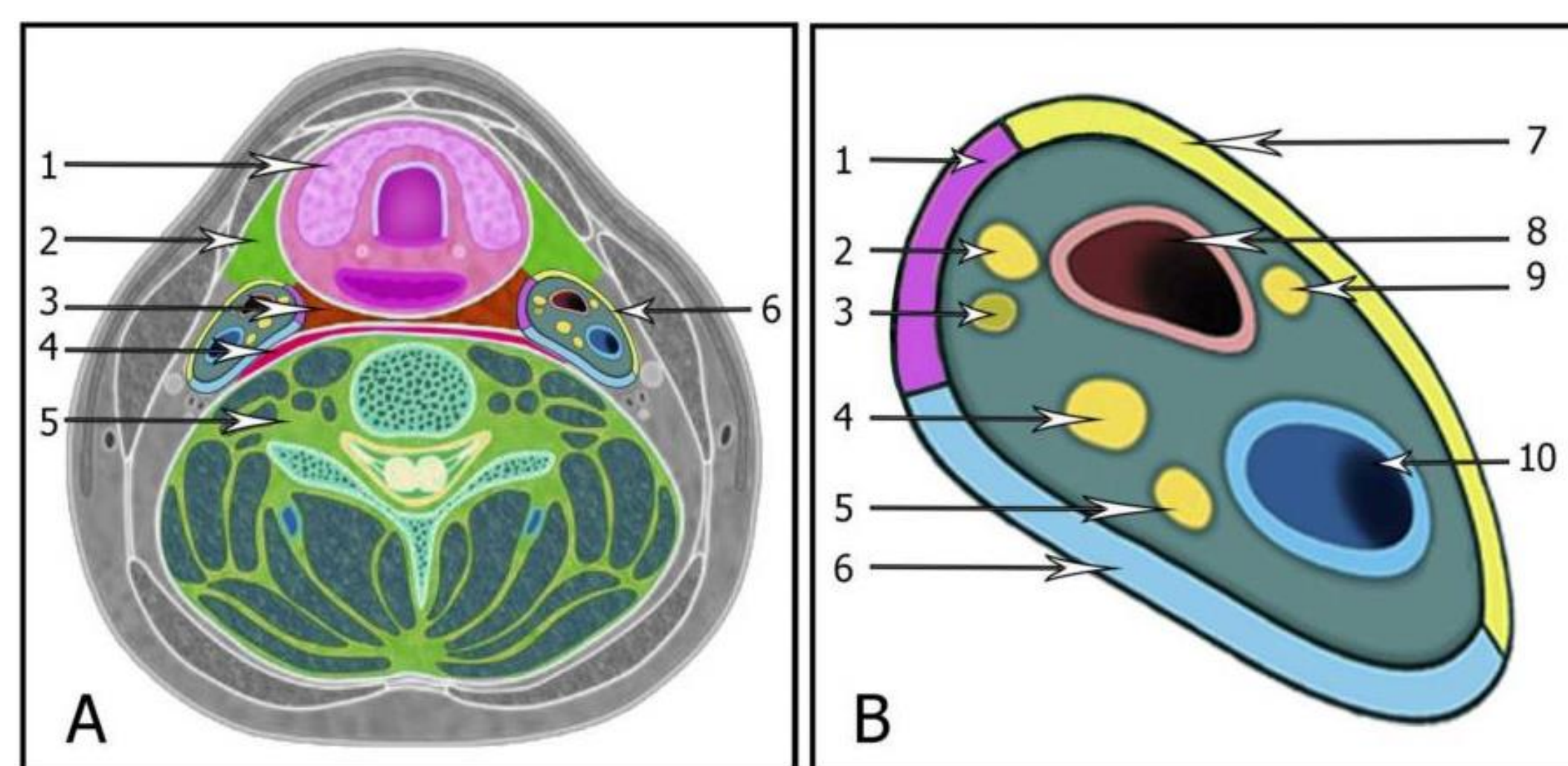


Introduction

A complicated presentation of a suspected paraganglioma in the setting of a traumatic fall in an elderly gentleman who had found no relief after 35 years of evaluation and treatment by several providers.



