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Case report

A rare case of rectovaginal squamous cell carcinoma in a postmenopausal woman

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ABSTRACT

Primary squamous cell carcinoma of the rectovaginal septum is rare, with only a few previous cases being reported. We present a case of a 55-year-old woman with primary squamous cell carcinoma of the rectovaginal septum, which was discovered after 2 months of postmenopausal bleeding. Her imaging, surgical course, pathology and treatment course are presented here. To our knowledge, this is only the third such reported case in the literature and management underscores the need for multidisciplinary involvement.

1. Introduction

Masses of the rectovaginal septum (RVS) are rare and include lesions such as cysts, benign and malignant neoplasms, or cancers from other origins (Heller, 2015). The RVS is a fibroconnective tissue between the anterior vagina and the posterior rectum that is thought to originate embryologically from mesenchymal connective tissue (Aigner et al., 2004). They are often asymptomatic and therefore are not diagnosed until advanced stages, where they may start to cause bulk/pressure symptoms (Songmen et al., 2020). Similarly, masses of primary squamous cell carcinoma (SCC) in the vagina are also uncommon and often originate from parts of the genitourinary tract such as the cervix or vulva (Kurman, 2019). Only cancer in a patient with no evidence of cervical or vulvar involvement can be classified as a primary vaginal SCC (Kurman, 2019). Here, we present a case of primary SCC of rectovaginal origin, which to our knowledge is only the third report of such a finding (Songmen et al., 2020; Němejcová et al., 2012).

2. Case presentation

A 55-year-old G2P0020 experienced postmenopausal bleeding and cramping for 2 months. She was seen by her OB-GYN, who palpated a pelvic mass during rectal exam, and was referred to gynecologic oncology for further work-up. Medical history was notable for monoclonal gammopathy, Raynaud's disease, menopause at age 53, osteoporosis (managed with estrogen patch and progesterone orally three times weekly), endometriosis, fibroids, 10 unsuccessful cycles of IVF, and two ectopic pregnancies with unknown management. Patient had a 15 year history of oral contraceptive use. Her family history was significant for Hodgkin's lymphoma in her mother, but there was no family history of ovarian, endometrial or breast cancers. The patient drank alcohol socially and did not use tobacco.

Tumor markers drawn after initial presentation revealed an elevated CA-125 of 46. Pap smear performed showed normal cytology. HPV testing was not performed because the HPV DNA reflex criteria was not met. MRI with and without contrast demonstrated an enlarged right ovary that extended posteromedially within the rectouterine space, with a cystic and solid heterogenous mass with interior septations measuring 7.2 × 5.4 × 5.5 cm (Fig. 1). Involvement of the posterior peritoneal cul-de-sac and narrowing of the rectum with abnormal thickening, nodularity, and enhancement of the left rectal wall at the peritoneal reflection was appreciated and rectal tumor invasion was suspected. An abnormal right inguinal lymph node and borderline left internal iliac lymph node with restricted diffusion were also noted, concerning for metastases. Colonoscopy revealed a normal colon, with normal perianal and digital rectal examinations. PET scan confirmed MRI findings, revealing a large cystic mass in the posterior pelvis measuring 8.4 × 7.7 × 6.9 cm with peripheral solid components, strongly suspicious for malignancy. A 9 × 9 mm right inguinal lymph node showed a SUV max of 4.4, which was suggested to be reactive or neoplastic in origin.

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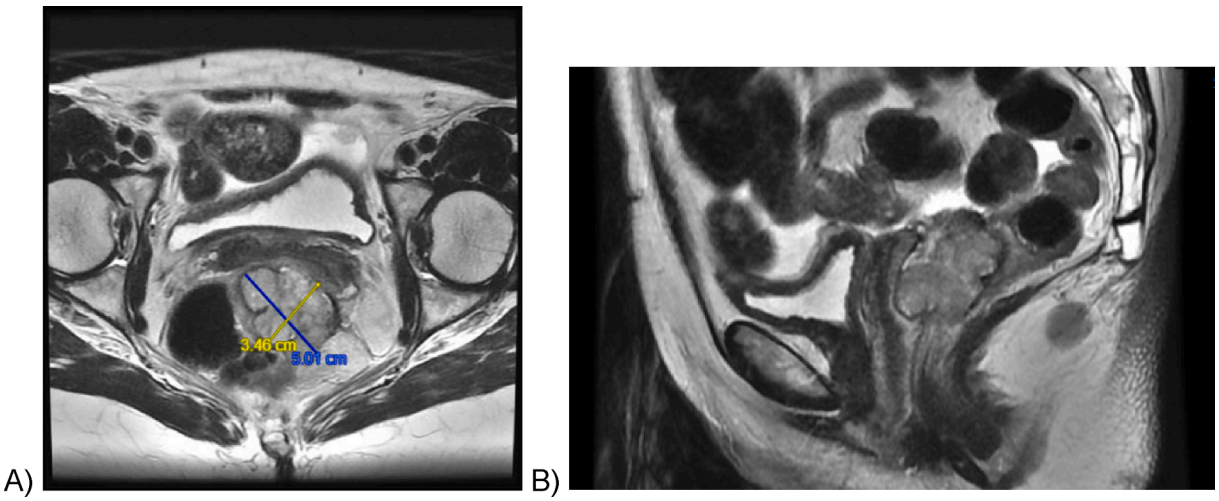

