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C5 PALSY AFTER ACDF: TOPOGRAPHIC CORRELATION WITH CHASSAIGNE'S TUBERCLE (C6)? A FRESH CADAVERIC STUDY

Introduction/Aim

Our aim was to explore the possible topographic correlation of C5 nerve root with regards to its course and regional relation to C6 tubercle. We hypothesised that etiologic mechanisms proposed thus far in the current literature although may have some plausible explanation, however they still cannot explain why C5 and not any other adjacent level suffer a post-operative palsy.

Materials and Methods

Fresh cadaver had extensive layer by layer dissection performed by 2 surgeons (one of whom has extensive experience as an anatomy demonstrator and dissector). Roots of Brachial plexus were exposed in relationship cervical transverse processes. Photographs were taken at each stage of the exposure.

Results

We observed a close relation of path of C5 root with the C6 tubercle bilaterally, moreover we noted a sharper decent of C5 in comparison with the other adjacent roots.

Discussion

Sharper angle of C5 nerve root, variations in intra-operative neck position and shoulder pull may play a role in predisposing the nerve root to neuropraxia against this most prominent lateral cervical boney element.

Conclusion

We speculate that C5 nerve palsy may be related to the close association of the C5 nerve with Chassaigne's tubercle (C6). We would suggest a closer analysis of the C5 nerve in this region using finite element analysis with emphasis on the close proximity of the nerve and changes due to cervical motion.