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Case report

SERTOLI-LEYDIG CELL TUMOR OF THE OVARY AS AN INCIDENTAL FINDING IN A PATIENT UNDERGOING HYSTERECTOMY DUE TO RECURRENT ABNORMAL UTERINE BLEEDING

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Abstract

Sertoli-Leydig cell tumor (SLCT) of the ovary is a rare neoplasm that accounts for only 0.5% of all primary ovarian neoplasms. Clinical and histopathological presentations of the tumor are different, which makes diagnosis and treatment difficult. We present a case of a 67-year-old female patient, who presented at the University Clinic for Gynecology and Obstetrics with abnormal uterine bleeding. Explorative curettage was performed for the second time after 1 year, with a histopathological finding of endometrial hyperplasia. The patient underwent an excision of a lung tumor 2 years ago, with a histopathological finding of synovial sarcoma of the lungs, after which she received adjuvant chemotherapy. On transvaginal ultrasonography, the patient had no suspicious pathological findings on the uterus and ovaries. Laboratory tests of tumor markers did not show any elevation. Due to recurrent abnormal bleeding from the uterus, the patient underwent an abdominal hysterectomy with bilateral adnexectomy. Histopathology: Sertoli-Leydig tumor of the right ovary with retiform histoarchitectonics, stage IA and atypical endometrial hyperplasia.

Sertoli-Leydig cell tumors have a relatively good prognosis, but their management, surgical treatment and postoperative follow-up due to their rarity is a challenge even today.

Keywords: Sertoli-Leydig cell tumor, retiform histoarchitectonics, endometrial hyperplasia, postmenopausal patient

Introduction

Sertoli-Leydig cell tumors (also known as androblastomas/arenoblastomas) usually appear in the second and third decades of life. Approximately 75% occur in women under 40 years of age and the average age of appearance is 25 years, but they occur in all age groups. According to their nature, they are mostly benign, extremely rarely malignant, accounting for less than 0.5% of all ovarian malignancies[1]. Androgenic activity is present in approximately half of the cases, and less often in cases with heterologous elements[2]. Approximately 80% of cases are diagnosed at stage Ia[2]. The prognosis of Sertoli-Leydig tumors is generally favorable, depending on the tumor's stage and degree of differentiation. In 10% of cases, tumors with intermediate differentiation; histopathology reveals pronounced anaplasia[3]. The presence of heterologous elements and retiform histoarchitectonics is also associated with a

poor prognosis and their incidence is even rarer. Even rarer are cases with synchronous atypical endometrial hyperplasia due to the estrogen effect. Recurrence usually occurs in the peritoneal cavity and usually within 2 years[4]. They have hormonal activity, and at least one-third of patients have virilization.

Case report

We present a case of a 67-year-old female patient who underwent total abdominal hysterectomy and bilateral adnexectomy due to abnormal recurrent postmenopausal bleeding for which explorative curettage was performed on 2 occasions with histopathological findings of endometrial hyperplasia.

