CASE REPORT

Stage 1 small cell cancer of the vagina

Tarek Haykal, Trailokya Pandit, Ghassan Bachuwa, Rizwan Danish

Department of Internal
Medicine, Hurley Medical Center,
Flint, Michigan, USA

Correspondence to
Dr Ghassan Bachuwa,
gbachuwa2@hurleymc.com

Accepted 11 June 2018

SUMMARY

This is the case of a 56-year-old white woman with a medical history significant for chronic obstructive pulmonary disease, migraine, hypertension, tobacco abuse and hypercholesterolaemia. Her surgical history is significant for total hysterectomy and bilateral salpingo-oophorectomy for diffuse endometriosis. The patient presented with a vaginal lesion. The biopsy was positive for primary vaginal small cell carcinoma and human papilloma virus (HPV). Initial staging positron emission tomography (PET) scan confirmed stage 1 disease. The patient was started on chemotherapy with cisplatin and etoposide for four cycles, followed by concurrent chemotherapy with cisplatin/taxol and radiation therapy.

BACKGROUND

Small cell carcinoma has been reported in almost every organ.¹ Although genital small cell carcinoma is the most common form of extrapulmonary small cell carcinoma,² vaginal small cell carcinoma is a very rare disease with only about 30 cases reported in the literature. It has no treatment guidelines and carries a significantly poor prognosis.³

This case report highlights the rarity of limited-stage vaginal small cell carcinoma with no spread to any lymph nodes or organs, in addition to being human papilloma virus (HPV) positive on a Pap smear, a finding that has not been reported in other cases of vaginal small cell carcinoma.⁴

CASE PRESENTATION

This is the case of a 56-year-old white woman who presented with low-flow vaginal bleeding similar to a light menses after lifting heavy weight. A week after the bleeding began, she sought medical attention. The patient has a medical history significant for

chronic obstructive pulmonary disease, migraine, hypertension, tobacco abuse and hypercholesterolaemia. She drinks socially and is an active tobacco user with one pack a day for the past 20 years. Her surgical history is significant for total hysterectomy and bilateral salpingo-oophorectomy for diffuse endometriosis that was done in 1998. Her family history is significant for her mother dying from pharyngeal cancer at 74 years of age. A gynaecological examination showed a fixed polypoid lesion of 3 cm in size in the right side of the vaginal wall, of which the biopsy was positive for poorly differentiated neuroendocrine carcinoma of the vagina, as well as for HPV high risk DNA detected but negative for HPV 16 and 18 subtypes (figures 1, 2, 3 and 4).

After the completion of all investigations, the final diagnosis was stage 1 disease for vaginal small cell carcinoma.

INVESTIGATIONS

- Biopsy of vaginal lesion: poorly differentiated neuroendocrine carcinoma of the vagina, HPV positive (figures 1, 2, 3 and 4).
- Gynaecological internal examination: fixed 3 cm polypoid vaginal lesion on the right side of the vaginal wall.
- CT scan of the abdomen and pelvis with contrast and MRI of the brain with and without contrast were negative for distant metastasis.
- Chest X-ray was negative.
- Initial positron emission tomography (PET) scan of the whole body was negative for distant metastasis, confirming limited-stage disease.
- Repeat vaginal examination after four cycles of chemotherapy with cisplatin and etoposide showed a persistent right-sided vaginal lesion, confirmed with repeat biopsy to be persistent small cell carcinoma.
- Repeat PET-CT scan after four cycles of chemotherapy with cisplatin and etoposide was still unremarkable with no local or distant spread of the disease.

TREATMENT

The patient has received four cycles of cisplatin and etoposide as chemotherapy, followed by concurrent chemotherapy with weekly carboplatin and taxol in addition to radiation therapy with 25 external beam fractions to the pelvis of 1.8 Gy each. The patient will receive radiation with high-dose intravaginal brachytherapy, 2.1 Gy in three fractions, for better local control as the final radiation treatment.

