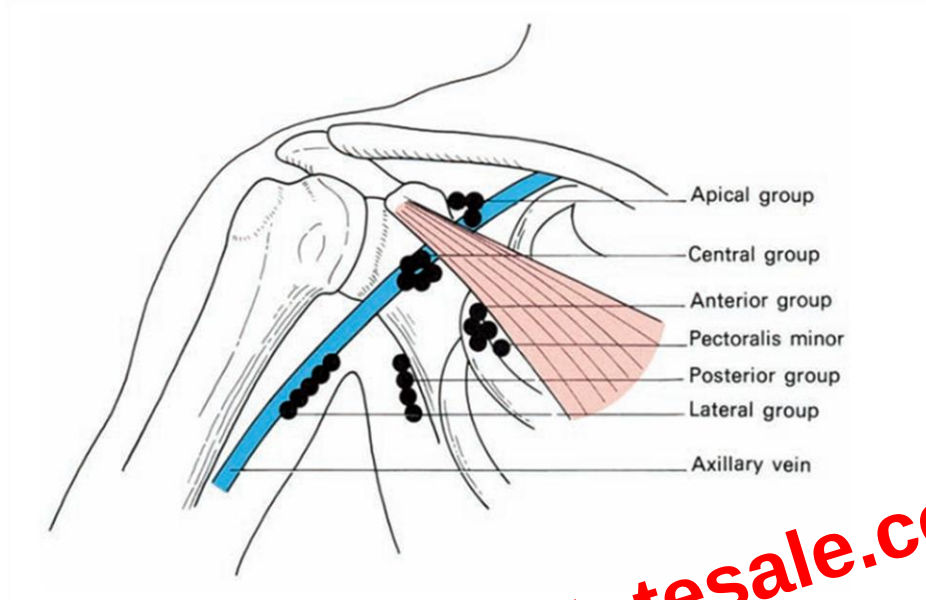


NB, some lymph from the breast also reach the supraclavicular nodes, the cephalic(delto pectoral)nodes, the posterior intercostal nodes, the subdiaphragmatic and subperitoneal lymph plexuses



The lymph nodes of the axilla

LYMPHATIC VESSELS

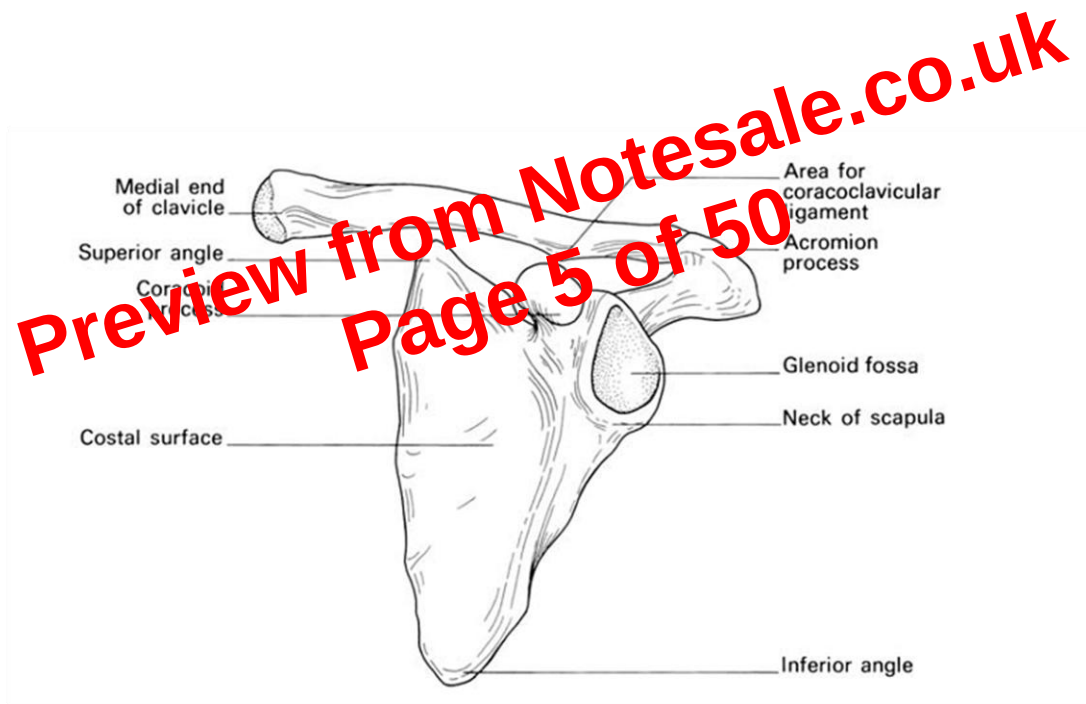
This is grouped into:

- A. The superficial lymphatics: this drain the skin over the breast except for the nipple and areola. The lymphatics pass radially to the surrounding lymph nodes.
- B. The deep lymphatics : this drain the parenchyma of the breast. They also drain the nipple and areola.

