Anatomical and histomorphometric observations on the transfer of the anterior interosseous nerve to the deep branch of the ulnar nerve. 

Abstract: 
This study focuses on the anatomical and histomorphometric features of the transfer of the anterior interosseous nerve to the deep motor branch of the ulnar nerve. The transfer was carried out in 15 cadaver specimens and is described using relevant anatomical landmarks. Nerve samples of donor and target nerves were histomorphometrically analysed and compared. The superficial and the deep ulnar branches had to be separated from each other for a length of 67 mm (SD 12; range 50-85) to reach the site of coaptation. We identified a suitable site for coaptation lying proximal to the pronator quadratus muscle, 202 mm (SD 15; range 185-230) distal to the medial epicondyle of the humerus. The features of the anterior interosseous nerve included a smaller nerve diameter, smaller cross-sectional area of fascicles, fewer fascicles and axons, but a similar axon density. The histomorphometric inferiority of the anterior interosseous nerve raises a question about whether it should be transferred only to selected parts of the deep motor branch of the ulnar nerve. Level III.