ORIGINAL RESEARCH PAPER

Pathology

A RARE CASE OF CLEAR CELL CARCINOMA OF ENDOMETRIUM IN A POST-MENOPAUSAL WOMAN- A HISTOPATHOLOGICAL CASE REPORT

KEY WORDS: Clear cell carcinoma, Postmenopausal bleeding, Endometrial carcinoma, Histopathology.

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ABSTRACT

Clear cell carcinoma of endometrium is a rare but aggressive malignancy with high predisposition of early extra-uterine spread. It commonly presents with vaginal bleeding or discharge. Less commonly, it may be diagnosed subsequent to an abnormal pap smear. Endometrial biopsy is ideally the first step for early diagnosis of such unfavourable endometrial cancer. Histopathological diagnosis is mandatory to confirm the presence of clear cells in the endometrial sample before planning the course of treatment. Here, we report a case of a postmenopausal woman who presented with vaginal bleeding without a specific medical history. Endometrial biopsy was done and sample was sent to our department of Pathology for histopathological diagnosis. We report the case from a histopathological perspective with a brief review of the relevant literature.

INTRODUCTION

Endometrial carcinoma is the most common malignancy of the female genital tract in developed countries and second to cervical cancer in India [1]. The most prevalent histologic type is endometroid endometrial cancer (75-80%), followed by papillary serous cancer (15- 20%). Clear cell endometrial carcinoma is very rare, accounting for only 1 to 6 % of cases [2].

The dualistic model established 20 years back based on morphologic features divides endometrial cancer into two broad categories- Type I and Type II. Type I, comprising of approximately 80-85% of cases, is endometroid carcinoma and its histologic variants. Whereas, Type II includes serous carcinoma, clear cell carcinoma and carcinosarcoma [3-5].

More recently, genomic sequencing of endometrial carcinoma has revealed four major modular subtypes among endometroid and serous carcinoma. First reported case of clear cell endometrial carcinoma was published by de Benneville in 1911. Another retrospective review of 17 cases by University of Texas have shown clear cell endometrial cancer as one of the most aggressive types of endometrial cancer with estimated survival rate of 71% at lower stages [6].

Histologically, clear cell endometrial carcinoma is characterised by clear, often eosinophilic, hobnail cells that exhibit different architectural patterns including papillary, solid and tubulocystic. Similar histologic features are found when clear cell carcinoma develops in the ovary, cervix, and vagina [7]. Limited data are available regarding the potential precursor lesions for clear cell carcinoma of the endometrium. Patients with clear cell carcinoma are more likely to present at advanced stage of the disease, are generally found to be in older age group and have a worse prognosis when compared with endometrioid carcinoma [8-10].

Here we report a rare case of a 75-year-old woman who visited our hospital due to vaginal discharge and bleeding without a specific history.

CASE REPORT

A 75 year old female, gravida 3, presented with white discharge per vaginum for 1 year. She also complained of few episodes of bleeding per vaginum since 8 months and lower abdominal pain for 15 days. There was no past history of long term drug intake. She was not on hormone replacement therapy or contraception. No history of exposure to radiation and chemotherapy was found. Also there was no family history of death due to cancer. Cancer antigen 125 (CA 125) was 84 IU/L. USG reported enlarged uterus (84x56mm) and a large mass (4x3.2 cm) in the endometrial cavity. Endometrial biopsy was sent to our department of Pathology, RIMS Ranchi for histopathological diagnosis. Age, presenting complaints, imaging and biomarker were highly suggestive of endometrial malignancy. Grossly, the tissues were received in three tiny pieces measuring 3.5cm x 1cm x 0.5cm as a whole. The tissue bits were greyish white in colour and firm in consistency. Given specimen was routinely processed as per standard protocol to obtain tissue paraffin blocks. Sections were taken and stained with hematoxylin and eosin stain. On microscopic histopathological examination, the section showed sheets of large polygonal cells with moderate amount of clear cytoplasm. Few areas of papillary architecture were also noted. There was moderate degree of nuclear atypia with acute inflammatory cell infiltrate. Further, on immunohistochemistry, ER (estrogen receptor) and PR (progesterone receptor) expression was found to be negative. Hence, by correlating the histopathologic features and the findings of immunohistochemical examination, the diagnosis of clear cell carcinoma of endometrium was made.

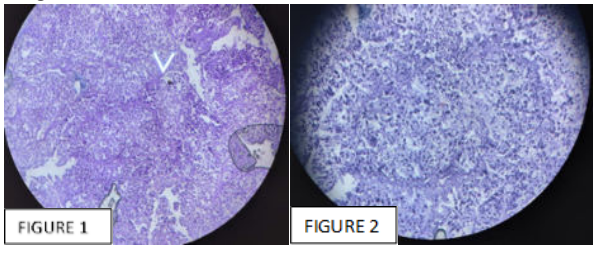

FIGURE 1 AND FIGURE 2 showing the 20X and 40X view of sheets of polygonal cells with moderate amount of clear cytoplasm. Moderate nuclear atypia and acute inflammatory cell infiltrate was also noted.

DISCUSSION

The cytologic variants, histological patterns and ultrastructure are identical in clear cell carcinomas developing in any female reproductive organs. The descriptive term clear cell carcinoma originating from the Müllerian duct was first introduced by Scully and Barlow in 1967. Hence, it is generally accepted that clear cell carcinoma is developmentally acquired from the Müllerian duct [11].

Photopulus classified 22 cases of clear cell carcinoma of the endometrium based on the extent of involvement, and their clinical stages. In their study, extent of involvement in stage I:23%; stage II:50%; and stages III and IV:27%.[12] Even though invasion was confined to less than half of the endometrium, stage III was confirmed as clear cell carcinoma as tumours of the rectal shelf having high PET signal was found.

CONCLUSION

Endometrial clear cell carcinoma is a rare and one of the most aggressive subtypes of endometrial cancer. Unlike other endometrial cancers, it does not have preceding hyperplastic stage, instead it develops from thin atrophic endometrium. Hence, it is almost impossible to identify the disease by the screening measures like Pap smear and transvaginal sonography. We are reporting this case due to the rarity and invasive nature of microscopic findings. Number of cases and studies based on endometrial clear cell carcinoma are very limited. The disease presentation is not always typical. There is a high propensity of early extra uterine spread. Extensive evaluation and further histopathological examinations of endometrial biopsies of patients with abnormal uterine bleeding having abnormal Papanicolaou smears may help in early diagnosis and better scope of treatment.

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