

## Surgical Anatomy of the Radial Nerve and Profunda Brachii Artery within the Triangular Interval

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### SUMMARY

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*Introduction:* To date, only scant data has been reported regarding the anatomy of the radial nerve and profunda brachii artery and their relationships while within the triangular interval of the posterior arm. As this area has recently gained attention for using motor branches of the triceps muscle for nerve transfers, the present study was conducted.

*Materials and Methods:* Fifteen adult cadavers (30 sides) underwent dissection, observation and quantitation of their triangular intervals and its contents. The relationship between the profunda brachii and radial nerve in the proximal one half and distal one half of this area was documented.

*Results:* The length of the triangular interval had a mean of 6 cm and the width of this area was on average 2.5 cm. Within the triangular interval, we identified on average, 2.5 arterial branches and 2.3 nerve branches from the profunda brachii and radial nerve, respectively. The maximal number of branches of either the artery or nerve within this geometric region was five. In the proximal one half of this area, 75% of the arteries were found anterior to the radial nerve whereas in the distal one half of the interval most nerves were flanked by arterial branches on both medial and lateral sides. Not all branches of the profunda brachii artery were muscular in this region as some were found to supply the adjacent radial nerve. Communication between the profundi brachii artery in the triangular interval and the posterior humeral circumflex artery was found on two left sides (6.7%).

*Conclusions:* We hope that these anatomical data may be useful to the surgeon who utilizes branches of the proximal radial nerve for neurotization procedures or branches of the profunda brachii for flap procedures.