Late recurrence of ovarian granulosa cell tumor at the retroperitoneal and renal hilum level in a single-kidney patient - case report

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Summary

Background: Ovarian granulosa cell tumors are rare tumors characterized by a long natural history and a tendency to late recurrence. Surgical resection, radiotherapy, chemotherapy and hormone therapy are possible options to treat recurrent disease. The choice will depend on the patient's condition and the site of recurrence. *Case:* We describe the case of a 72-year-old patient with a single left kidney who presented retroperitoneal recurrence of ovarian granulosa cell tumor at the left renal hilum ten years after primary treatment. *Conclusion:* This case illustrates an example of very late recurrence and emphasizes the importance of extended follow-up for these patients.

Key words: Granulosa cell tumor; Ovary; Recurrence; Retroperitoneal nodal metastasis.

Introduction

Granulosa cell tumor is a rare type of ovarian cancer. Because the tumor usually presents in an early stage, with slow growth, a nonaggressive pattern and good prognosis, conservative surgery alone is the treatment of choice for women who wish to bear children in the future. The use of ancillary therapies is reserved for advanced or incompletely resected tumors, or for recurrent disease. Although they often develop late, recurrent tumors may be curable, explaining the need for prolonged follow-up.

A case of a patient with a single left kidney who experienced late recurrence (at 10 years) of an ovarian granulosa cell tumor located in the area of the left renal hilum which was treated surgically is reported.

Case Report

A 72-year-old woman, with a history of radical right nephrectomy 15 years earlier (histologic study: Fuhrman grade 2, stage T1bNoMo, clear cell carcinoma), hysterectomy and bilateral salpingo-oophorectomy for a left ovarian tumor ten years before (histology study: Stage IA granulosa cell tumor with diffuse, follicular pattern according to the FIGO classification [1].

The patient was referred to our department by another hospital for surgical assessment of a 7-cm left pararenal mass detected during routine follow-up. The following additional tests were performed:

Abdominal CT (Figure 1): empty right renal fossa, left kidney of normal size and location. A well-delimited 7-cm mass with heterogeneous contrast enhancement was visualized below the left renal hilum; the mass displaced the left renal vein and left renal artery, with no infiltration of these structures. The remaining abdominal examination presented no findings of interest.

Renal arteriography (Figure 1): backward and upward displacement of the left kidney, with no infiltration of the main renal vessels. The renal vein was patent to the point where it joined the vena cava, which was shifted by the mass, but not infiltrated. The inferior vena cava was of normal diameter and morphology.

Surgery was scheduled based on a presumptive diagnosis of recurrent renal or ovarian tumor. The preoperative study was favorable and left transperitoneal subcostal laparotomy was undertaken by opening the posterior parietal peritoneum at the Treitz arch and exposing the retroperitoneal mass, which was mobile (Figure 2.A). The following were performed: dissection of the aorta and left renal vein, detachment of the left colon, ligature of the inferior mesenteric vein and left gonadal vein, and dissection of the left ureter. Following progressive release of the mass, complete removal was achieved.

The histologic study revealed a 7.5 x 7 x 6.5-cm tumor which, on cross-section, showed grayish-white areas and portions with a necrotic, bloody appearance (Figure 2.B). The tumor was composed of neoplastic proliferation with a diffuse growth pattern and areas of gyriform morphology. The cells were of medium size, with scanty cytoplasm, nuclei with moderate atypia and "coffee-bean" nuclei (there were up to 8 mitoses per 10 highly magnified fields). Necrotic areas were also observed. All findings were consistent with adult granulosa cell tumor metastasis (Figure 3).

Adjuvant cytotoxic chemotherapy with bleomycin, etoposide and cisplatin was prescribed. There has been no evidence of recurrent or persistent disease for 14 months.

Discussion

Ovarian granulosa cell tumors, which originate in the sex cords, are rare tumors, comprising 2%-5% of all ovarian cancers [2, 3]. There are two main histologic subtypes, adult and juvenile. The adult type presents in perimenopausal and postmenopausal women, whereas the juvenile type is reported among girls and women younger than 35 years of age.