Fig. 1. A) Axial View on MRI of the cystic and solid heterogenous mass with interior septations B) Sagittal View on MRI.

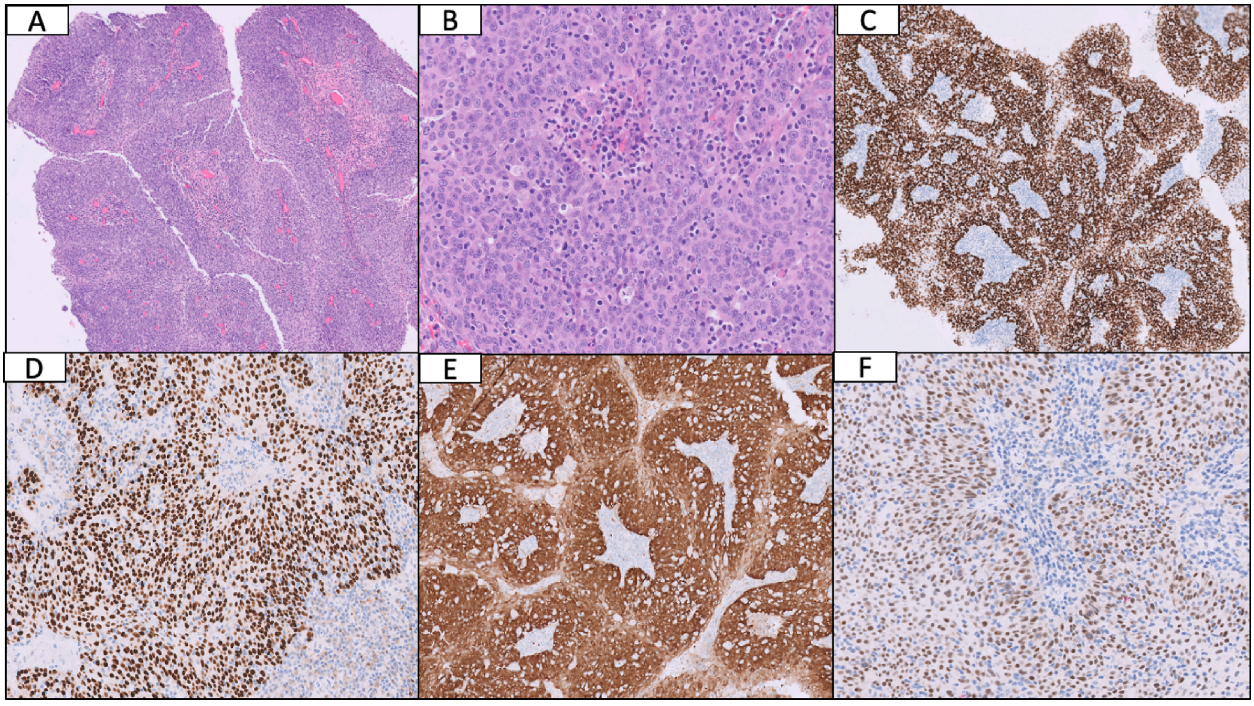

Fig. 2. Histological evaluation shows unoriented irregular fragments with partial papillary and sheet-like growth, areas of invasion to stroma (A,B). Immunostains for p40 (C) and p63 (D) are positive confirming squamous differentiation and p16 (E) is positive, indicative of HPV dependent carcinoma. The tumor is positive for PAX-8 (F).

