Brachial System Encyclopedia Article

Brachial System

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Brachial System

Arteries are the conduits for the delivery of oxygenated **blood** to tissues and cells. The brachial arterial system delivers blood from the **heart** to the arms and associate upper limb musculature. Each arm contains a brachial artery, the major artery of the brachial system. Each brachial artery runs from the portion of the arm located just below the shoulder down to just below (distal to) the bend of the elbow. There, it branches into the radial and ulnar arteries. The radial artery continues the delivery of blood to the hands.

Along the brachial artery are branching arteries, which carry the blood to all regions of the arms. The arteria profunda brachii (also known as the superior profunda artery) is large. It branches off just below the border of the shoulder and the arm and follows the route of the radial nerve laterally to the sides of the arm. Two other branches of this artery, the middle collateral branch and the radial collateral branch, run to the meaty back portion of the upper arm.

Another branch of the brachial artery is called the nutrient artery. It branches off about the middle of the arm. The superior ulnar collateral artery (also called the inferior profunda artery) branches off from the brachial artery a bit below the middle of the arm. This artery is smaller in diameter. It runs down the arm from the elbow. The inferior ulnar collateral artery (also known as the anastomotica magna artery) branches off just above the elbow. Smaller sub-branches radiate upwards and downwards from the inferior artery. Finally, three to four muscular branches (also known as rami musculares) radiate outward into the various muscles groups along the length of the arm.

The brachial artery is one of the arteries used to measure a **pulse**. When the biceps muscle is flexed, a groove can be felt just below the armpit on the inside of the arm. It is at this location that the pulse of blood through the brachial artery can be detected.

Injury to the elbow can impinge on the brachial artery. For this reason, it is important to quickly treat an elbow injury, especially blunt or crushing trauma, to ensure that blood flow to the lower arm is not being compromised. Interruption of blood flow even for a short while can lead to cell **death** (**necrosis**) and loss of function of tissues.