

Stromal Luteoma of the Ovary: A Rare Case Presentation

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ABSTRACT

Stromal luteoma of the ovary occurs mostly in postmenopausal females and is very rare. It is seen in all ages with preponderance in the fifth and sixth decades of life. Abnormal vaginal bleeding is the most frequent presentation, but endocrine symptoms and sometimes virilizing signs may also be observed. Symptomatology of features may differ depending on the type of hormones secreted from the tumor cells. Stromal luteomas usually present with hyperestrogenic symptoms, while Leydig cell tumors are mostly associated with hyperandrogenism. We present a case report of a 50-year-old female who presented with postmenopausal bleeding and was diagnosed with stromal luteoma of the ovary on histopathology.

Key words: Histopathology, immunohistochemistry, ovary, stromal luteoma

INTRODUCTION

Stromal luteoma of the ovary occurs mostly in postmenopausal females and is very rare.^[1] Abnormal vaginal bleeding is the most frequent presentation, but endocrine symptoms and sometimes virilizing signs may also be observed.^[2] This tumor is surrounded by an ovarian stroma, entirely composed of luteinized cells devoid of crystals of Reinke. Hyperthecosis of the ovarian stroma is often observed in this benign tumor.^[3]

Sex cord ovarian tumors are a rare kind of ovarian neoplasm. Steroid cell tumors accounting for 0.1% of all primary ovarian tumors are a subgroup of sex cord ovarian tumors.^[1,2] According to the origin of the cells that generate the tumor, steroid cell tumors are classified into three groups: Stromal luteomas, Leydig cell tumors, and steroid cell tumors, not otherwise specified (NOS).

Stromal luteomas constitute 20–25% of all steroid cell tumors.^[2,3] It is seen in all ages with preponderance in the

fifth and sixth decades of life.^[4,5] Symptoms may differ depending on the hormones secreted from the tumor cell. Stromal luteomas usually present with hyperestrogenic symptoms, while Leydig cell tumors are mostly associated with hyperandrogenism. However, in the NOS group, hyperestrogenism may rarely be seen, as 25.0% of NOS tumors show no hormonal activity.^[4,5]

We present a case report of a 50-year-old female who presented with postmenopausal bleeding. She underwent total abdominal hysterectomy with bilateral salpingo-oophorectomy and was diagnosed with stromal luteoma of the ovary on histopathology.

CASE REPORT

A 50-year-old female presented in the gynecology clinic with complaints of abnormal vaginal bleeding for the past 4 years. Transvaginal ultrasonography showed an endometrial thickness of 23 mm, with enlarged left ovary to 12 cm×10 cm in size and atrophic right ovary. Endometrial curettage was

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performed and a pathological specimen was reported as disordered endometrial proliferation. Progesterone therapy was stated for a month, but as the patient was unresponsive, total abdominal hysterectomy and bilateral salpingo-oophorectomy were performed.

Hematologic and biochemical investigations with tumor marker, cancer antigen 125 assessment were within the normal range. Peroperatively, the uterus was seen to be normal in size and shape, but the left ovary was enlarged and the right ovary was atrophic. The macroscopic examination of the left ovary specimen showed a yellow-white nodular lesion, 6 cm×4 cm in size with clear boundaries. Tumoral histomorphology revealed round to polygonal cells forming solid islands and irregular clusters in hyalinized fibrocollagenous stroma, with centrally placed nuclei and abundant eosinophilic granular cytoplasm [Figures 1 and 2]. Reinke crystalloids, foci of necrosis, marked nuclear atypia, or atypical mitotic figures were not seen. Immunohistochemical staining with epithelial membrane antigen, chromogranin, and inhibin [Figure 3] showed positive immunoreactivity. A final histopathological diagnosis of stromal luteoma was given. Simple hyperplasia without atypia was observed in the endometrium. As stromal luteoma is a benign lesion, additional treatment was not recommended. Our patient is doing well after 12 months of the follow-up period.

DISCUSSION

Stromal luteomas constitute 20.0–25.0% of all steroid cell tumors and are always benign. These tumors show the presence of small round to oval steroid cells in the ovarian stroma, whereas Leydig cell tumors are usually seen in the hilus of the ovary.^[4]

Postmenopausal bleeding should be examined carefully in view of endometrial hyperplasia and endometrial cancer. Etiology of the excessive estrogen source in endometrial hyperplasia may be obesity, exogenous estrogen intake, or estrogen-secreting ovarian tumors, such as sex cord-stromal tumors.^[3]

About 90.0% of stromal luteomas show features of stromal hyperthecosis. They are unilateral and usually 3 cm in size. Grossly, they are solid, mostly gray-white to yellow colored with clear borders.^[3,4] Grossly, our pathological specimen showed a solid, well-encapsulated growth of 6 cm×4 cm in size. Small-sized tumors are mostly seen in stromal luteomas. The mean tumor diameter of stromal luteomas is 1.3 cm, 2.4 cm for Leydig cell tumors, and 8.4 cm for NOS.^[6]

