before coming out.

### **ONSET OF BLOCK**

**Within 5 minutes**

### **DURATION OF BLOCK**

With 1% plain lignocaine 160-120 minutes. With 0.25-0.5% plain bupivacaine 180-360.

### **REFERENCES**

1. Illustrated 1-land Book in Local Anaesthesia. Edited by Ejnar Erikson. Lloyd-Luke (Medical Books), London 1974.
2. Murphy, T. Nerve blocks. Anaesthesia. Edited by Miller, RD. Churchill Livingstone. New York 1986.