

Virilization and Enlarged Ovaries in a Postmenopausal Woman

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Abstract: A patient with postmenopausal bleeding and virilization was found to have bilaterally enlarged ovaries with a yellow cut surface. Histology revealed cortical stromal hyperplasia with stromal hyperthecosis. This hyperplastic condition should not be mistaken for an ovarian neoplasm.

Key words: Ovary, ovarian neoplasms, virilization

Introduction

Postmenopausal women who present with clinical manifestations of hyperandrogenism are often presumed to have an androgen-secreting tumor, particularly if there is ovarian enlargement. Gross findings in the ovaries can help exclude an androgen-secreting ovarian tumor and histologic findings can confirm the gross findings.

Case

A 64 year old woman with abnormal hair growth, male pattern baldness, clitorimegaly and postmenopausal bleeding presented to the clinic for evaluation of a possible hormone secreting tumor. Pre-operative work-up revealed bilateral ovarian enlargement, measuring 4 cm in greatest dimension, without evidence of an ovarian or adrenal tumor. She was taken to the operating room and underwent a total hysterectomy with bilateral salpingo-oophorectomy. On gross pathologic examination the ovaries were firm with a smooth surface and prominent yellow/tan cut surfaces (Figure 1). No masses or lesions were noted grossly. Microscopically, cortical stromal hyperplasia with stromal hyperthecosis (Figure 2) was seen. Uterine findings were significant for an atrophic endometrium as well as few intramural leiomyomata.

Comment

In menopause, the proportion of androstenedione, a weak androgen, to estrogen production shifts in the ovaries(1), which often leads to mild increase in facial hair. When true signs of virilization are apparent, clinicians often assume that a masculinizing tumor is present, particularly if the ovaries or adrenals are enlarged. The most common considerations with ovarian enlargement are Sertoli-Leydig tumor and steroid cell tumor. Ovarian cortical stromal hyperplasia is a hyperplastic condition, not a neoplastic one. Its bilaterality is a clue to the fact that it is a hyperplasia, unlike Sertoli-Leydig tumor and steroid cell tumor which tend to be unilateral and larger in size. Cortical stromal hyperplasia should also be considered when the ovaries show a lack of circumscribed mass, and diffuse yellow coloration with mild enlargement. Cortical stromal hyperplasia can occur in postmenopausal women, and is also seen in polycystic ovarian disease. Histologic diagnosis confirms the clinical diagnosis. Cortical stromal hyperplasia displays an increase in hypercellular ovarian stroma in a nodular configuration. Stromal hyperthecosis often accompanies the cortical stromal hyperplasia, showing nests of luteinized stromal cells throughout the ovarian stroma². In contrast, Sertoli-Leydig tumor has a variable histology consisting of Sertoli, Leydig and fibroblast cells. Steroid cell tumor has nests of cells similar to stromal hyperthecosis, however, these cells would be diffuse, comprising the entire lesion. Patients with cortical stromal hyperplasia secrete increased androstenedione, leading to virilization. Aromatization of the androstenedione to estrone in peripheral adipose tissue can lead to hyperestrogenism as well, which is

the likely pathophysiology of her postmenopausal bleeding. An awareness of this condition is necessary to avoid overdiagnosis of a masculinizing neoplasm.

Legends:

Figure 1- Ovaries showing yellow cut surfaces

Fig 2-Stromal hyperthecosis. Nests of luteinized stromal cells are seen within the hyperplastic ovarian stroma(arrow and inset).

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