A: The carotid space related to the neck cavities. (1) Pharyngeal mucosal space, (2) Anterior cervical and masticator spaces, (3) Retropharyngeal space, (4) Lateral retropharyngeal and Danger spaces, (5) Perivertebral space, (6) Carotid space.

B: Illustration demonstrating the contents and configuration of the left carotid space. (1) Middle layer fascia, (2) Cranial nerve XII, (3) Sympathetic trunk, (4) Cranial nerve X, (5) Cranial nerve XI, (6) Deep layer fascia, (7) Superficial layer fascia, (8) Carotid artery, (9) Cranial nerve IX, (10) Jugular vein. [1]

Case Presentation

A 77 year old man presented in 2016 with 35 years of neck pain as a referral from a neurosurgeon for evaluation of chronic right-sided neck pain. In 1981, the patient was struck in the head with a 90lbs roof hatch, and then subsequently fell from an 18' ladder to the ground. Since that time, he had experienced persistent neck pain and spasms with radiation to the right side of his head which was worse with cervical flexion and lessened when laying supine. The pain is associated with daily headaches and intermittent episodes of concomitant R. eye pain. He endorses sleep difficulty, but denies any subjective weakness, numbness, or tingling. The patient reported limited improvement with PT, chiropractors, rolfing, acupuncture, medications (oral and topical), and injections (occipital nerve block and trigger point injections). His exam was notable for significant right-sided muscle tenderness (occipital, upper trapezius, cervical paraspinal, and sternocleidomastoid) without neurologic deficits. An MRI demonstrated left-sided cervical spondylosis. 3 years after initial presentation, his pain became less controlled and there was more pronounced neck tenderness and swelling. An updated MRI revealed a 1.6x1.3x2.4cm circumscribed mass in the right carotid space which had increased in size compared to prior imaging. He was subsequently referred to ENT for evaluation.

