

A Rush of Adrenaline and a Broken Heart

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Introduction

- Paragangliomas are norepinephrine secreting neuroendocrine tumors arising from autonomic ganglia. Diagnosis requires a high index of suspicion as they can mimic other tumors.

Case Presentation

- Prior to admission**
- 76 year old female with backache
 - History of hypertension, cervical cancer
 - On multiple antihypertensive medications
 - Enlarged, PET positive paraaortic lymph node

- Biopsy**
- Biopsy to rule out metastatic cervical cancer revealed “lymph node” was a paraganglioma.

- Initial Presentation**
- Left flank and midsternal chest pain 5 days post biopsy
 - Hypertensive emergency: 215/130 mmHg

- Days 1-4**
- Intubated for pulmonary edema and shock
 - Angiogram suggested diagnosis of Takotsubo cardiomyopathy with ejection fraction <20%

- Days 5-7**
- Sustained hypertension beginning day 5
 - Shock, multi organ failure, death on day 7

Diagnostic Tests and Imaging

Diagnostic Tests

Coronary angiogram	Normal coronaries, apical akinesis with ballooning
Troponin [0.0-0.045 ng/mL]	8.31 ng/mL
Plasma metanephrines [0-62 pg/mL]	116 pg/mL
Plasma normetanephrines [0-145 pg/mL]	3874 pg/mL

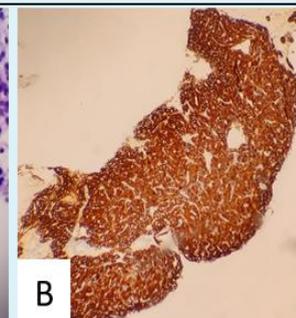
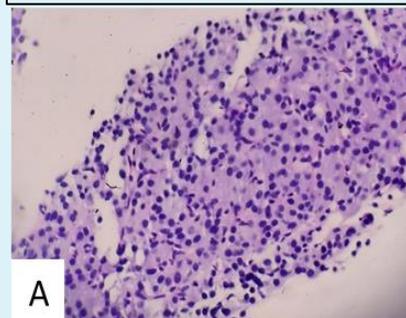
Pre-Biopsy



Post-Biopsy



A: Lumbar MRI showing enlarged para-aortic “lymph node.”
B: Abdominal CT showing hemorrhagic collection (4.3 x 2.3 cm) adjacent to biopsied “lymph node.”



A: Photomicrograph (H-E stain) showing polygonal cells with a nested “Zellballen” pattern.
B: Positive synaptophysin stain

Discussion

- Most paragangliomas are benign and arise at aortic bifurcation.
- Most are sporadic, but may be associated with genetic diseases such as MEN2A/2B, Von Hippel Lindau.
- Plasma metanephrines are useful for diagnosis.
- Biopsy is contraindicated, as it can lead to catecholamine surge.
- Takotsubo cardiomyopathy is a rare complication.

Conclusion

- Nodule near aortic bifurcation could be a paraganglioma especially with uncontrolled hypertension.
- Biochemical tests should be done first before attempting a biopsy.

References

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- Ikram, A. and Rehman, A., 2021. *Paraganglioma.* [online] Ncbi.nlm.nih.gov. Available at: <https://www.ncbi.nlm.nih.gov/books/NBK549834/>