NB, Lymph from the anterior and posterior groups pass to the central and lateral groups, and through them to the apical group.

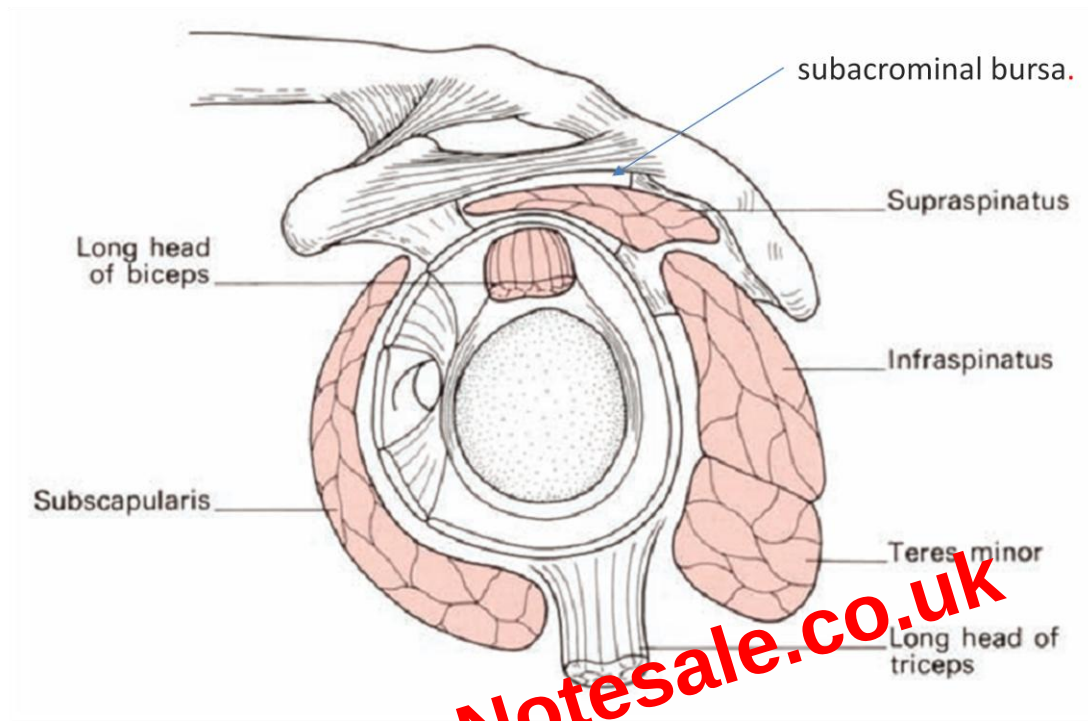
HOW DOES MALIGNANT SPREAD OCCOUR?

- It is a flat bone with 2 surfaces (ventral & dorsal) & 3 angles (superior, lateral & inferior) & 3 borders (medial, lateral & superior).
- This triangular bone bears three prominent features: the glenoid fossa laterally (which is the scapula's contribution to the shoulder joint), the spine on its posterior aspect, projecting laterally as the acromion process, and the coracoid process on its anterior aspect.
- Its strong muscular coverings protect the scapula and it is rarely fractured, only by direct and severe violence.