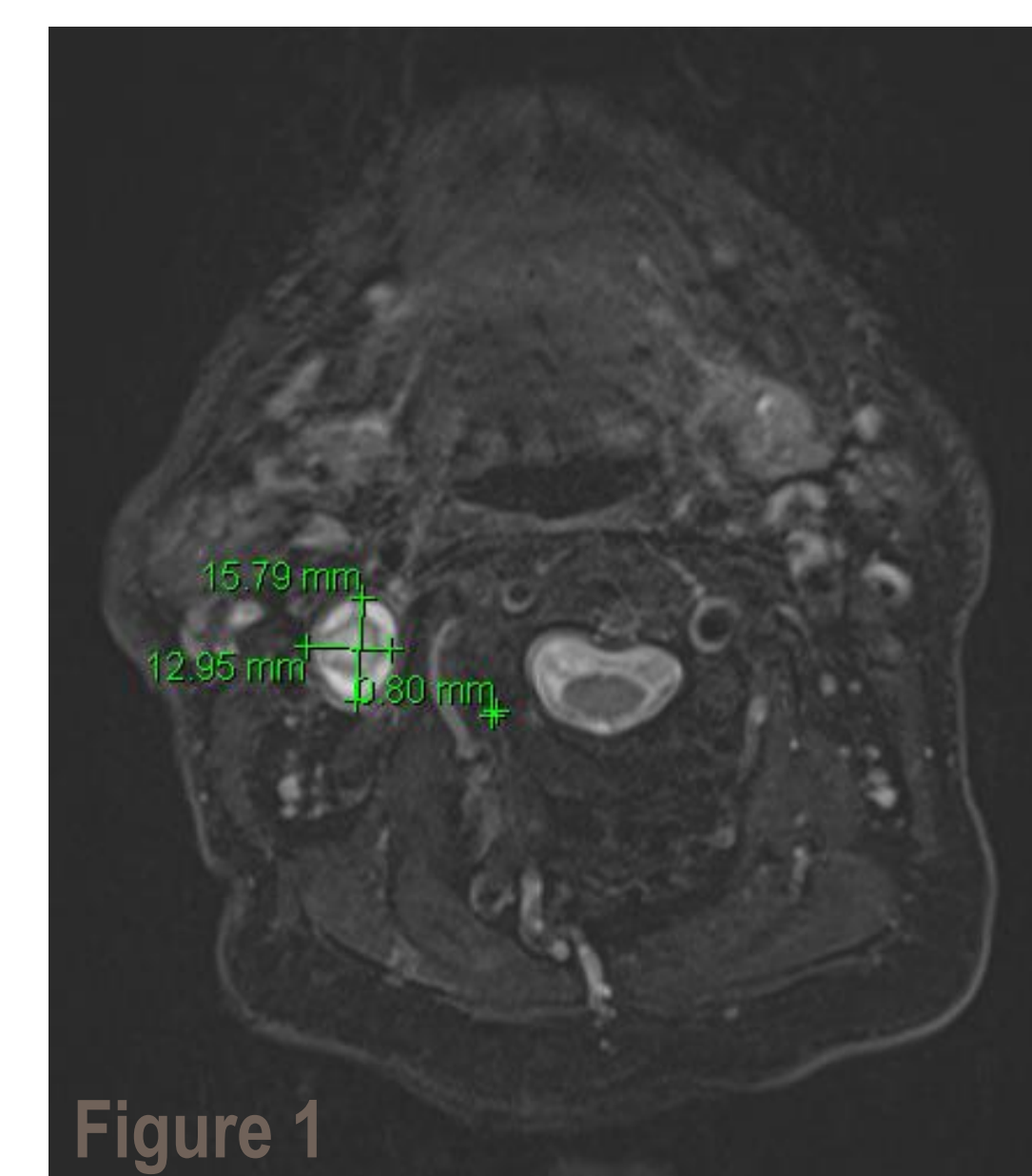


Figure 1- Axial view of MRI with a circumscribed, hyperintense mass in the right carotid space with measurements.