Revised manuscript accepted for publication May 20, 2006

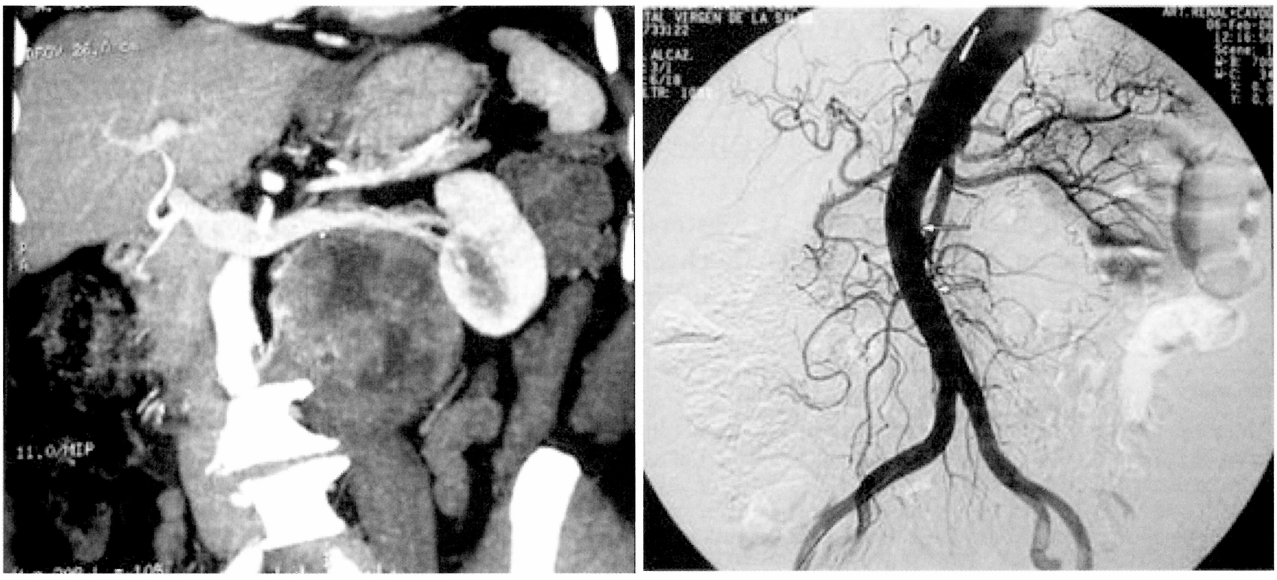

Figure 1. — CT scan and arteriography image.