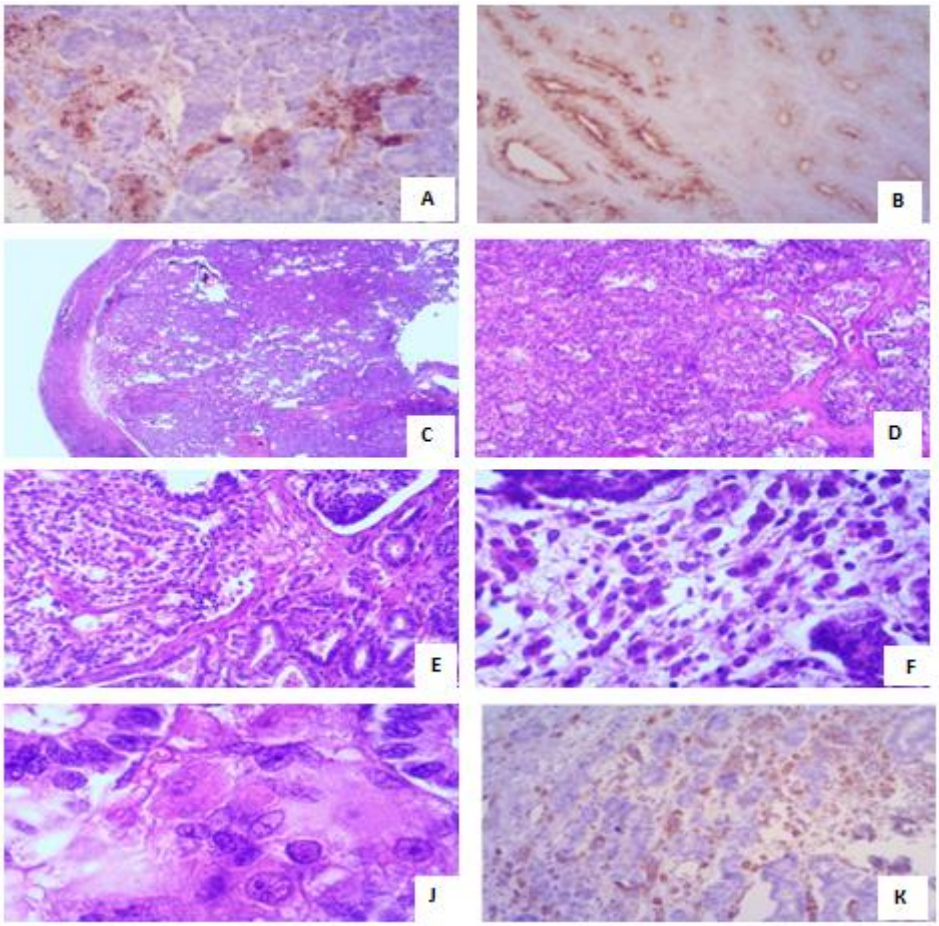

Fig. 1. A-Calretinin; 100x. Strong positivity in Leidig cells with a faintly staining fraction of Sertoli, cells, B-CKAE1/AE3; 100x. Partial and predominantly luminal staining of Sertoli cells C-H&E; 5x. Well-demarcated tumor not penetrating the ovarian surface, D-H&E; 40x. Sertoli cells forming confluent lobular structures composed dominantly of tubules with open lumina and smaller solid to cribriform foci with scant intervening fibrous stroma, E-H&E; 100x. Tubules and focus with retiform arrangement (upper left) of Sertoli cells, F-H&E; 200x. Leidig cells in edematous stroma between two solid nests (upper right and lower left) of Sertoli cells, J-H&E; 400x. Reinke crystal in Leidig cell (arrow), K-Inhibin; 100x. Cytoplasmic staining for alpha-inhibin in tumor cells

Personal history-arterial hypertension, menarche at 14 years, menopause 17 years ago, 4 pregnancies, 2 abortions and 2 deliveries.

Two years ago, due to monophasic synovial sarcoma of the lungs, an excision of the tumor was performed through thoracotomy. She underwent adjuvant chemotherapy

postoperatively. There was not any association of this neoplasm with the Sertoli-Leydig found on the ovary.

Preoperative laboratory and tumor markers were within the reference range. Transvaginal ultrasound without any abnormal findings-uterus in AVFL, anteroposterior diameter 40 mm.

Both ovaries with normal macromorphology, and on the left ovary an 11 mm cyst without suspicious signs of malignancy.

Computed tomography of the thorax was performed which revealed no residual disease or metastatic disease.

Intraoperatively during exploration, macroscopically no lesion suspicious for a metastatic deposit was observed; an extrafascial hysterectomy with bilateral adnexectomy was performed. The patient was discharged from the hospital on the 4th postoperative day.
During the postoperative examinations, the patient had no significant subjective complaints; during the gynecological and ultrasound examination no recurrence of the primary disease was observed. Histopathological analysis showed a Sertoli-Leydig cell tumor of the right ovary with intermediate differentiation, retiform histoarchitectonics (Figure 1 A, B, C, D, E, F, J and K) and atypical endometrial hyperplasia, as well as adenomyosis of the uterus. The ovarian tumor was staged pTa1. After surgery, the patient was referred for adjuvant chemotherapy due to intermediate differentiation and retiform histoarchitectonics.

Discussion

The category of benign and malignant ovarian neoplasms known as cord tumors or stromal tumors (SCSTs) grow from the cord (Sertoli tumors and granulosa cell tumors) or stromal cells (fibromas, thecomas, and Leydig cell tumors) or both (Sertoli-Leydig cell tumor)[5,6].