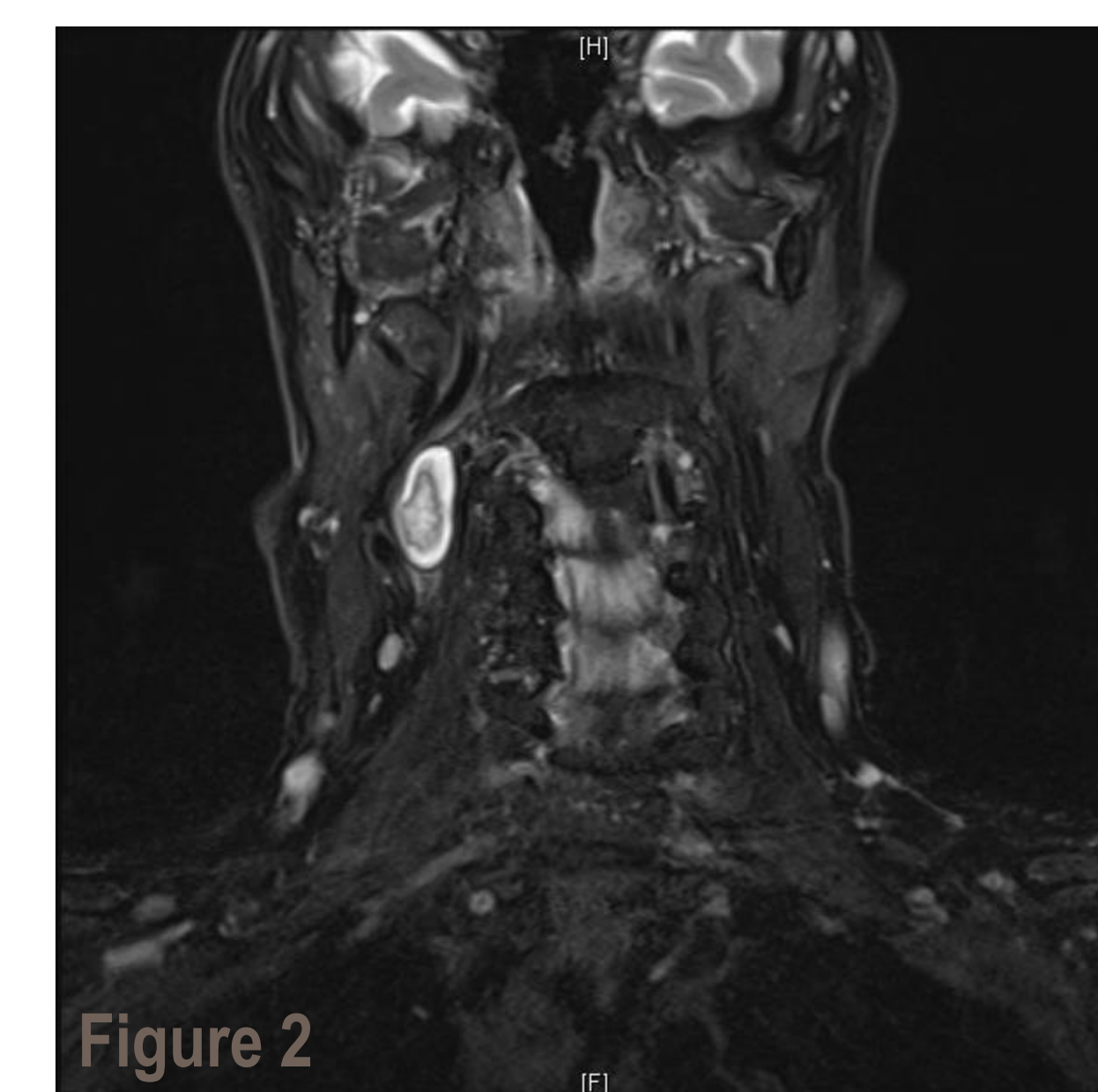


Figure 2- Coronal view of MRI with a circumscribed, hyperintense mass in the right carotid space.

