

Mediastinal Paragangliomas: Imaging Features

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INTRODUCTION

Mediastinal paragangliomas are extremely rare, slow-growing neuroendocrine tumors arising from extra-adrenal paraganglionic tissue. Most paragangliomas are asymptomatic. They present a diagnostic challenge due to their nonspecific clinical presentation and overlapping imaging features with other hypervascular mediastinal lesions. Imaging modalities, particularly CT and MRI, play a key role in their identification, enabling assessment of vascularity, lesion delineation, and relationships to adjacent structures. Mediastinal paragangliomas appear as well-defined soft tissue masses with intense contrast enhancement on CT due to their hypervascularity. On MRI, they demonstrate intense enhancement on post-contrast T1-weighted fat-suppressed images and increased T2 signal intensity with a characteristic “salt-and-pepper” appearance, reflecting intermixed areas of high signal intensity due to slow flow or hemorrhage (“salt”) and signal voids from high-flow intratumoral vessels (“pepper”).

PURPOSE

To present the characteristic imaging features of mediastinal paragangliomas on CT and MRI and to emphasize the importance of a multimodal approach in differential diagnosis.

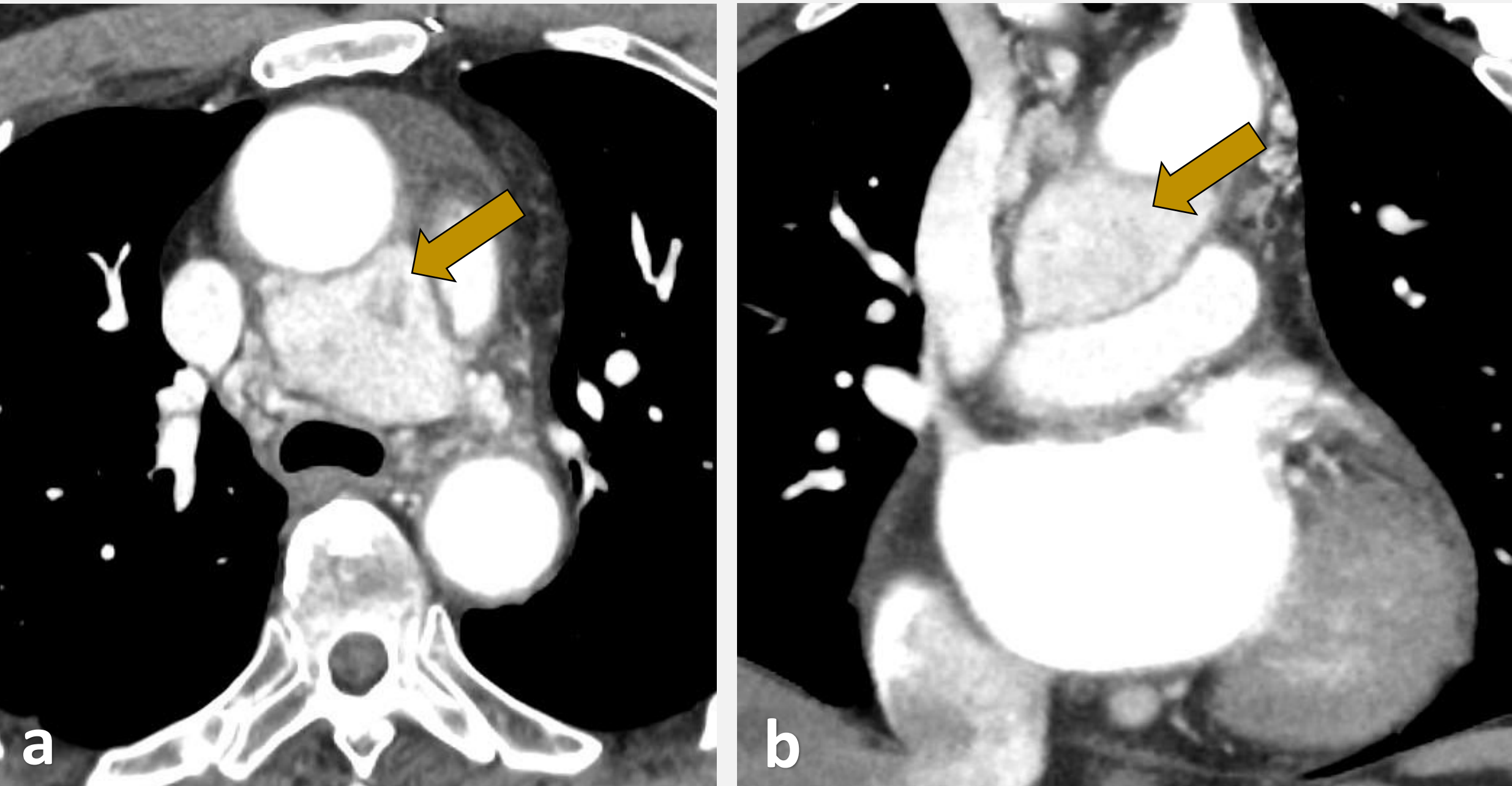


Fig. 1: (a) axial and (b) coronal arterial-phase contrast-enhanced CT image.

CASE PRESENTATION

As an illustration, we present the case of an 84-year-old patient with a known jugular paraganglioma, clinically manifesting as unilateral hearing loss and gait disturbance. During imaging evaluation, a well-defined, hypervascular lesion in the mediastinum was incidentally detected, without associated clinical symptoms.

Further investigations (CT and MRI) demonstrated a stable lesion size without signs of invasion into adjacent structures, supporting the diagnosis of a paraganglioma.