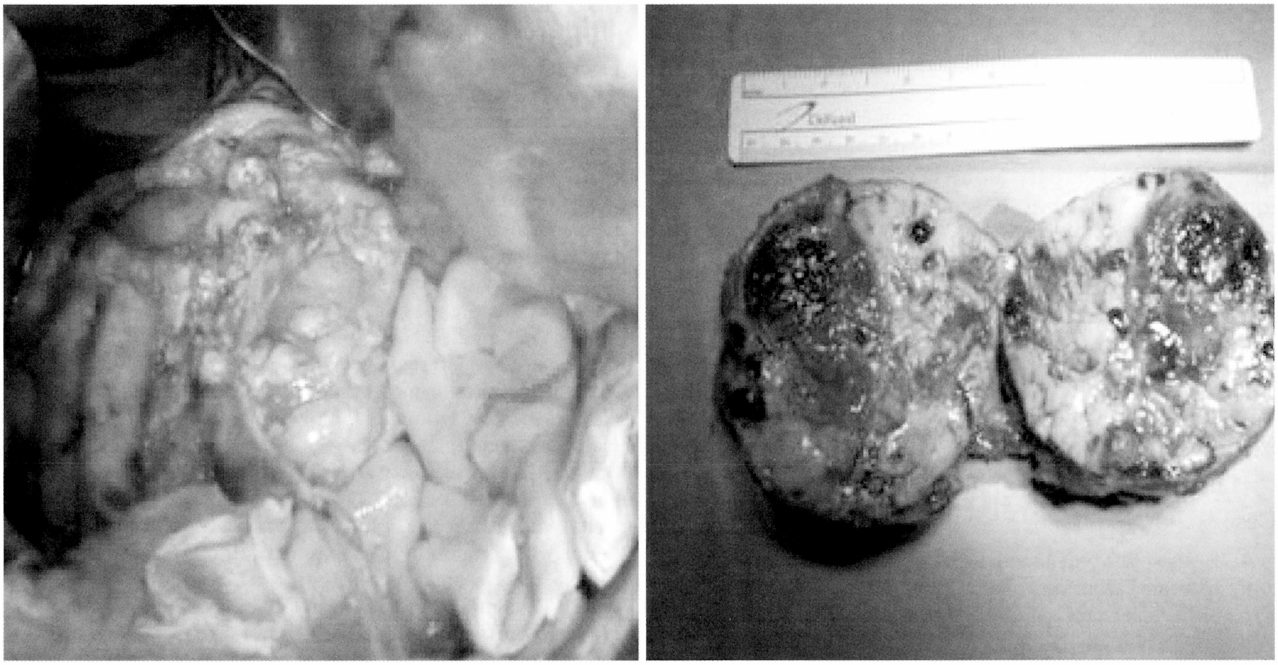

Figure 2. — A) Surgical image following removal of the mass; note the relationship with the aorta, left renal vein and ureter. B) Image of surgical specimen.

Granulosa cell tumors are often referred to as tumors with low malignant potential due their slow, indolent growth, ovary-confined presentation, late recurrence and good survival, even in advanced stages or recurrence. Even when large, 80% to 90% of tumors present in stage I. A combined analysis of various series shows 90% survival for Stage I tumors [2]. In contrast, tumors also affecting structures other than the ovaries have a 5-year survival of 33% to 53% [3]. In terms of recurrence, it has been estimated that less than 10% of Stage I disease will recur, as opposed to 30% or above for more advanced stages [4]. Disease recurring after five years is considered late and even more importantly, post-recurrence survival exceeds three years [2-5]. The recurrent tumor is usually located in the pelvic area (70%) and approximately 15% of first recurrences appear to involve the retroperitoneum [6].

The long natural history of this disease highlights the importance of extended follow-up for patients with granulosa cell tumors, as recurrences have been reported decades after the initial diagnosis [2, 6].

