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# Adrenal

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## *Adrenal And Juxta-adrenal Schwannomas: A Single Center Study*

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**Objectives:** Adrenal schwannomas and juxta-adrenal schwannomas are rare tumors with limited data on clinical and radiologic features. We aimed to summarize the clinical, biochemical, and imaging characteristics of adrenal and juxta-adrenal schwannomas. **Methods:** We performed a single-center retrospective study of patients with a histopathologic diagnosis of adrenal or juxta-adrenal schwannoma between 1995-2022. **Results:** A total of 24 patients (18, 75% women) were diagnosed with either primary adrenal schwannoma (8, 33%) or a juxta-adrenal schwannoma (16, 67%) at a median age of 57 years (range, 27 - 77 years). Most tumors (21, 88%) were discovered incidentally on imaging, while 2 were diagnosed because of symptoms of mass effect, and 1 diagnosed incidentally on pathology during nephrectomy performed for renal cell carcinoma. None of the patients had a known genetic syndrome. The median time from identification of schwannoma on imaging to hormonal evaluation was 62 days (range, 0–2076 days). All tumors were unilateral, with 15 (62%) on the left and 9 (38%) on the right. At diagnosis, the median tumor size was 4 cm (range, 2 - 13 cm). Adrenal schwannomas were smaller when compared to juxta-adrenal schwannomas (median of 3.1 cm [range, 2 - 9 cm] vs 4.6 cm [range, 2.3 - 13.3 cm]) (P=0. 037). On imaging, the tumors were round or oval in shape in 16 (70%), lobulated in 7 (30%), solid in 15 (68%), solid-cystic in 7 (32%), heterogeneous in 14 (61%), and homogeneous in 9 (39%). Scattered or peripheral calcifications were seen in 2 cases. In 9 patients with available contrast-enhanced CT, all of the schwannomas demonstrated enhancement. The median unenhanced CT attenuation was 30 Hounsfield units (HU) (range, 12 - 38 HU). In 6 patients with available follow-up imaging of at least 6 months, median growth per year was 0.27 cm (range, 0 - 0.8 cm). Of the 20 patients who underwent complete hormonal testing, all had non-functioning tumors. Biopsy was performed in 5 (20%) patients and all were diagnostic of schwannoma. Adrenalectomy was performed in in 23 (96%) patients (laparoscopic in 16 [70%] and open in 7 [30%]). Open adrenalectomy was more common in patients with larger tumors (median size 7.5 cm; range, 2–13.3 cm) when compared to patients treated laparoscopically (median size 4 cm; range, 2.3–5.4 cm) (P=0. 041). Postoperatively, patients were followed clinically for a median of 1.7 years (range, 0-19 years) or radiographically (n=11) for a median of 2 years (range, 0. 01-11 years), without recurrence or new tumor development. **Conclusions:** Adrenal and juxta-adrenal schwannomas are nonfunctioning benign tumors that present with indeterminate radiographic features, including large tumor size and increased

unenhanced CT attenuation. We did not find an imaging phenotype that was diagnostic of schwannoma. The diagnosis of this rare tumor is based on biopsy or resection.

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