Decision was made to perform laparoscopic evaluation of the adnexa with removal of the lesion with frozen section. Exam under anesthesia revealed a large, soft 6–7 cm mass, palpated between the posterior vagina and the rectum. An anoscopy was performed intraoperatively, which revealed normal anal mucosa and no invasion of the mass into the rectum. Upon entry into the abdomen, a 6 cm mass was visualized in the posterior cul-de-sac, which was ruptured with a cyst capsule that filled the recto-vaginal space with dark red blood and fatty contents. An EEA sizer placed in the rectum confirmed that the mass was separate from the rectum with no invasion into the rectal mucosa. Frozen section revealed dysplastic epithelium with squamous and transitional features, concerning for carcinoma. No serosal lesions were noted. Decision was made to perform total abdominal hysterectomy, as the retroperitoneal spaces were already developed the bilateral uterine arteries had already been taken at their origins at the internal iliac arteries, bilateral salpingo-oophorectomy, and pelvic lymphadenectomy, and the mass was resected. Procedure was uncomplicated, and the patient was discharged home in stable condition.

Final pathology of the rectovaginal mass revealed non-keratinizing squamous cell carcinoma with areas of invasion, partial papillary architecture with diffuse p16 staining, and PDL-1 positivity (Fig. 2). Uterus, cervix, bilateral fallopian tubes, bilateral ovaries, and all lymph nodes were benign. It was concluded that this tumor represented a primary squamous cell carcinoma of the rectovaginal septum. Two weeks post surgery, MRI showed interval decrease of the rectovaginal mass, now 5.0 × 3.5 cm, compared to the imaging a month prior. The patient was presented at institution-wide tumor board, and consensus was to treat with chemoradiation, which was completed with external beam radiation and weekly cisplatin requiring dose reduction to 30 mg/m^2 due to tinnitus but without significant hearing loss or change on

audiogram. Post-chemoradiation imaging via MRI and PET scan reveals decreased rectovaginal mass without evidence of viable tumor and resolved previously FDG avid inguinal node, and no new suspicious lesions. Currently, she has no evidence of disease at 6 months following treatment completion.

3. Discussion and conclusion

Two previous cases of primary SCC of rectovaginal origin have been reported on, both of which were in pre-menopausal women with no significant genitourinary medical history (except for prior human papillomavirus, or HPV, diagnosis) (Songmen et al., 2020; Němejcová et al., 2012). Our patient is a postmenopausal woman who has a history of several gynecologic issues, including multiple cycles of IVF, endometriosis, fibroids, which were present at time of surgery, and use of estrogen and progesterone. Risk factors for primary vaginal SCC, while not completely elucidated, are often thought to be similar to those associated with cervical cancer: tobacco use, HPV infection, injury or irritation (Huang et al., 2020 Nov), none of which are present in our patient. Due to the rare nature of rectovaginal SCC, there is not adequate data to determine risk factor profile or diagnosis guidelines.

Of note, endometriosis has been found to be related to RVS masses, with one meta-analysis discovering 12 out of 36 cases of RVS cancer seen in women with endometriosis (Lopez et al., 2016). While our patient has a history of endometriosis, endometriosis-related cancer, which is a rare entity in itself, is most commonly associated with adenocarcinoma (Berger et al., 2001). To date, there have been no reports of endometriosis-related SCC in the RVS.

In conclusion, we have described a case of primary SCC of rectovaginal origin in a post-menopausal woman, which has not been reported on previously. Additionally, our patient has an extensive gynecologic medical history, adding a new profile to the literature of rectovaginal SCC.

Author Contributions

Celestine He: conceptualization, project administration, writing original draft, review and editing; Daniela Suarez-Rebling: conceptualization, project administration, writing original draft, review and editing; Mona Saleh: supervision, project administration, reviewing and editing; Lakshmi Kowtha: investigation, review and editing; Valentin Kolev: supervision, reviewing and editing.

CRediT authorship contribution statement

Celestine He: Writing – review & editing, Writing – original draft, Project administration, Investigation, Conceptualization. **Daniela Suarez-Rebling:** Writing – review & editing, Writing – original draft, Project administration, Investigation, Conceptualization. **Mona Saleh:** Writing – review & editing, Supervision, Project administration. **Lakshmi Kowtha:** Writing – review & editing, Investigation. **Valentin Kolev:** Writing – review & editing, Supervision.

Declaration of competing interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

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Consent

Written informed consent was obtained from the patient for publication of this case report and accompanying images. A copy of the written consent is available for review by the Editor-in-Chief of this journal on request.

Data Statement

Data sharing is not applicable to this article as no datasets were generated or analyzed during the current study.

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