



A “Nerve-ous “ Predicament

AAES Interesting Case Presentation
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DISCLOSURE

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Nothing to disclose



CLINICAL COURSE

44 y.o. F presents with a 1.3 cm right isthmus nodule which she initially noticed.

Surgeon performed ultrasound - 2.5 cm left thyroid nodule, 1.5 cm lymph node (LN) anterior to left carotid artery and medial to internal jugular (IJ) vein

PMHx - Left cervical lymphoma in supraclavicular LN treated with chemo-radiation 23 years ago

FamHx - negative for thyroid problems or cancer

FNA of isthmus nodule revealed papillary thyroid cancer, left lobe nodule was a follicular lesion unknown significance (FLUS), FNA of left cervical LN was acellular

Surgery planned - minimally invasive total thyroidectomy with central neck LN dissection (CLND)

SURGERY

- Intraoperatively - noted loss of right recurrent laryngeal nerve (RLN) function
 - Nerve was tortuous and more mobile to traction.
 - Course of RLN traced and was visually intact.
 - Traction injury likely at laryngeal entry point.

Now what?

- Decision made not to proceed with left side.
- Right thyroid lobectomy with isthmusectomy and R CLND performed.
- POD # 4- laryngoscopy demonstrated right vocal cord paralysis. This improved by one month postop and laryngoscopy demonstrated complete resolution at 3 months.
- Pathology - 4 benign LN
- Planned for staged completion left thyroid lobectomy with ipsilateral CLND.

SURGERY

- Second operation 3 months later revealed a 2 cm nodule anterior to left lower carotid artery and medial to L IJ vein.
- This correlated to LN previously seen on ultrasound.
- This nodule had an interesting property.



INTRAOPERATIVE FINDING



NOW WHAT?

- Stimulation of the nodule resulted in positive left vocal cord contraction.
- This indicated the mass was continuous with the vagus nerve.
- Neurosurgery was consulted intraoperatively.
- Biopsy was safely performed in area where nodule did not stimulate, at posterior/inferior aspect. This was done without compromising nerve function.
- Frozen section- benign neural tumor
- Decision made not to resect mass to avoid vagal nerve injury, since patient asymptomatic.
- Surgery completed without complication, patient had typical postop course.

CLINICAL COURSE CONT'D

Final pathology demonstrated no cancer in left lobe or lymphatics.

Final Diagnosis?

- Vagal nerve schwannoma-
rare slow growing, typically asymptomatic, 2-5%
benign neurogenic tumors.

DISCUSSION

KEY TEACHING POINTS

- Case involved 2 difficult operative decisions-
 - First -whether to stage a thyroid cancer operation following evidence of neuropraxia injury.
 - Second- whether to attempt resection of a vagal nerve schwannoma.
- Staged completion thyroidectomy is an important strategy to avoid simultaneous bilateral RLN injury.
- Use of intraoperative nerve monitoring can detect neuropraxia injury in an otherwise visually intact nerve.

KEY TEACHING POINTS

- Vagal nerve tumors are rare but can be found unexpectedly during surgery of the central and lateral neck:
 - Neurofibroma- unencapsulated neural sheath tumor, often multiple. In series of 35 patients at Mayo clinic, accounted for 14% vagal nerve neoplasms
 - Schwannoma- ~25%-40% in head and neck region, encapsulated benign slow growing neural sheath tumor. Accounted for 31% vagal nerve neoplasms same series.
 - Paraganglioma- overall < 1% head and neck tumors. Constituted 50% of vagal nerve neoplasms same series.
- It is important to have awareness of this in evaluating neck masses. Preoperative diagnosis is challenging as they can frequently be mistaken for a lymph node, branchial cyst, thyroid nodule as reported in multiple case series.
- These are typically benign and slow growing. Surgical enucleation is an option, but can be observed if patient is asymptomatic.

Thank you!