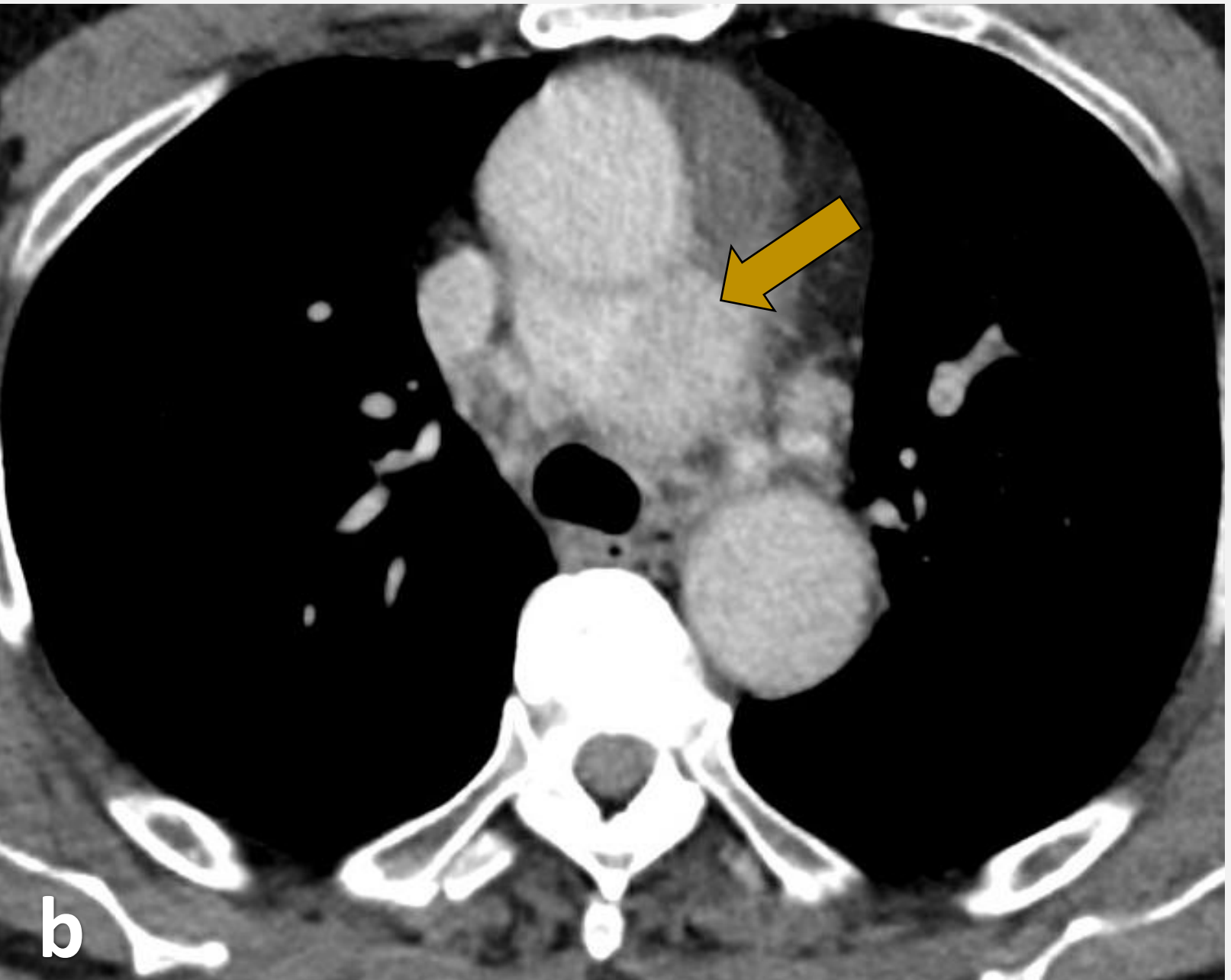
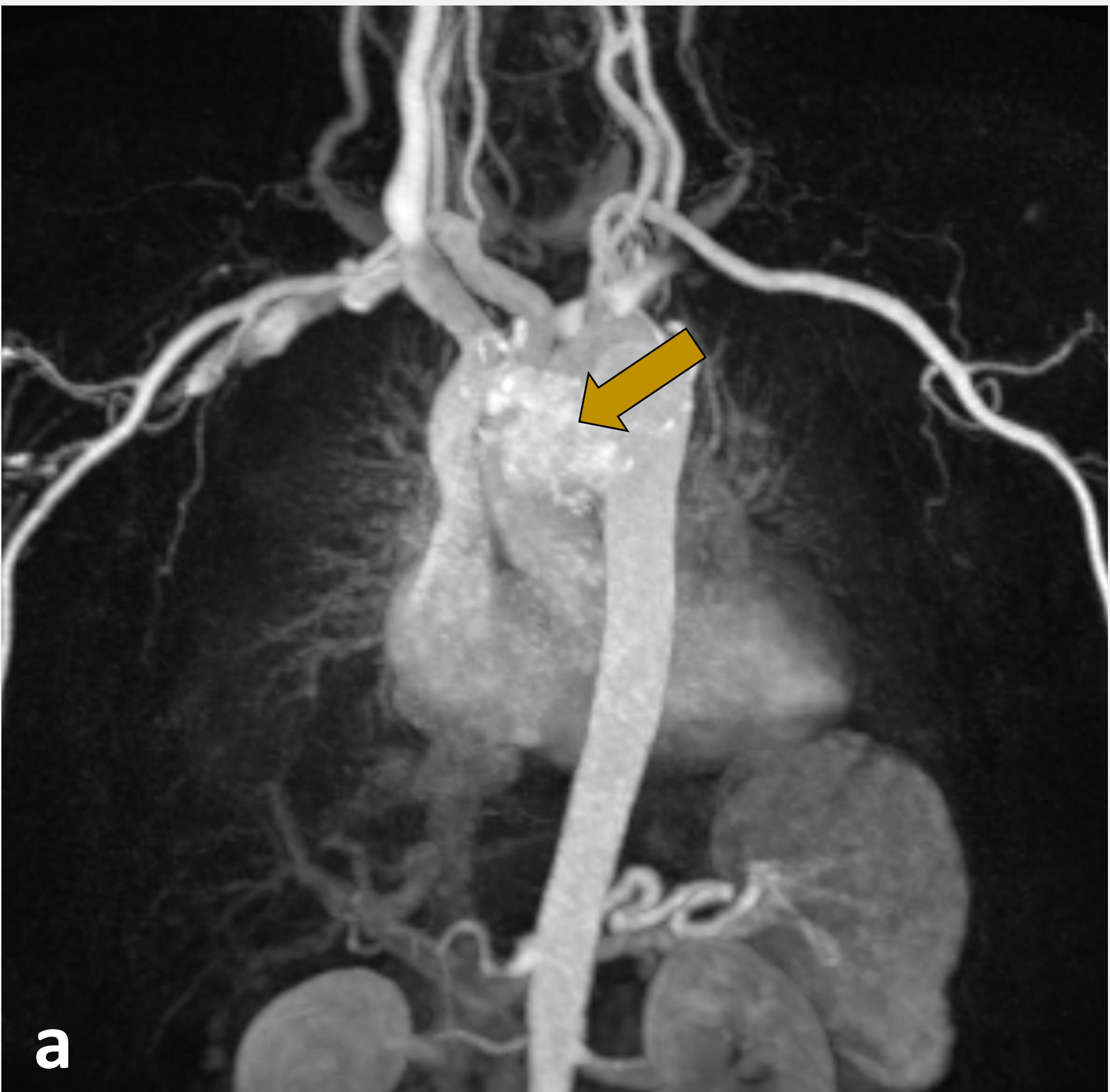


Fig. 2: (a) time-resolved MR angiography (TWIST) demonstrating marked tumor hypervascularity, (b) axial venous-phase contrast-enhanced CT image.