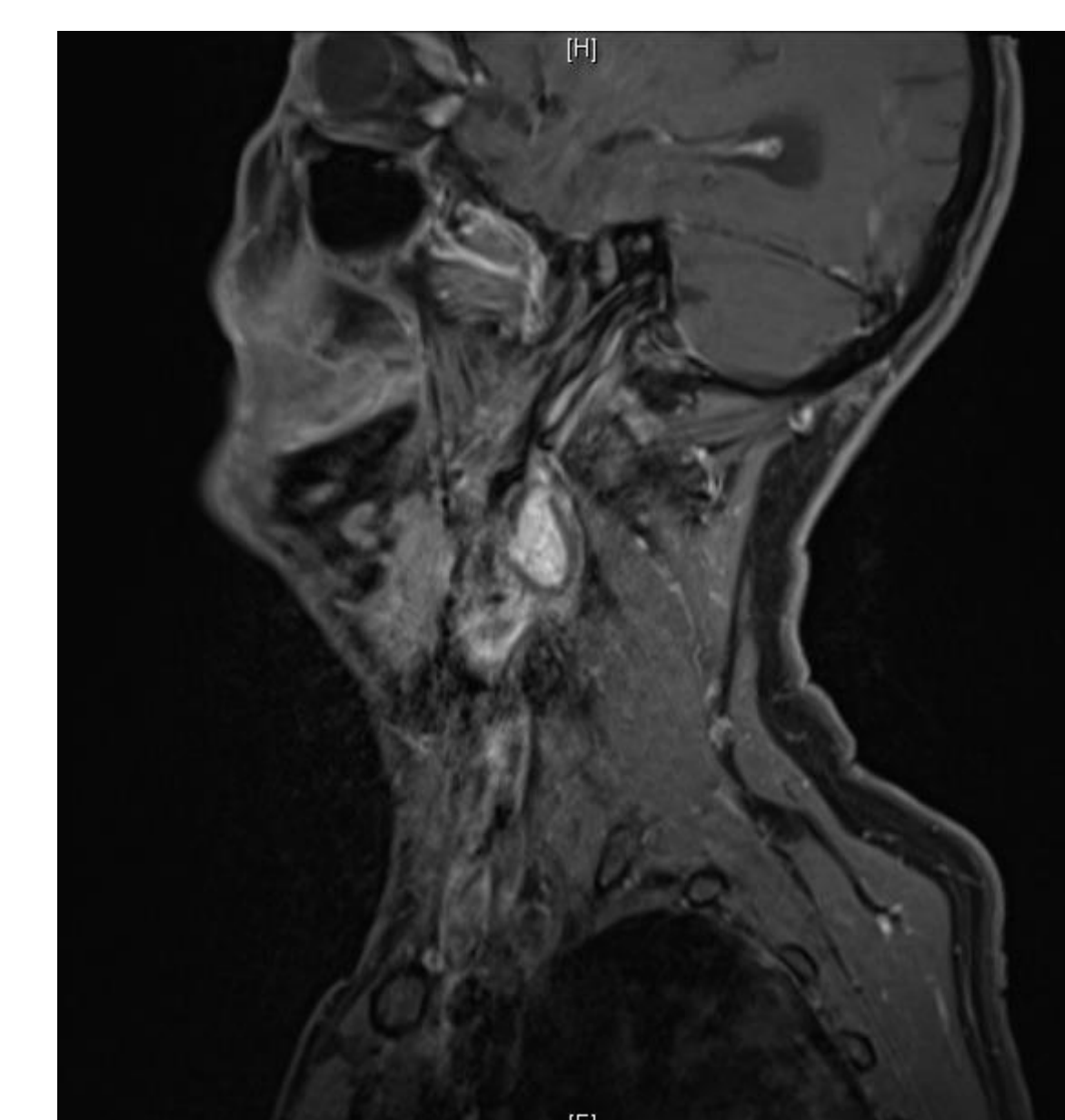


Figure 3- Sagittal view of MRI with a circumscribed, hyperintense mass in the right carotid space.

Discussion

The differential for neck masses is diverse ranging from congenital to acquired, infectious to neoplastic, and benign to malignant. The location of the tumor also plays a major role and in this case, focusing on benign tumors in the region of the carotid body narrows the differential to paraganglioma, nerve sheath tumors, and lipomas [2]. Carotid Body Tumors are often synonymous with paragangliomas [1]. They are (mostly) benign (<10% malignancy incidence), slow-growing, neuroendocrine tumors typically noticed incidentally on inspection/palpation or on imaging [1]. These tumors are typically found in females (male:female 1:1.9) between 50 and 70 years old [1]. When symptomatic, it is a result of pressure and invasion of surrounding tissue resulting in pain and variable neurologic deficits depending on nerves involved [1].

Conclusions

This case demonstrates the importance of maintaining a wide differential when addressing neck pain. Although the patient's history suggested a traumatic origin of neck pain, imaging studies did not correlate with his examination findings. In fact, his facet arthropathy was noted on the asymptomatic side. His symptomatic progression, and lack of response to prior management, likely paralleled the growing carotid body mass rather than injury and resulting degeneration. Additionally, his painful sternocleidomastoid spasms corresponded with the location of the tumor. Although rare, neck masses can present in this atypical manner. Therefore, when a patient is not responding to treatment as anticipated, it is important to reconsider the differential rather than opting for more invasive therapeutic measures.

References

1. Hoang VT, Trinh CT, Lai TAK, Doan DT, Tran TTT. Carotid body tumor: a case report and literature review. J Radiol Case Rep. 2019;13(8):19-30. eng.
2. Chengazi HU, Bhatt AA. Pathology of the carotid space. Insights Imaging. 2019;10. PMID: PMC6377693. eng.

