CASE REPORT

1. Physician specialist in Gynecology and Obstetrics, Obstetrics and Gynecology Service, Hospital Central "Dr. Urquinaona", Maracaibo, Zulia State, Venezuela
a. Doctor in Medical Sciences. ORCID 0000-0002-9937-1850
b. ORCID 0000-0001-9366-6343
c. Doctor of Clinical Medicine, ORCID 0000-0002-5433-7149.

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Corresponding author:
Dr. Eduardo Reyna-Villasmil
Hospital Central "Dr. Urquinaona". Final Av. El Milagro. Maracaibo, Estado Zulia, Venezuela
584162605233
sippenbauch@gmail.com.

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Pure primary squamous cell carcinoma of the ovary

Carcinoma primario puro de células escamosas de ovario

Duly Torres-Cepeda[1,a], Martha Rondon-Tapia[1,b], Eduardo Reyna-Villasmil[1,c]

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ABSTRACT

Ovarian squamous cell carcinoma is a rare malignant neoplasm; its occurrence is attributable to malignant transformation of an existing ovarian tumor. The pure variety of ovarian squamous cell carcinoma, in the absence of pre-existing ovarian lesions including dermoid cysts, Brenner's tumors or endometriosis, is extremely rare and is considered a metaplasia of the surface epithelium. Because of its rarity, clinical features and effective treatments have not been established. Adequate evaluation prior to surgery is critical to determine the extent of surgery and adjuvant therapy. There is no agreement on postoperative chemotherapy or radiotherapy. The prognosis of advanced disease is generally poor. A case of pure primary squamous cell carcinoma of the ovary is presented.

Key words: Squamous cell carcinoma of ovary, pure primary, Ovarian neoplasms

RESUMEN

El carcinoma de células escamosas de ovario es una neoplasia maligna rara; su aparición es atribuible a la transformación maligna de un tumor ovárico existente. La variedad pura del carcinoma de células escamosas del ovario, en ausencia de lesiones ováricas preexistentes que incluyen quistes dermoides, tumores de Brenner o endometriosis, es extremadamente rara y se le considera una metaplasia del epitelio de superficie. Debido a su rareza, no se han establecido las características clínicas ni los tratamientos efectivos. La evaluación adecuada antes de la cirugía es fundamental para determinar el alcance de la cirugía y la terapia adyuvante. No existe acuerdo sobre la quimioterapia o radioterapia postoperatoria. El pronóstico de la enfermedad avanzada es generalmente pobre. Se presenta un caso de carcinoma de células escamosas primario puro de ovario.

Palabras clave. Carcinoma de células escamosas de ovario, primario puro, Neoplasias ováricas

Introduction

Primary ovarian squamous cell carcinoma (SCC) is rare. Most arise from dermoid cysts and others are associated with pre-existing Brenner's tumors or endometriosis, but those that do not arise from a pre-existing ovarian lesion are extremely rare[1]. The *de novo* development of pure primary SCC in an ovary without lesions is rare - there are reports of fewer than 30 cases - and possibly derives from metaplasia of the surface epithelium. Due to its low frequency, there is little information on the clinical characteristics, and no useful and effective treatments have been identified[2-4]. A case of pure primary squamous cell carcinoma of the ovary is presented.

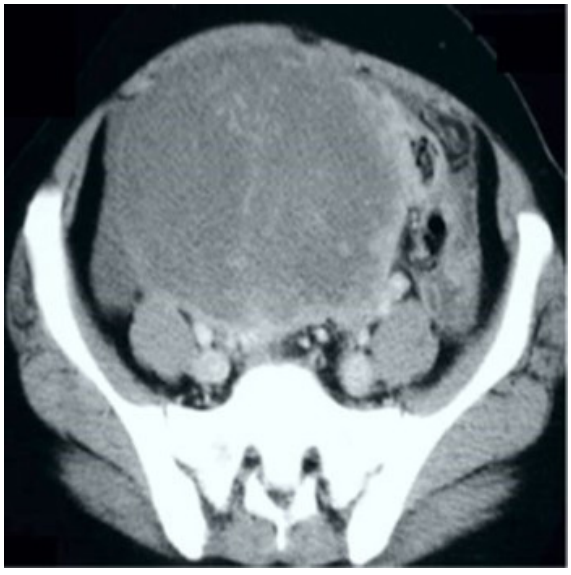
Case report

A 35-year-old female patient, gestation 3, para 2 and one miscarriage was referred to the gynecology office for presenting progressive abdominal pain and abdominal distension of approximately 6 months of evolution. The patient reported a weight loss of approximately 12 kilograms during this period with no changes in appetite, bowel habits or uterine bleeding. She denied personal history of chronic pathologies, the use of medications and consumption of alcohol, tobacco, or recreational drugs. Menstrual cycles were normal.

