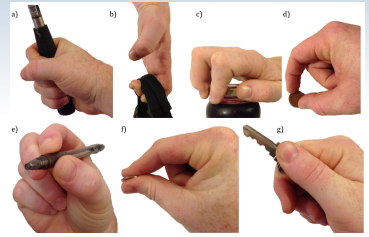
Recognising anatomical variance in median nerve lesions and the effect on hand function and potential treatments

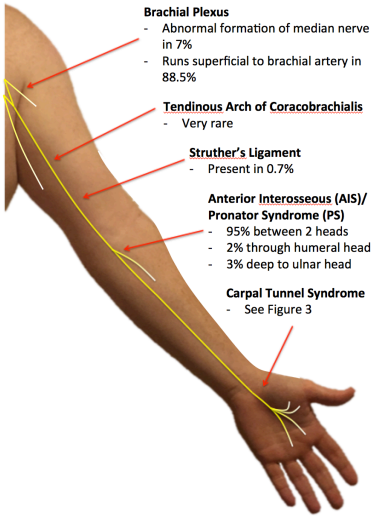
Bassett JW[1,2], Chan S[1], Sharma E[1], Dias RG[1,2]

[1]Royal Wolverhampton Hospital NHS Trust, UK [2]University of Birmingham, UK

Introduction – Hand function is maintained by an interplay between the median, ulnar and radial nerves and their branches. The median nerve is especially important for fine motor skills. There is much anatomical variation relating to the median nerve and a complete understanding will help treating patients appropriately.

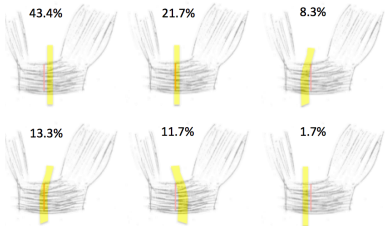
Methods – Human grips were assessed and broken down to fully assess their anatomical basis. A literature review was carried out in order to determine anatomical variance relating to the median nerve as well as their treatments.





Results – Variation occurs throughout the median nerve course as seen in Figures 2 and 3. Treatment of AIS/PS and compression from Struther's ligament is controversial. Carpal tunnel syndrome is significantly more prevalent such that open carpal tunnel release is considered the gold standard.

Conclusion – The median nerve is fundamental to conserving normal hand function and a thorough understanding will help recognise anatomical variance to guide treatment decisions.



References

[1] Demircay, E., Civelek, E., Cansever, T., Kabatas, S., Yilmaz, C (2011) Anatomic variations of the median nerve in the carpal tunnel: a brief review of the literature. **Turk Neurosurg**, 21: 388–396

[2] Pandey, S.K., Shukla, V.K. (2007) Anatomical Variations of the Cords of Brachial Plexus and the Median Nerve. **Clin Anat**, 20: 150–56

[3] Sudarshan, B.K.G., Shubha, R., Mekala, D., Lalitha, C., Jeyanthi, K. (2013) Relation of median nerve to brachial artery: variations, embryological basis and clinical significance. **J Dent Sci**, 9: 56-59

[4] Camerlinck, M., Vanhoenacker, F.M., Kiekens, G. (2010) Ultrasound demonstration of Struthers' ligament. **J Clin Ultrasound**, 38: 499–502

[5] Schuenke, M., Schulte, E., Schumacher, U. (2010) **Thieme Atlas of Anatomy - General Anatomy and Musculoskeletal System**. 1st ed. Stuttgart: Georg Thieme Verlag

[6] Verdugo, R., Salinas, R., Castillo, J., Cea, J.G. (2008) Surgical versus non-surgical treatment for carpal tunnel syndrome (Cochrane Review). **Cochrane DB Syst Rev**, 4: CD001552