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Are Retropharyngeal Parathyroid Adenomas Associated with Retropharyngeal Carotid Arteries?

We read with interest the article by Steinl et al[1] discussing the simultaneous detection of retropharyngeal carotid arteries (CAs) and parathyroid adenomas in 5 patients. At our institution, we also perform 4D-CT for hyperparathyroidism and routinely highlight the presence of a retropharyngeal CA in the report to alert the operating surgeon. We agree with the authors that such a description is vital in preventing catastrophic hemorrhage, either during intubation or parathyroidectomy.

However, unlike the authors, we assess the position of the CA in relation to an uncovertebral joint and label the artery as retropharyngeal only when it lies medial to the joint. Our evaluation of the CA position is based on the methodology used by Koreckij et al.[2] The classification used by Pfeiffer and Ridder[3] involves taking 1 measurement on each side at the level of the nasopharynx, oropharynx, and hypopharynx, amounting to a total of at least 6 values for both CAs and potentially even more if the distances are measured for both the common and internal carotid arteries. Being affiliated with an academic institute, we find that using the uncovertebral joint is more reproducible across varying levels of training, ranging from the first-year resident to the advanced neuroimaging fellow.

Regarding the association between retropharyngeal parathyroid adenomas and medially displaced CAs, there are several confounding factors that can potentially render the association spurious. All patients discussed in the report of Steinl et al[1] were women, and 4 of 6 were older than 60 years of age. Studies have shown a higher prevalence of retropharyngeal CAs in both women and the older population. Koreckij et al[2] found a statistically significant correlation between female sex and retropharyngeal carotid deviation. Likewise, most patients studied by Pfeiffer and Ridder[3] were older than 60 years of age. Some authors even question whether medial deviation of the CAs is entirely age-related.[4] Atherosclerosis and hypertension are also important associations in retropharyngeal carotid deviation.[4] The status of atherosclerotic and hypertensive disease in the 5 cases discussed by Steinl et al[1] is unknown. Coincidentally, the retropharynx is also a common location for ectopic superior parathyroid adenomas.

To summarize, although we agree that there may still be a theoretic embryologic link between retropharyngeal CAs and parathyroid adenomas, we believe that the reader should be aware of the important confounding factors listed above. We also suggest using the uncovertebral joint as an anatomic landmark in routine clinical practice for its ease, speed, and reproducibility.

REFERENCES

1. Steinl GK, Yeh R, McManus CM, et al. **Variations in the course of the carotid arteries in patients with retropharyngeal parathyroid adenomas.** *AJNR Am J Neuroradiol* 2021;42:749–52 CrossRef Medline
2. Koreckij J, Alvi H, Gibly R, et al. **Incidence and risk factors of the retropharyngeal carotid artery on cervical magnetic resonance imaging.** *Spine (Phila Pa 1976)* 2013;38:E109–12 CrossRef Medline
3. Pfeiffer J, Ridder GJ. **A clinical classification system for aberrant internal carotid arteries.** *Laryngoscope* 2008;118:1931–36 CrossRef Medline
4. Del Corso L, Moruzzo D, Conte B, et al. **Tortuosity, kinking, and coiling of the carotid artery: expression of atherosclerosis or aging?** *Angiology* 1998;49:361–71 CrossRef Medline

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