Physical examination showed cutaneous-mucosal pallor without jaundice or cervical or axillary lymphadenopathy. Breast evaluation was within normal limits. Abdominal palpation showed the presence of a firm and mobile tumor occupying a large part of the pelvis. No evidence of ascites was found. Gynecologic examination revealed a hard, firm, 16 x 9 centimeters tumor with restricted mobility that appeared to originate from the right adnexa and occupied the entire Douglas cul-de-sac. The left adnexum was free. The uterus was of normal size but deviated to the left. On rectal examination, the rectal mucosa was free.

Transvaginal ultrasound and abdomino-pelvic computed tomography with contrast showed a heterogeneous tumor measuring 14 x 9 x 6 centimeters that occupied a large part of the lower abdomen and apparently originating from the intestinal mesentery in the right iliac fossa (Figure 1). Multiple nodules were also found in the mesentery and peritoneum. Biochemical, hematology, coagulation, electrolytes, liver, and renal function tests were normal. In view of the findings of possible metastatic disease by imaging, it was decided to perform the determination of tumor markers with the following results: CA-125, 29 IU/mL (normal: 0 to 35 IU/mL); CA 19-9, 35 IU/mL (0 to 40 IU/mL) and carcinoembryonic antigen, 2.8 ng/mL (0.4-3.1 ng/mL). No abnormal cells were found on cytologic examination of the cervix.

Figure 1. Computed tomography image showing the abdomino-pelvic tumor.



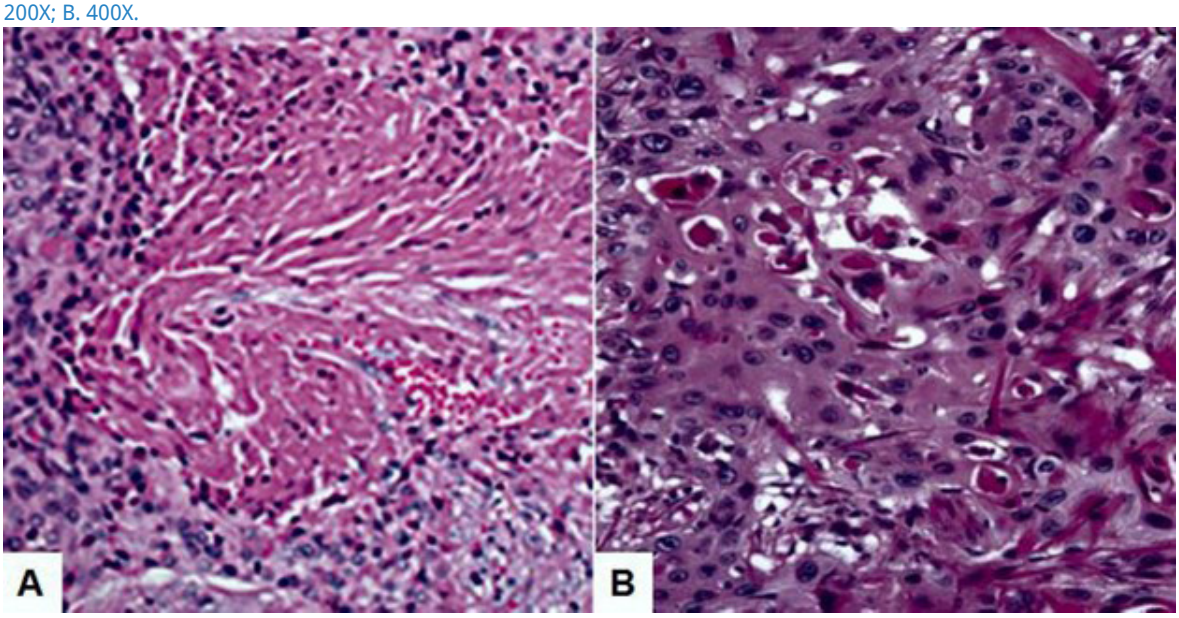
The patient was scheduled for exploratory laparotomy in which a solid, grayish tumor was found originating from the right adnexa, strongly adherent to the sigmoid colon. Peritoneal metastatic disease with omentum involvement and small bowel mesentery deposits were also noted. Freeze biopsy suggested malignant ovarian tumor of squamous type. Surgical resection of all visible abdomino-pelvic tumors plus total abdominal hysterectomy, bilateral salpingo-oophorectomy, total omentectomy, appendectomy, small bowel resection with termino-terminal anastomosis, pelvic and para-aortic lymphadenectomy, sigmoid colectomy with primary closure of the rectal stump and exteriorization of the proximal colon together with peritoneal lavage were performed.

Anatomopathologic study found grayish ovarian tumor with areas of hemorrhage and necrosis. Microscopic examination showed polygonal squamous cells with keratinization of some single cells and intercellular bridges, but keratin beads were absent. Cellularity was high with nuclear pleomorphism and numerous mitotic figures. Nuclei were relatively large with coarse granular chromatin, unevenly distributed. There was no evidence of normal ovarian parenchyma, concomitant cystic teratoma, Brenner's tumor or endometriosis (Figure 2). All these findings led to the diagnosis of pure primary well-differentiated ovarian SCC.