Young reported stromal luteomas mostly in postmenopausal women who presented with hyperestrogenic abnormal bleeding. Similarly, our case presented to the gynecology clinic with postmenopausal bleeding. The hyperestrogenic state was confirmed on histopathological evaluation of

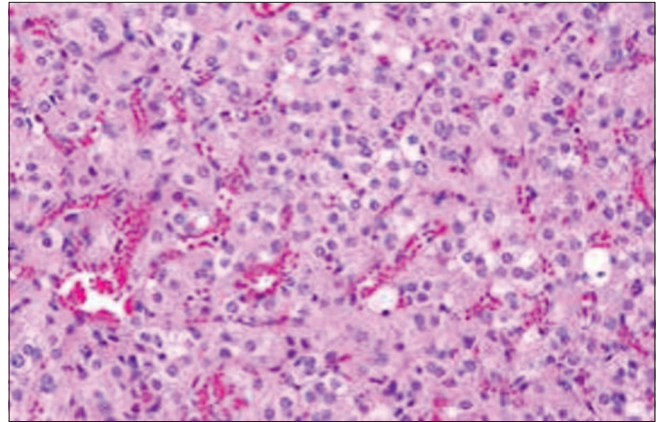


Figure 1: Microscopic examination showed polygonal to round cells forming solid islands and irregular clusters of tumor cells in a hyalinized fibrocollagenous stroma, with centrally placed nuclei and abundant eosinophilic to granular cytoplasm. Hematoxylin and eosin ×40

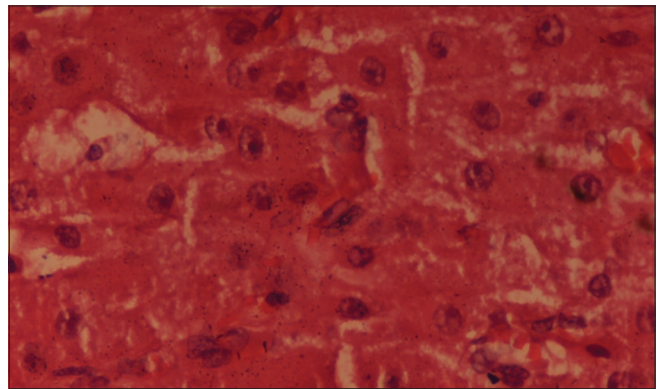


Figure 2: High power of Figure 1. Hematoxylin and eosin ×40

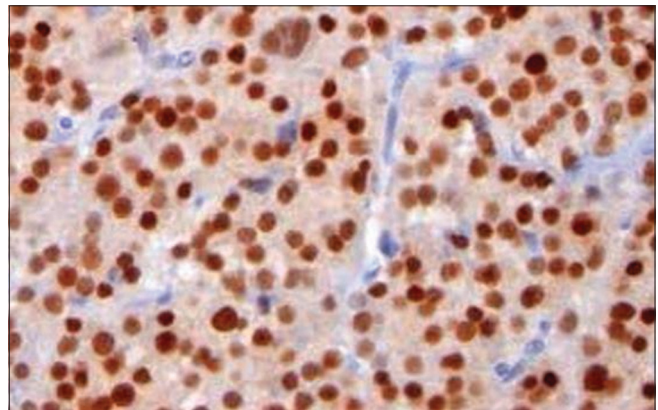


Figure 3: Immunohistochemical staining showed nuclear positivity with inhibin. Immunohistochemical inhibin ×40

the endometrial biopsy specimen.^[5] Only 12.0% of the patients with stromal luteoma have androgenic symptoms.^[6] Stromal luteomas and Leydig cell tumors are mostly seen in postmenopausal women, whereas NOS is mostly seen in the young premenopausal age group.^[6]

Microscopically, stromal luteomas may simulate Leydig cell tumors and theca lutein cysts. Leydig cell tumors are seen in the hilus and contain steroid cells that include Reinke crystalloids.^[7,8] Microscopic examination of stromal luteomas shows stromal hyperthecosis in 92.0% of stromal luteomas, 42.0% of Leydig cell tumors, and 23.0% of NOS.^[8] Theca lutein cysts always present as a follicle in the stroma, but this is not observed in stromal luteomas. Malignant melanomas can mimic stromal luteomas and can be differentiated by S100 and human melanoma black-45 immunoreactivity in melanomas.^[9] We diagnosed our patient as a case of stromal luteoma based on clinical, histopathological, and immunoreactivity with an inhibin antibody. These tumors are known to be benign tumors, so surgical staging was not recommended. As in epithelial ovarian cancers, the treatment of sex cord tumors is surgery.^[10]

Ovaries should be examined carefully with transvaginal ultrasonography to reveal any accompanying ovarian pathology in women with postmenopausal bleeding, and stromal luteomas should be considered as a reason for the postmenopausal bleeding, even though they are rare. Nevertheless, the transvaginal ultrasound is the most sensitive method for the detection of an ovarian tumor.

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