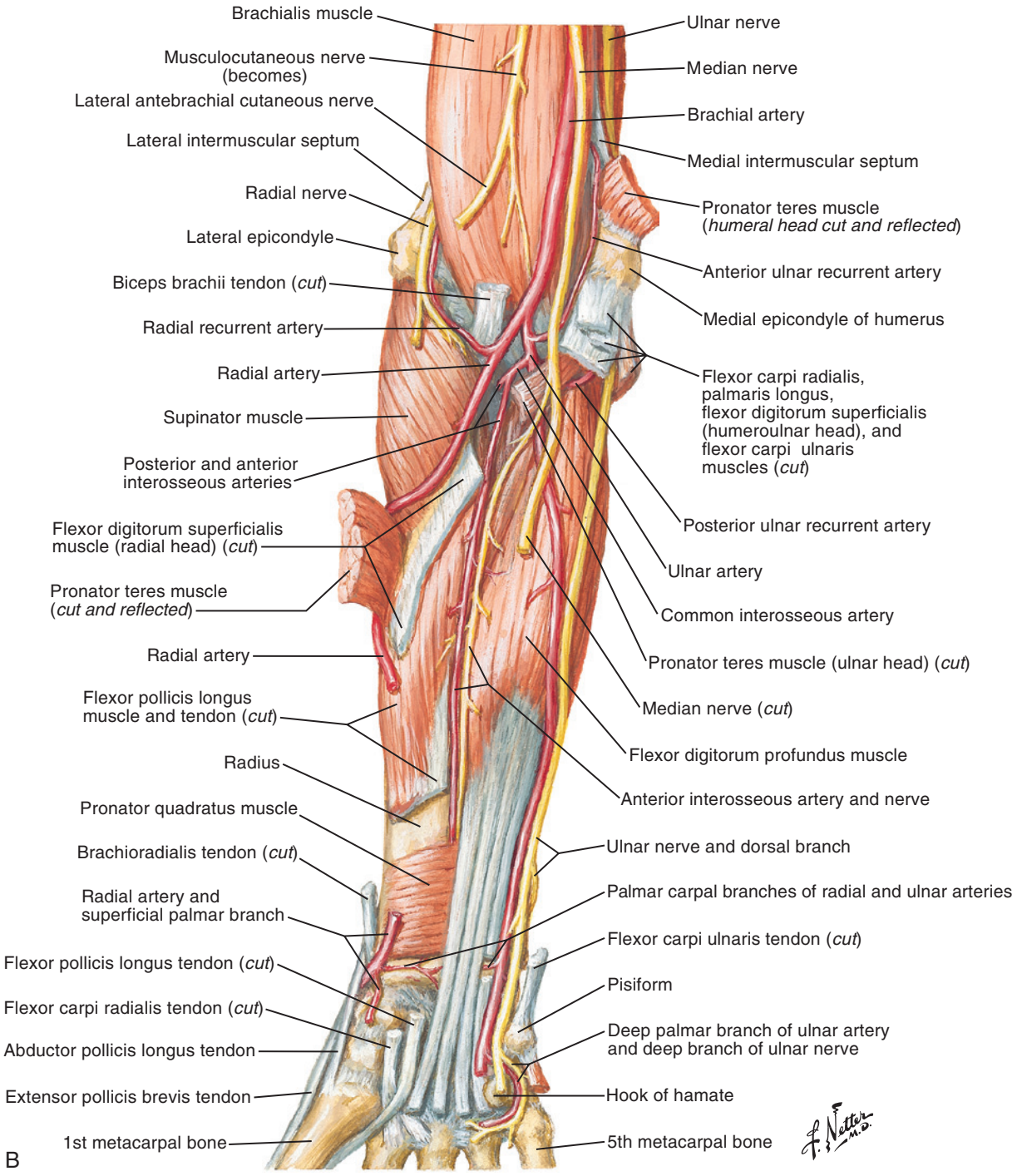


Figure 12.10, cont'd

The mobile wad comprises three muscles on the radial side of the forearm – the brachioradialis, extensor carpi radialis longus, and brevis.