The histopathologic features of the peritoneal tumor deposits were identical to the adnexal tumor. The resection margins of the lesion and the excised lymph nodes were free of tumor lesions. To determine whether there were associated cervical lesions, the cervix and vaginal cuff underwent pathologic examination, but no evidence of tumors or dysplasia was found. The uterus, fallopian tubes and left ovary were normal. The clinical staging of the ovarian tumor was stage IIIC according to the International Federation of Gynecology and Obstetrics classification.

Despite the use of adjuvant chemotherapy with cisplatin - etoposide for three months, the patient's postoperative follow-up CT scan of the abdomen and pelvis showed pelvic tumor progression with liver metastasis.

Figure 2. Photomicrograph revealing well-differentiated primary pure squamous cell carcinoma of the ovary. Hematoxylin-eosin staining. A. 200X; B. 400X.



Discussion

SCC of the ovary can be primary or metastatic. Approximately 5% to 6% of ovarian cancer cases are metastatic to other organs, and the pure primary ovarian variety comprises 2% of all ovarian cancer cases[4-6]. Most malignant neoplasms (80% to 90%) arising within the ovarian dermoid cyst are SCC[1,2]. Those metastatic varieties commonly originate in the cervix by direct extension, while the primary ovarian variant most frequently arises from dermoid cysts, Brenner's tumor, mucinous cystadenoma, or endometriosis[2,7]. Pure primary ovarian SCC not associated with pre-existing ovarian lesion is even rarer, with reports of less than 30 cases[3,4].

Several mechanisms have been proposed for the origin of these tumors. As they arise from the ovarian surface epithelium, they may contain squamous elements, and some may arise directly from this epithelium. Malignant transformation occurs in the ectodermal component and spreads by direct local invasion and peritoneal seeding[5]. In addition to the published cases of primary ovarian SCC, the most significant association identified is with cervical dysplasia. This association could be explained by the following theories: contiguous spread along the mucosal surface of the female genital tract to the ovary, microscopically undetected angioinvasive cervical carcinoma in the cervix with metastasis to the ovary, and field effect[6,8].

The clinical presentation can be silent or overt, depending on the stage of the disease. Usually, the most frequent manifestations are the presence of abdominal tumor and pain. However, this symptomatology does not allow differentiating a benign tumor from a malignant one. The large size of the ovarian tumor may suggest a long-lasting disease process which could probably explain the development of the malignant transformation observed in histological studies[8,9].

Since primary SCC is the common histologic type of malignancy in the cervix, vulva, vagina, anus, lung, head and neck, physical examination, cytologic testing and imaging studies of these anatomic sites should be considered mandatory. Although primary cervical cancer is the most common original site for metastatic ovarian SCC, the incidence of the former is less than 1%[10].

Unlike other types of epithelial ovarian cancer, primary SCC has locally invasive features like that occurring at other anatomic sites. However, because pure primary SCC is considered epithelial ovarian cancer, standard treatment should be suggested for these cases which includes complete staging surgery with maximal volume cyto-reduction followed by adjuvant chemotherapy[9,11].

The role of adjuvant treatment in ovarian SCC is uncertain. Limited experience suggests that sur-

gical treatment with close follow-up is sufficient for stage IA disease at the time of surgery[12]. Stage IB and higher stages have been treated with different adjuvant therapy schemes with variable results. Relatively poor disease control has been observed with conventional schemes to treat other epithelial ovarian carcinomas, such as cisplatin, vincristine, mitomycin C and bleomycin[13,14].

Radiotherapy has also been used since SCC is radiosensitive, but the results have been variable in those cases originating from dermoid cysts[1,9]. In some cases of lesions originating from mature cystic teratoma, the combination of aggressive cyto-reduction, pelvic radiotherapy and platinum-based chemotherapy have shown benefit[14]. However, it is unclear whether patients with primary de novo SCC of the ovary would benefit from a similar adjuvant therapeutic approach.

The prognosis for patients with ovarian SCC, regardless of type, is worse than that of patients with epithelial cancer of other histologic types. The overall survival of patients with pure primary SCC is similar to that of patients with malignant teratoma[7]. The stage at diagnosis correlates better with survival than other characteristics such as age at diagnosis, tumor size or presence of necrosis[14]. Five-year survival is higher when optimal cytoreduction is achieved. Evidence is limited, but adjuvant chemotherapy (mainly platinum-based) appears to prolong survival in patients with stage III and IV disease[14,15].

In conclusion, primary pure ovarian SCC is an extremely rare entity. Based on the existing data, management should be surgical cyto-reduction of the tumor, similar to the management of other ovarian epithelial carcinomas. Combination chemotherapy and pelvic radiotherapy has shown some benefit in local disease control. However, the role of adjuvant therapy in this group of patients is currently unclear.

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