CONCLUSION

Familiarity with the typical imaging characteristics of mediastinal paragangliomas allows their inclusion in the differential diagnosis of hypervascular mediastinal lesions and may reduce the need for invasive diagnostic procedures.

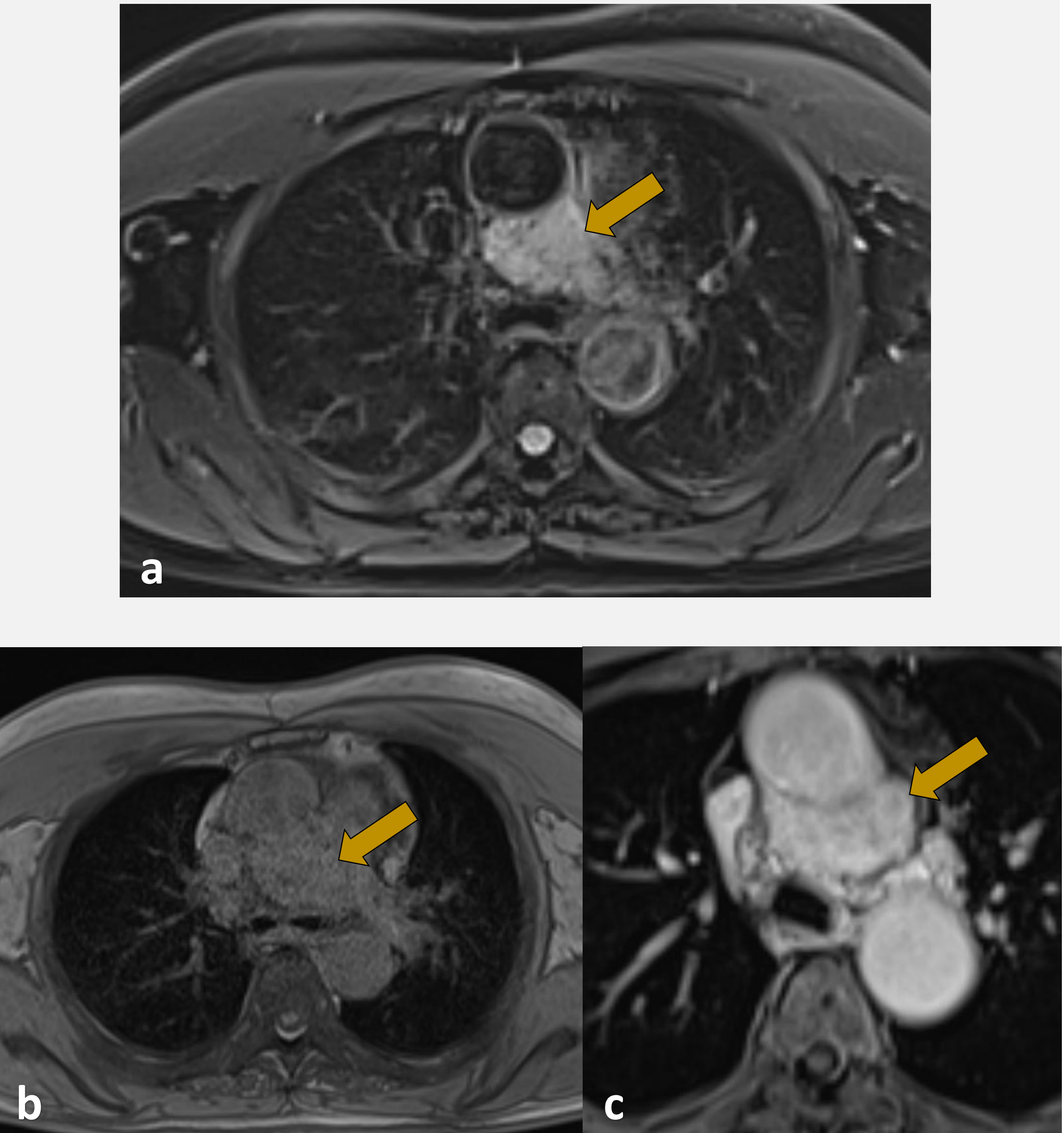


Fig. 3: MRI findings (axial): (a) T2 fatsat, (b) T1-weighted image, (c) post-contrast T1-weighted image.