

CASE REPORT: LEYDIG CELL TUMOR LOCALIZED BY SELECTIVE OVARIAN VEIN SAMPLING (SOVS)

RD Dickerson, JM Putman, KR Pinto, SP Marynick, NG Diamond, AB Pinto

INTRODUCTION:

Rapidly progressive virilization with total testosterone levels greater than 200 ng/dL is suggestive of an androgen-producing tumor. These tumors, when originating in the ovary, account for less than 0.5% of ovarian tumors and are varied in their clinical presentation. We present a woman with rapidly progressive virilization with a normal pelvic exam and with minimal findings on transvaginal ultrasound. SOVS revealed increased testosterone levels localized to her left ovary. Based on the findings at SOVS, a laparoscopic left oophorectomy was performed.

ABSTRACT:

Objective:

To describe a patient with recent onset of rapidly progressive virilization, who was diagnosed with an androgen secreting tumor localized to the left ovary, based on findings on SOVS.

Methods:

A 32-year-old nulligravid woman presented with a four month history of increased growth of pigmented coarse hair limited to her face, abdomen and inner thighs, acne, deepening of voice, frontal balding all of which were confirmed on physical exam. No abdominal or pelvic masses were palpable and the clitoris measured 2.0 cm in length. Initial laboratory testing results were as follows: total testosterone (T) elevated at 615 ng/dL, free T at 87.3 ng/dL. DHEA-S, prolactin, TSH, fasting glucose, fasting insulin, urinary free cortisol and urinary aldosterone were normal. Pelvic ultrasound was normal as was CT of the abdomen and pelvis. An ovarian androgen-producing tumor was suspected. SOVS was performed under basal conditions. The total T level in the left ovarian vein was markedly elevated at 20,967 ng/dL and T level in the right ovarian vein was 1351 ng/dL.

Results:

At laparoscopy the right ovary appeared normal with few residual surface adhesions. The left ovary appeared mildly enlarged with no apparent tumor. A left oophorectomy with pelvic washings was performed based on the findings at SOVS. The resected ovary weighed 10gms and cut section revealed a 2.5 x 2.2 x 2.0cm well-defined tan pink mass. Histology revealed a Leydig cell tumor. Three months later, the total T was 11ng/dL. The patient reported a gradual resolution of her virilization.

Conclusion:

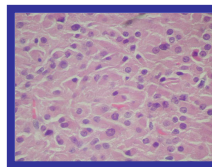
In patients presenting with rapid onset of virilization and elevated androgen levels, a diagnosis of an androgen secreting tumor should be suspected. Physical exam, coupled with biochemical tests and standard imaging studies should help localize the tumor. However, imaging studies may fail to localize a small tumor. SOVS may help in making an accurate diagnosis and in localizing the tumor. Because of the complications associated with SOVS, it should be restricted to appropriate cases and performed in a center with expertise in venous catheterization.

OBJECTIVE:

To describe a patient with recent onset of rapidly progressive virilization who was diagnosed with an androgen secreting tumor localized to her left ovary based on findings on SOVS.

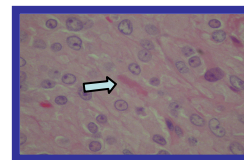
MATERIALS AND METHODS:

32-year-old female presents with four month history of increased pigmented hair growth on inner thighs, abdomen, and face, deepening of the voice, acne and frontal balding. These were confirmed on physical exam. No abdominal or pelvic masses were palpable. Total testosterone (T) was 615 ng/dL. DHEAS, prolactin, TSH, fasting glucose, fasting insulin, urinary free cortisol and urinary aldosterone were normal. Transvaginal sonogram revealed a multicystic right ovary measuring 3.8 x 3.4 x 1.8cm; left ovary measuring 3.8 x 2.1 x 3.9cm with a 2cm hypoechoic cyst. CT of abdomen and pelvis was negative. An androgen producing tumor was suspected and selective ovarian venous sampling was performed revealing total T in the left ovarian vein at 20,967 ng/dL and total T in the right ovarian vein was 1351ng/dL.



Leydig Cell Tumor.
Polygonal Cells with abundant eosinophilic cytoplasm (Haematoxylin and Eosin stain, 40X)

Arrow indicates Crystalloids of Reinke (Haematoxylin and Eosin stain, 100X)



RESULTS:

The finding of elevated testosterone production was localized to the left ovary by SOVS. A laparoscopic left oophorectomy with pelvic washings was performed. Histology revealed a Leydig cell tumor. The patient reported a gradual resolution of her virilization.

CONCLUSION:

In patients presenting with rapid virilization and elevated androgen levels, a diagnosis of an androgen secreting tumor should be suspected. Physical examination, biochemical tests and standard imaging should help localize the tumor. However, imaging studies may fail to localize a small tumor. SOVS may help in making an accurate diagnosis and in localizing the tumor. SOVS should be restricted to appropriate cases and should be performed in a center with expertise in venous catheterization because of the complications associated with the procedure.

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