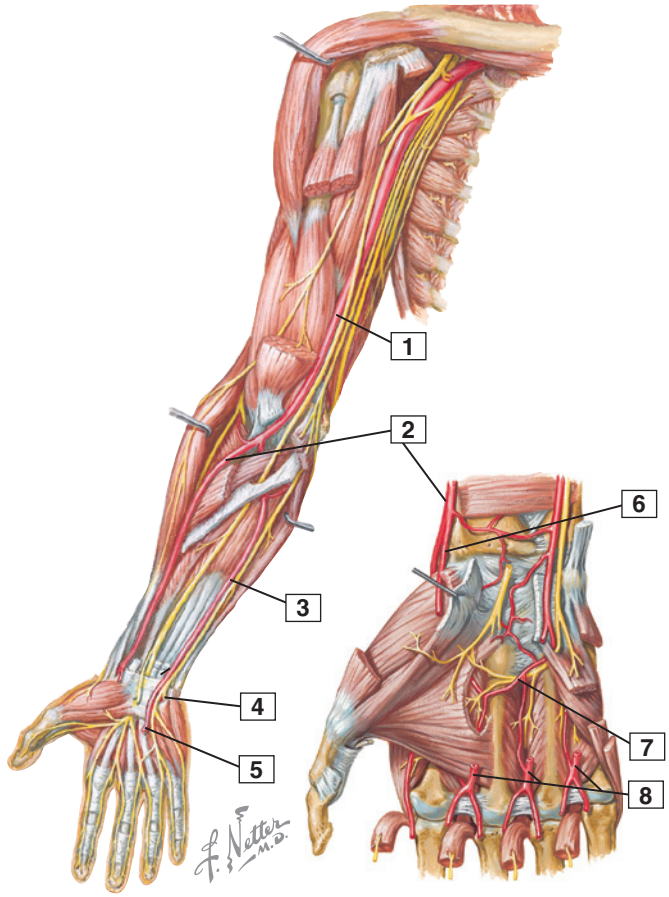
VASCULAR ANATOMY OF THE FOREARM

THE ULNAR ARTERY

The ulnar artery is a direct continuation of the brachial artery and is the larger of its two terminal branches. It originates at the level of the radial neck approximately 2–3 cm distal to the elbow crease, and is accompanied by two venae comitantes. It reaches the ulnar margin of the forearm approximately half way between the elbow and the wrist (Fig. 12.4).

Proximally, it is deep to the pronator teres, flexor carpi radialis, and flexor digitorum superficialis muscles, lying initially on the brachialis then flexor digitorum profundus muscle bellies. Distally, it continues to lie superficial to the flexor digitorum profundus muscle belly between the flexor carpi ulnaris (ulnarly) and the flexor digitorum superficialis (radially), and is quite superficial in the distal third of the

Arteries: Elbow, Wrist, and Hand



1. Brachial artery
2. Radial artery
3. Ulnar artery
4. Deep palmar branch of ulnar artery
5. Superfi cial palmar arch (cut)
6. Superfi cial palmar branch of radial artery
7. Deep palmar arch
8. Common palmar digital arteries

Comment: The radial artery passes over the pronator teres muscle and under the brachioradialis muscle. Distally, it separates into the palmar carpal, dorsal carpal, and superficial palmar branches. The ulnar artery crosses between the flexor digitorum superficialis and profundus muscles and forms four branches distally: the palmar and dorsal carpal branches, the deep palmar branch, and the superficial palmar arch.

Figure 12.12 Arterial anatomy of the upper extremity and deep dissection of the palm. (Reprinted from Netter Anatomy Illustration Collection. ©Elsevier Inc. All Rights Reserved.)

forearm, covered only by deep and superficial fascia and skin (Fig. 12.9), allowing for expeditious exposure with minimal dissection. The ulnar artery gives rise to an average of three (1–6) perforators in its mid-portion. Most of the septocutaneous perforators can be found along a line drawn from the medial epicondyle to the pisiform, ~7–15 cm proximal to the pisiform, or within a 3 cm radius of the midpoint of the forearm.[3,4] Additional perforators may be located more proximally, however these are usually musculocutaneous through the flexor carpi ulnaris muscle belly and are of limited use in microvascular reconstruction. However, the flexor carpi ulnaris can be used as a pedicled turnover muscle flap based on one or more of these perforators for coverage of small elbow defects.

The ulnar nerve joins the ulnar artery in the proximal forearm and accompanies it on the ulnar side throughout its course (Fig. 12.4). Both structures descend the forearm superficial to the flexor digitorum muscle belly, eventually lie ulnar to the flexor tendons, and pass across the wrist entering Guyon's canal superficial to the flexor retinaculum.

BRANCHES OF THE ULNAR ARTERY

The ulnar artery gives rise to several named branches (anterior ulnar recurrent, posterior ulnar recurrent, common interosseous) and multiple muscular branches (Fig. 12.7).

The anterior ulnar recurrent artery is the most proximal branch of the ulnar artery arising medially just distal to the origin of the ulnar artery, heads proximally and anteriorly between the brachialis and pronator muscle bellies. It anastomoses anterior to the medial epicondyle with the inferior ulnar collateral artery.

The posterior ulnar recurrent artery is usually larger than the anterior ulnar collateral, arises more distally and heads posteriorly and proximally between the deep and superficial finger flexors. It ascends posterior to the medial epicondyle to anastomose with the superior and inferior ulnar collaterals.

The common interosseous artery is the third and largest branch of the ulnar artery, although it can occasionally arise from the brachial artery. It has a short course of about 1 cm, arising from the posterolateral aspect of the ulnar artery at the level of the bicipital tuberosity of the radius (Fig. 12.7). It divides early into anterior and posterior branches that pass to their respective sides of the interosseous membrane.

The anterior interosseous artery courses through the deep flexor compartment accompanied by the anterior interosseous nerve, lying on the interosseous membrane