The left scapula and clavicle

Articulation of the scapula



The shoulder joint Lateral view

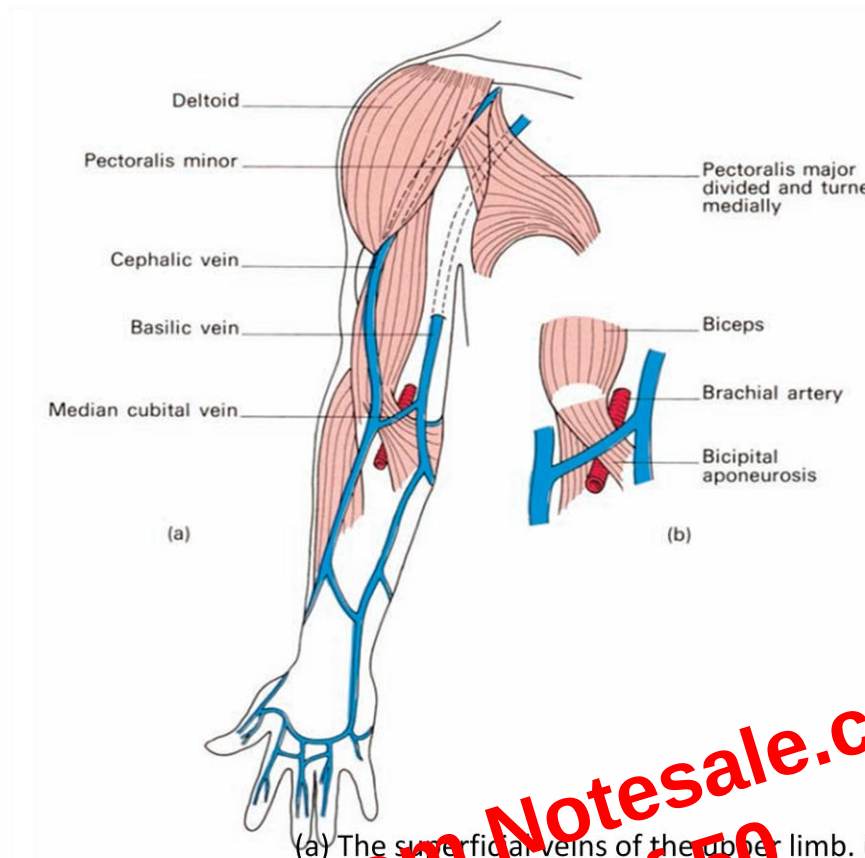
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forearm the artery becomes superficial between the tendons of flexor carpi ulnaris and flexor digitorum sublimis; it then crosses the flexor retinaculum to form the superficial palmar arch with the superficial branch of the radial artery. The ulnar nerve accompanies the artery on its medial side in the distal two-thirds of its course in the forearm and across the flexor retinaculum

THE VEINS OF THE UPPER LIMB

The veins of the upper limb comprise the deep venae comitantes, which accompany all the main arteries, usually in pairs, and the much more important superficial veins—more important both in size and in practical value because of their use for venepuncture and transfusion. These superficial veins can be seen as a dorsal venous network on the back of the hand which drains into a lateral cephalic and medial basilic vein. The cephalic vein at its origin lies fairly constantly in the superficial fascia just posterior to the radial styloid; even if not visible it can be cut down upon confidently at this site.

It then runs up the anterior aspect of the forearm to lie in a groove along the lateral border of the biceps and then, after piercing the deep fascia in the groove between pectoralis major and the deltoid, where again it can readily be exposed for an emergency cutdown. It finally penetrates the clavipectoral fascia to enter the axillary vein. The basilic vein runs along the posteromedial aspect of the forearm, passes on to the anterior aspect just below the elbow and pierces the deep fascia at about the middle of the upper arm. At the edge of the posterior axillary fold it is joined by the venae comitantes of the brachial artery to form the axillary vein. Linking the cephalic and basilic veins just distal to the front of the elbow is the median cubital vein, usually the most prominent superficial vein in the body and visible or palpable when all others are hidden in fat or collapsed in shock