Compared to tumors of germ cell and epithelial cell origin, SCSTs are less common. Approximately 4% of benign ovarian neoplasms are benign SCST, while 8% of malignant ovarian neoplasms are malignant SCST[3]. Malignant SCSTs account for less than 8% of malignant ovarian neoplasms. Unlike ovarian cancer, most SCSTs are not associated with germline BRCA mutations or a genetic predisposition to breast cancer. An exception is granulosa cell tumors, which are more common in patients with a family history of breast or ovarian cancer[8].

Patients with SCST typically present with abdominal or pelvic symptoms caused by the mass or as an incidental finding on examination. Some SCSTs secrete androgens, estrogens, or other steroid hormones, which may result in clinical manifestations related to the hormonal profile.

SCST is usually suspected in the presence of an adnexal mass and endocrine effects. The diagnosis also consists of laboratory tests: testosterone, estradiol, inhibin A and B and alpha-fetoprotein.

Endometrial sampling will reveal endometrial hyperplasia/intraepithelial neoplasia in 25 to 50%[9-11].

The spread and likelihood of distant metastases vary by histological subtype, but nodal metastases are rare[12]. A retrospective series of 87 patients with predominantly granulosa cells or Sertoli-Leydig cell neoplasms were free of nodal metastases[12].

Sertoli-Leydig cell tumors are rare, less than 0.5% of all malignant ovarian neoplasms, especially those with retiform histoarchitectonics and heterologous elements; their presence worsens the prognosis in these tumors. Well-differentiated, moderately differentiated poorly differentiated and retiform are the four subtypes. Heterologous elements can exist in moderately differentiated, poorly differentiated and retiform types.

Malignant SCSTs require radical treatment. The decision on the extent of the operation depends on the extension of the disease to the surrounding tissues and organs, ex tempore biopsy and the comorbidities of the patient. Due to the rarity of these neoplasms, the decision on the type of surgical treatment is a challenge even for experienced gynecological oncologists.

The efficacy of chemotherapy in Sertoli-Leydig cell tumors is limited and is based on experience and case reports.

Well-differentiated stage I tumors have a good prognosis. Only surgery is recommended. The relapse rate for tumors with heterologous elements or with retiform histoarchitectonics can be high, up to 20%, and platinum-based chemotherapy is recommended for these patients[14]. The relapse rate in patients with poorly differentiated Sertoli-Leydig cell tumors is up to 60%; for patients with intermediate- to high-grade stage I tumors or higher-stage tumors of any grade adjuvant platinum-based chemotherapy is recommended[14].

Follow-up after treatment-There is no established strategy for follow-up after surgical treatment. Our clinical practice is based on the guidelines from the Association of Gynecologic Oncologists[15,16].

Examinations after surgical treatment-every three months in the first two years, then every six months in the next 5 years.

Serum tumor markers-For patients who had one or more tumor markers elevated at diagnosis (e.g., testosterone, inhibin, alpha-fetoprotein, anti-Mullerian hormone), the same markers should be repeated every two to four months in the first two years, then every six months. Multiple tumor markers are monitored for greater efficacy[17].

For recurrent disease, chemotherapy is offered as adjuvant therapy in patients with relapsed Sertoli-Leydig cell tumors who have undergone repeated surgical resection. A possible exception are patients with well-differentiated Sertoli-Leydig cell tumors who relapse and have no change in histology. For such patients, surgery alone may be sufficient. Chemotherapy is used as first-line treatment for patients with advanced stage and in whom surgery is contraindicated[18].

The overall five-year survival is 70 to 90% and depends on the stage and degree of histological differentiation.

Conclusion

The Sertoli-Leydig tumor is an extremely rare finding, especially in those with retiform histoarchitectonics, which was also the case we presented. Because of their rarity, their management, surgical treatment, and postoperative follow-up are based on previously published case reports. In our case, there were no heterologous elements in the tumor; it had intermediate differentiation, and retiform histoarchitectonics which worsens the prognosis and because of the last two this patient was sent to receive adjuvant chemotherapy. To make it even rarer, this is a case with synchronous atypical endometrial hyperplasia due to the estrogen effect. In general, this tumor has a good prognosis, but regular and appropriate follow-up of these patients is of crucial importance to detect relapse at an early stage, which improves the prognosis in this type of patients.

Conflict of interest statement. None declared.

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