A 1.6cm Androgen Secreting Ovarian Leydig Cell Tumor Evades Detection on Multiple Imaging Modalities

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Background: Leydig Cell Tumors can present with marked virilization and yet may evade detection with common imaging modalities. This is a case of a patient with hyperandrogenism due to a 1.6cm ovarian Leydig cell tumor that could not be detected on transvaginal ultrasound, contrast enhanced CT or MRI with contrast. Clinical Case: A 61-year woman presented with virilization. She had a history of a right-sided borderline serous ovarian tumor status post right oophorectomy 23 years prior to presentation and a hysterectomy 16 years prior to presentation. She followed up with gynecologic-oncology for several years but...
eventually stopped as her condition was stable. On re-presenting to establish care with a gynecologist she complained of increased hair growth on her face, abdomen and buttocks as well as hair loss on the front and top of her scalp. On exam, she was noted to have clitoromegaly with no palpable adnexal masses. Labs revealed total testosterone 398ng/dL (8-60ng/dL), free testosterone 9.15ng/dL (0.06–0.87ng/dL), 17-hydroxyprogesterone 204ng/dL (<51ng/dL) CA-125 of 6.2U/mL (<38.1U/mL) and DHEAS 23.1mcg/dL (18.9–205mcg/dL). Transvaginal ultrasound showed a left ovary of 3cc with no mass or abnormality. She was referred to endocrinology and a CT abdomen and pelvis with contrast was obtained that again showed no adnexal mass but was notable for a 7mm isoattenuating nodule in the left adrenal gland. Additional labs were obtained including 24 hour urinary cortisol and metanephrines, late night salivary cortisol and serum aldosterone and renin activity, all of which were within normal limits. Suspicion remained high for an ovarian source of the hyperandrogenism so a pelvic MRI with and without contrast was performed which showed a normal appearing left ovary measuring 2.3cm×4.2cm×1.8cm. She was referred to gynecologic-oncology and it was decided to proceed with a left oophorectomy. This was performed and the pathology revealed a 1.6cm Leydig cell tumor in the left ovary. Testosterone and 17-hydroxyprogesterone subsequently normalized when checked seven weeks post-op.

**Conclusion:** Leydig cell tumors are rare ovarian tumors often presenting with hyperandrogenism in postmenopausal patients and can be difficult to identify on imaging. A review of published case reports revealed 8 cases in which Leydig cell tumors ranging from 1.2cm to 4.6cm could be detected using one of the imaging modalities employed in this case. There were 9 reports of tumors ranging from 0.8cm to 2cm that evaded detection on imaging. When significant hyperandrogenism is present in a postmenopausal patient a strong suspicion for an ovarian source should be maintained even when imaging is apparently normal.

**Presentation:** No date and time listed