Vagus Nerve Schwannoma

Epidemiology

Schwannoma arising from the vagus nerve is an uncommon (2–5%) benign nerve tumour.

Vagal Nerve Schwannomas are usually confined to the retrostyloid parapharyngeal space, although patients with schwannomas that extend into the posterior cranial fossa through the jugular foramen have been reported

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Schwannomas arising from the vagus nerve are extremely rare in children, with only 16 cases reported in the world literature [1].

Clinical features

They usually presents as an asymptomatic slow growing mass [2].

Most cases of schwannomas manifest between the third and sixth decades of the patient's life as a slow growing firm, painless mass in the lateral neck. Hoarseness, pain, or cough may be the presenting complaints. They displace the carotid arteries anteriorly and medially, jugular vein laterally and posteriorly. These swellings are mobile transversely but not vertically [3].

Diagnosis

Diagnosis is based on clinical suspicion and confirmation obtained by means of surgical pathology.

Differential diagnosis

Schwannomas of the vagus nerve must be differentiated from the carotid body and glomus vagale tumors because the distinction may influence treatment planning.

Treatment

Surgical excision is the treatment of choice for vagal schwannoma, with recurrence being rare.

A combination of continuous and intermittent IONM can be used to preserve vagal laryngeal innervation and function and may represent the future standard of care for vagal schwannoma excision [4].

In a case report, vagal sensory fibers were mapped and continuously monitored intraoperatively during high vagus schwannoma resection using the laryngeal adductor reflex (LAR). Mapping of nerve fibers on the schwannoma surface enabled identification of sensory fibers. Continuous LAR monitoring during schwannoma subcapsular microsurgical dissection enabled sensory (and motor) vagal fibers to be monitored in real-time with excellent postoperative functional outcomes [5].

Outcome

Nerve damage during surgical resection is associated with significant morbidity [6].

This tumour most often presents as a slow growing asymptomatic solitary neck mass, which rarely undergoes malignant transformation.

Literature review

In a comprehensive literature review on 197 articles reporting 235 cases of cervical vagal schwannomas. Presenting symptoms, treatment approach, and postoperative outcomes were recorded and analyzed.

Vagal schwannomas commonly present as asymptomatic neck masses. When they become symptomatic, surgical resection is the standard of care. Gross total resection is associated with higher postoperative morbidity compared to subtotal resection. Initial reports using intraoperative nerve monitoring have shown improved nerve preservation. Recurrence rates are low.

The combination of intermittent nerve mapping with novel continuous vagal nerve monitoring techniques may reduce postoperative morbidity and could represent the future standard of care for vagal schwannoma treatment [7].

Case series

Vagus Nerve Schwannoma case series.

Case reports

Vagus Nerve Schwannoma case reports.

References

[1]
Mierzwiński J, Wrukowska I, Tyra J, Paczkowski D, Szcześniak T, Haber K. Diagnosis and management of pediatric cervical vagal schwannoma. Int J Pediatr Otorhinolaryngol. 2018 Nov;114:9-14. doi:

10.1016/j.ijporl.2018.08.021. Epub 2018 Aug 23. PubMed PMID: 30262374.

2) Ramdass AA, Yao M, Natarajan S, Bakshi PK. A Rare Case of Vagus Nerve Schwannoma Presenting as a Neck Mass. Am J Case Rep. 2017 Aug 21;18:908-911. PubMed PMID: 28824161; PubMed Central PMCID: PMC5574523.

3) https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3227827/

4) 6) Sandler ML, Sims JR, Sinclair C, Ho R, Yue LE, Téllez MJ, Ulkatan S, Khorsandi AS, Brandwein-Weber M, Urken ML. A novel approach to neurologic function sparing surgical management of vagal schwannomas: Continuous intraoperative nerve monitoring of the laryngeal adductor reflex. Head Neck. 2019 Sep;41(9):E146-E152. doi: 10.1002/hed.25793. Epub 2019 May 6. PubMed PMID: 31058386.

5) Sinclair CF, Téllez MJ, Sánchez Roldán MA, Urken M, Ulkatan S. Intraoperative mapping and monitoring of sensory vagal fibers during vagal schwannoma resection. Laryngoscope. 2019 Dec;129(12):E434-E436. doi: 10.1002/lary.28147. Epub 2019 Jun 18. PubMed PMID: 31211430.

7) Sandler ML, Sims JR, Sinclair C, Sharif KF, Ho R, Yue LE, Téllez MJ, Ulkatan S, Khorsandi AS, Brandwein-Weber M, Urken ML. Vagal schwannomas of the head and neck: A comprehensive review and a novel approach to preserving vocal cord innervation and function. Head Neck. 2019 Jul;41(7):2450-2466. doi: 10.1002/hed.25758. Epub 2019 Apr 7. Review. PubMed PMID: 30957342.