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Pheochromocytoma And Its Modern Clinical Phenotype: A Single Center Retrospective Review

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Abstract

Objective

To describe the presentation and biochemical properties of pheochromocytomas (PCCs) as a function of size and cause for workup, including those symptomatic with hypertension or paroxysmal episodes, with known genetic predisposition (GP), or with an incidental mass (IM) on imaging.

Design

Single-center retrospective study of surgical resections for suspected PCC between 1998 and 2018.

Results

Fifty-eight patients underwent surgery for suspected PCC. Of those, forty-four patients (75.9%) had 50 masses confirmed as PCC on pathology. The most common cause for workup in all patients undergoing surgery for suspected PCC was IM (38.6%), followed by symptoms (34.1%), and lastly GP (27.3%). The median PCC size on imaging was 3.35 cm (range, 0.1 cm to 12.2 cm). The median tumor size was greatest in patients worked up for symptoms, followed by IM and GP patients (4.1 vs 3.4 vs 2.25 cm, respectively $p = 0.176$). Unenhanced CT attenuation values were available for 20 PCCs with a median value of 36 Hounsfield Units (range 17 to 85). Symptom burden was greater in patients with masses >4cm who reported significantly more symptoms than patients with masses ≤4cm (3.2 vs 1.52 symptoms reported, respectively $p = 0.005$). Bilateral disease was more common in GP than symptomatic or IM patients (41.7% vs 13.3 vs 5.8%, respectively $p = 0.040$). Biochemical testing was available for 39 patients with PCC; all but one patient had evidence of biochemical activity. Total urine metanephrines were elevated in masses >4cm vs. those ≤4cm (7681 vs. 3339 mcg, $p = 0.108$).

Conclusion

Incidental adrenal masses are the most common cause of workup for PCC. Tumor size and number of symptoms reported were greatest in patients worked up for symptoms suspicious of PCC. Biochemical testing was positive in all but one PCC patient and larger masses correlated with higher total urine metanephrines.