Figure 1 Low power view of neuroendocrine carcinoma showing diffuse uniform population of cells (H&E, x10).

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To cite: Haykal T, Pandit T,
Bachuwa G, et al. *BMJ Case
Rep* Published Online First:
[please include Day Month
Year]. doi:10.1136/bcr-2018-
225294

Figure 2 High power view of neuroendocrine carcinoma. The cells have uniform round nuclei with granular chromatin, micronucleoli and scant cytoplasm. Numerous mitotic figures are seen (H&E, x40).

OUTCOME AND FOLLOW-UP

The patient is currently under treatment that seems to be well tolerated.

DISCUSSION

Small cell carcinoma in the genital tract accounts for less than 2% of all small cell carcinoma, with over 95% of the cases occurring in the lungs.⁵ The most common site of involvement in the female genital tract is the cervix, followed by the ovary, endometrium, vagina and vulva.⁵

Thirty cases of vaginal small cell carcinoma have been reported in the literature to date.³ The very first case of vaginal small cell carcinoma was reported in 1986.⁴

To the best of our knowledge, this case would be the seventh case in the literature to be of stage 1 and probably the initial one to be reported with positive HPV. The age range was between 32 and 81 years for all 30 case reports.⁴

Given the fact that HPV testing has always been done with Pap smears, it is well understandable that HPV would be mostly reported with cervical cancers.⁶

Figure 3 The tumour cells show positive cytoplasmic staining for synaptophysin (x40).

Figure 4 Neuroendocrine tumour cells on Pap smear (x40).

Human papilloma virus has been well known to be associated with squamous cell carcinoma of the cervix and small cell carcinoma of the cervix.⁶ HPV genotypes are broadly classified into high-risk (eg, HPV 16, 18, 31) and low-risk types (eg, HPV 6, 11, 40), and high-risk HPV can be detected in almost 90% of cervical cancer.⁴

HPV 18 may be the most prevalent type in small cell carcinoma of the cervix, and to a lesser extent HPV 16.⁷

It is currently unknown whether the HPV type is associated with prognosis in patients with small cell carcinoma of the cervix or genital tract.⁴

Finally, Some researchers cite the histopathological similarities of small cell carcinoma of the cervix and genital tract to those of small cell carcinoma of the lung as evidence against HPV as a causative factor.⁶

The treatment modality varies for vaginal small cell carcinoma from local treatment with surgery and radiation to chemotherapy alone to chemotherapy and radiation therapy or a combination of any of the three treatment modalities.⁴

Patient's perspective

I totally understand that I have cancer in the genital area and I do understand the need for treatment and the rarity of the cancer that I have. I only would hope that this treatment would give me a chance at survival and keep me a healthy person for the coming future.

Learning points

- ▶ We are reporting a rare case of limited-stage vaginal small cell carcinoma.
- ▶ This is probably the first case in the literature of human papilloma virus (HPV)-positive small cell vaginal carcinoma. The significance of this finding on the overall survival or outcomes of the patient is unknown.
- ▶ The patient is managed with chemotherapy and radiation which is the current standard of care despite no evidence of long-term survival.

Despite different treatment modalities, the prognosis remains poor with no survival beyond 2 years in most cases, irrespective of the stage of the disease of vaginal small cell carcinoma.⁴

Outcomes remain poor in extrapulmonary small cell carcinoma due to local relapse and distant metastases.⁷

This case is still under treatment and close follow-up.

Contributors TH: primary author, idea, concept, design, data acquisition and writing of the manuscript. TP: second author, editing of the manuscript, interpretation of the results and data. GB: corresponding author, editing the manuscript, interpretation of the data, concept, design and reporting. RD: editing of the manuscript, data acquisition and analysis.

Funding The authors have not declared a specific grant for this research from any funding agency in the public, commercial or not-for-profit sectors.

Competing interests None declared.

Patient consent Obtained.

Provenance and peer review Not commissioned; externally peer reviewed.

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