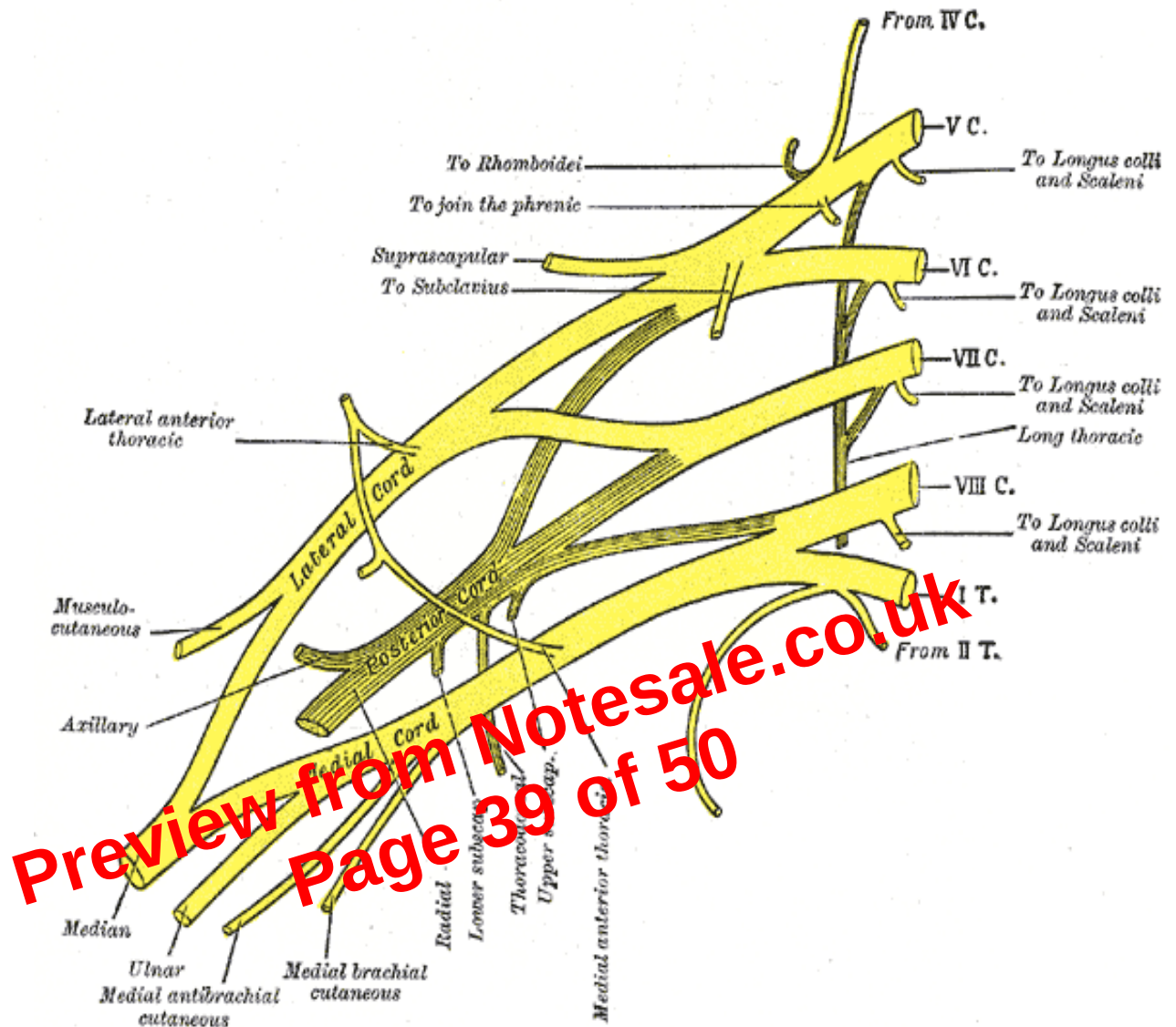


(a) The superficial veins of the upper limb. (b) Detail of the bicipital aponeurosis, lying between the median cubital vein and the brachial artery

The brachial plexus

The brachial plexus is of great practical importance to the surgeon. It may be damaged in open, closed or obstetrical injuries, be pressed upon by a cervical rib or be involved in tumour. It is encountered, and hence put in danger, in operations upon the root of the neck. The plexus is formed as follow

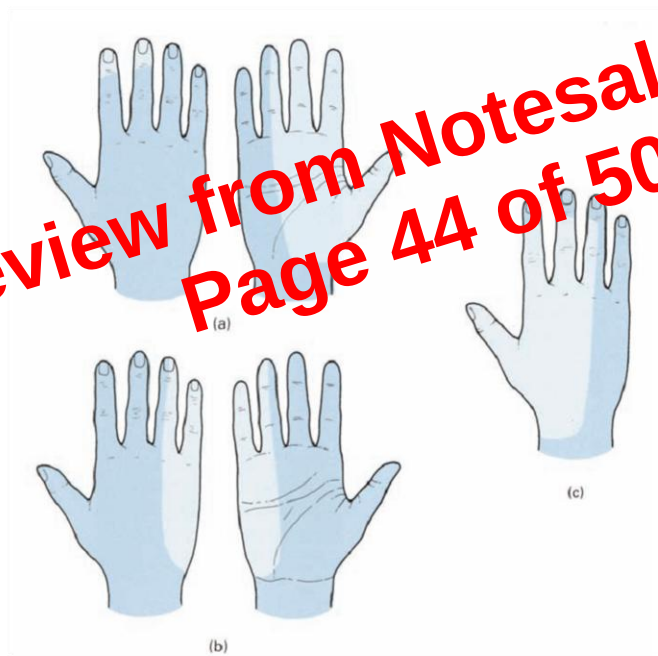
1. five roots derived from the anterior primary rami of C5, 6, 7, 8 and T1; link up into:
2. three trunks formed by the union of
 - i. C5 and 6 (upper);
 - ii. C7 alone (middle);
 - iii. C8 and T1 (lower)