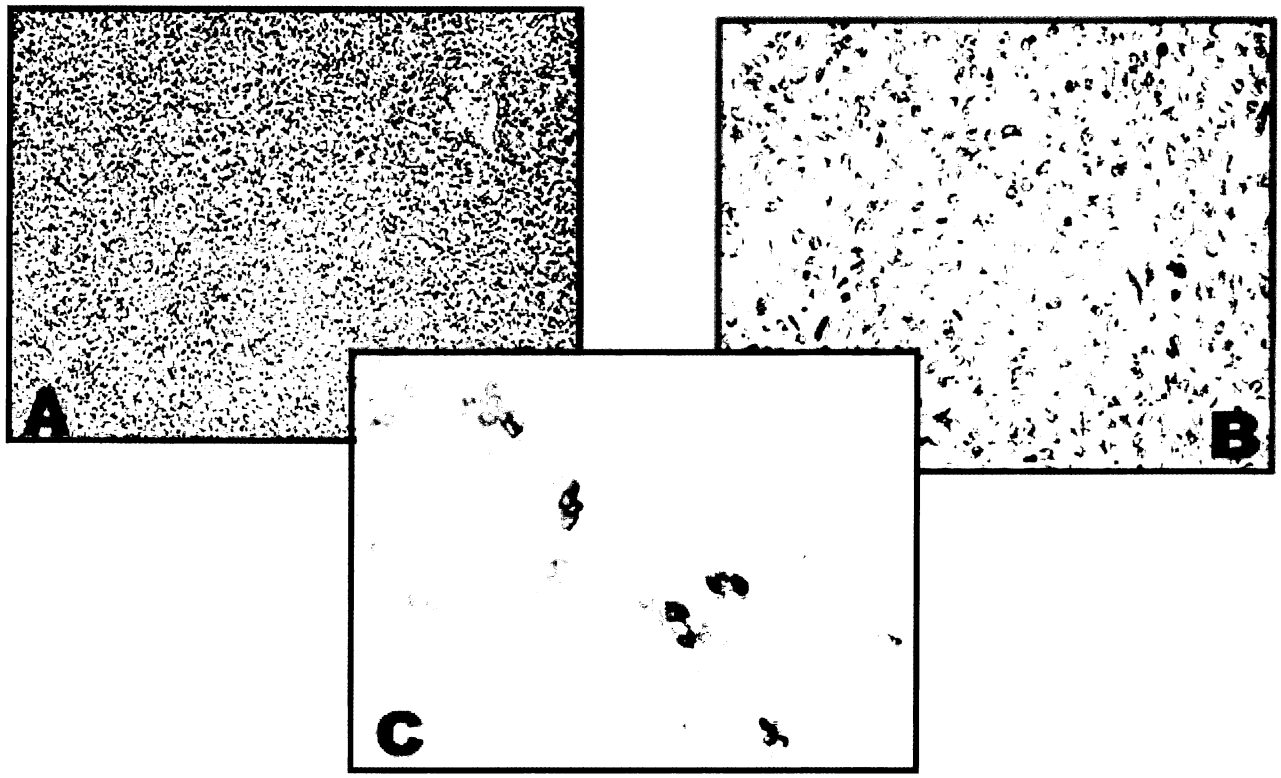

Figure 3. — A) Diffuse growth pattern and areas of gyriform morphology (H&E x 10).
B) "Coffee-bean" nuclei (H&E x 40).
C) Immunohistochemical staining for alpha-inhibin (x 200). Cytoplasmatic staining of tumor cells.

The disease stage at presentation is the most important prognostic factor. Other factors of poor prognosis are tumor size greater than 10-15 cm, tumor rupture, lymphatic invasion, vascular invasion nuclear atypia, high mitotic index, and DNA ploidy [7].

The need for ancillary treatment for this disease is debatable. There is currently no evidence of its usefulness in Stage I disease, whereas in completely resected advanced disease, it is not clear. In the advanced stage, radiotherapy, hormonal therapy (GnRH analogues, progestogens), chemotherapy or clinical follow-up have been proposed. The choice will depend on whether the patient is elderly and on her overall health. Ancillary therapy would be indicated only in incompletely resected advanced disease [2-6].

Surgical resection, radiotherapy, chemotherapy and hormonal therapy are the possible options to treat recurrent disease. The choice should be made according to the patient's condition and the site of recurrence [2]. Radiation treatment in the recurrent setting may lead to longer disease-free survival; however, some reports have shown that responses last only for a few months [2, 8, 9]. In terms of chemotherapy, cisplatin is the most active agent in ovarian granulosa cell tumors. Cisplatin in combination with doxorubicin, cyclophosphamide, bleomycin, vinblastine or etoposide produces overall response rates of around 60% to 83% [2, 10, 11]. A partial response to 12 months of single-agent paclitaxel has been reported in the literature [12]. Hormonal therapies, such as progestins (medroxyprogesterone acetate), antiestrogens (tamoxifen) and gonadotropin-releasing hormone agonist (leuprolide), have the advantage of low side-effect profiles and are associated with transient responses of a few months' duration [2, 3, 13].

In conclusion, treatment of patients with recurrent or metastatic ovarian granulosa cell tumors should be individualized and decisions based on the size and location of the lesions, whether they can be resected, and the patient's clinical status. Surgery, radiotherapy, chemotherapy, and hormonal therapy may all have a role to play in the long natural history of granulosa cell tumors.

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