- From the trunk
 - ❖ suprascapular nerve—from the upper trunk (supplies supraspinatus and infraspinatus).
- From the lateral cord
 - ❖ musculocutaneous nerve;
 - ❖ lateral pectoral nerve;
 - ❖ lateral root of median nerve.

At the wrist, the median nerve becomes superficial on the ulnar side of flexor carpi radialis, exactly in the midline. Here it gives off a palmar cutaneous branch, which supplies the skin of the midpalm. It then passes deep to the flexor retinaculum, giving off an important branch to the thenar muscles beyond the distal skin crease, twigs to the radial two lumbricals and cutaneous branches to the palmar aspects of the radial 3 1/2 digits. Its branches are:

- i. muscular—to all the muscles of the flexor aspects of the forearm, apart from the flexor carpi ulnaris and the ulnar half of flexor digitorum profundus, and to the thenar eminence muscles and the radial two lumbricals;
- ii. cutaneous—to the skin of the radial side of the palm, the palmar, and a variable degree of the dorsal, aspect of the radial 3 1/2 digits.



The usual cutaneous distribution (shown in pale blue) of the (a) median, (b) ulnar and (c) radial nerves in the hand (considerable variations and overlap occur)

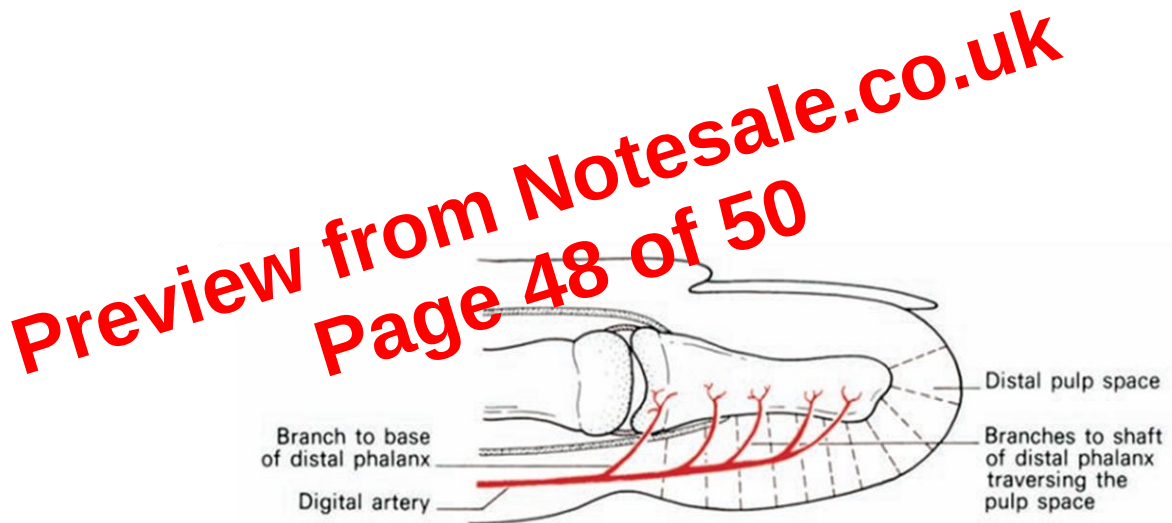
THE ANATOMY OF UPPER LIMB DEFORMITIES

Many deformities of the upper limb, particularly those resulting from nerve injuries, are readily interpreted anatomically. Brachial plexus injuries may occur from traction on the

4. The radial bursa;
5. The midpalmar space;
6. The thenar space.

1. The superficial pulp spaces of the fingers.

The tips of the fingers and thumb are composed entirely of subcutaneous fat broken up and packed between fibrous septa, which pass from the skin down to the periosteum of the terminal phalanx. The tight packing of this compartment is responsible for the severe pain of a 'septic finger'—there is little room for the expansion of inflamed and oedematous tissues.



The distal pulp space of the finger—note the distribution of the arterial supply to the distal phalanx.