ENDOMETRIAL AND CERVICAL METASTASES LEADING TO THE DIAGNOSIS OF A PRIMARY BREAST CANCER: A CASE REPORT

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ABSTRACT
Breast cancer can metastasise to a vast array of organs, but in rare cases, cancer can form secondary lesions in the uterus and cervix. In our case report we have a 56-years-old female with gynecologic bleeding, bloating, and difficulty in breathing, fatigue, weakness and polyuria. After performing of dilatation and curettage, the result was endometrial and cervical metastases which show histopathological and immunohistochemical findings suggesting invasive lobular carcinoma of the breast that leads to primary breast cancer. Her status estimated the treatment. This case demonstrates the importance of adequate clinical behaviour and treatment of each of the gynaecological symptoms for establishing a cause of extragynecological origin, clarifying the patient’s overall status. It is essential to have proper and timely clinical behaviour for menopausal patients in gynaecological diseases, as the primary cause may be of extragenital origin.

KEYWORDS invasive lobular breast cancer, endometrial metastases, cervical metastases, extragynecological origin

Introduction

Metastases to the uterus are rare [1]. Although they are usually seen in the context of widely disseminated disease, they may cause gynecologic symptoms such as abnormal vaginal bleeding or abdominal pain, thus mimicking a primary gynecologic neoplasm. This is particularly true if these symptoms precede the diagnosis of a primary tumour or the previous cancer history is unknown [2, 3].

The frequency of cervical metastasis of a breast tumour is between 0.8 – 1.7% which is significantly less common than far-off malignancies to the cervix which occurs rarely and constitutes 4% of all tumours [4].

There is a potential risk of overlapping of histologic and immunohistochemical features with endometrial or cervical primaries [3, 5, 6, 7, 8].

Case Report

A 56 years old Caucasian female was admitted to our ward with gynecologic bleeding, bloating, and difficulty in breathing, fatigue, weakness and polyuria. After admission to our department and establishing the patient’s history, it was found that the patient is in meno-pause for four years and has two live births, without any accompanying diseases. From investigated tumour markers carcinoma antigen (CA) 125 was 577 U/ml, carcinoma antigen 19.9 was 12,4 U/ml, Human epididymis protein 4 (HE4) was 338 and Risk of Ovarian Malignancy Algorithm (ROMA) – high risk – 90,5. Clinical gynaecological examination: external
genitalia of multipara, normal vagina and ectocervix. A tumour in the location of the uterus is reaching 1-2 cm over the symphysis engaging the bladder. Transvaginal 2D ultrasound exam showed heterogeneous formation at the projection location of the ovary with the inability to differentiate from the uterus. Free pelvis liquid behind the uterus (Figure 1). After performing a video gastroduodenoscopy the results showed the presence of erosive gastritis and varices of oesophagus I grade. Computed tomography and ultrasound of the abdomen was performed. Abdominal computed tomography established the diagnosis of uterine neoplasm: uterus – enlarged, with inhomogeneous structure covered by hyperdense proliferation causing asymmetric dilatation of the uterine cavity. Cervix uteri – enlarged, inhomogeneous structure. The ovaries are larger than normal, diameter 60 mm, inhomogeneous structure, polycyclic contours. A significant amount of freely flowing liquid was found in the abdomen and the pelvis (Figure 2). Other findings are hydronephrosis of abdomen and cystoscopy the decision of the placing of a percutaneous pigtail nephrostomy of the left kidney and right ureter stenting with reduction of the bilateral hydronephrosis was made in the endourology department. For the diagnosis and treatment dilation and curettage was performed. The results of the histopathological examination were endocervical and endometrial mucosa with infiltration of low differentiated tumour tissue, most likely metastasis of invasive lobular carcinoma (ILC) of the breast. The immunohistochemical tests showed tumour cells positive for CK7, Estrogen; about 50% of cells are positive for GCDFP-15 and Progesterone; negative Mammaglobin, E-cadherin, Vimentin, CD45, p63, CA125, CK20, CDX2 and TTF-1. Particular immunotype is the most similar to invasive lobular carcinoma of the breast. Further investigated HER-2 is negative. (Table 1) Before diagnose was established the patient underwent lumpectomy of the tumour formation in the left breast provided by thoracic surgeons at Surgical Department of Military Medical Academy. Pathological results: fragments of breast parenchyma with infiltration of invasive lobular carcinoma whose proliferative activity is investigated by Ki67 and is about 6-7%, estrogen score 7, progesterone - score 6, HER -2 negative (1+). The stage is pT4N0M1. A multidisciplinary team discussed the patient condition and directed to the Department of Medical Oncology for chemotherapy. After one course of hormone therapy with an aromatase inhibitor and bisphosphonate, the decision of surgical debulking of pelvic tumours was made. Total abdominal hysterectomy with bilateral salpingo-oophorectomy was performed with pathological results: uterus, fallopian tubes and ovaries with carcinoma infiltration of invasive lobular carcinoma (Figure 4).

The patient is directed to continue hormone therapy in good general condition. In case of good response after the removal of the tumour formation from the small pelvis, after recovery from surgical intervention, the elimination of nephrostomy and pigtails will be considered.
Table 1 Timeline table.

| Dates          | Summaries from initial and follow-up visits                  | Diagnostic testing                                      | Interventions                                                                 |
|----------------|---------------------------------------------------------------|----------------------------------------------------------|-------------------------------------------------------------------------------|
| 31.12.16       | Bloating, and difficulty in breathing, fatigue, weakness and polyuria | Ultrasound of abdomen, abdominal computed tomography     | video gastroduodenoscopy with biopsy with result erosive gastritis and varices of the oesophagus I grade |
| 10.01.17       | Polyuria, bilateral, hydronephrosis                           | Ultrasound of abdomen, cystoscopy                        | the placing of a percutaneous pigtail nephrostomy of the left kidney and right ureter stenting with reduction of the bilateral hydronephrosis was made |
| 12.01.17       | Gynecologic bleeding                                          | Transvagal 2D ultrasound exam, Laboratory exam           | dilation and curettage                                                       |
| 26.01.17       | Histopathological result                                      |                                                         | lumpectomy of the tumour formation in the left breast                         |
| 06.02.17       | Pathological results                                          | Hormone therapy with aromatase inhibitor and bisphosphonate |                                                                               |
| 12.05.17       | Surgical debulking                                            | Transvagal 2D ultrasound exam, Laboratory exam           | Total abdominal hysterectomy with bilateral salpingo-oophorectomy            |

Discussion

Concerning women’s health cancer of the breast is the one which occurs most often, constituting around 30% of the cases. [9]. There are two subtypes of breast cancer under the histological classification invasive ductal carcinoma (IDC) and invasive lobular carcinoma (ILC). When compared both types of cancer show very different rates of occurrence with IDC appearing in 70-75% of the breast cancer cases and ILC with much lower rates of 5-20%. Regardless of its low rates shown in the cases, ILC occurs most often compared to other histological types which metastasise to the female genital tract, constituting more than 80% of all known occurrences [10]. Compared to their rate of occurrence the metastasis appear most commonly in the ovaries – 75.8% of the cases, and showing less frequently in the vagina - 13.4% of the cases, followed by the uterine corpus with 4.7%, cervix – 3.4%, vulva – 2% and fallopian tubes – 0.7% of the known cases [7]. The uterine metastases rarely occur separately from the genital tumours and have a haematogenous origin, most probably because uterine metastases are directly related to the lymphatic spread from the ovarian involvement [11]. Often the occurrence of the metastases in the uterine corpus can be asymptomatic and depends on the specific anatomic involvement site [12]. Study of Abrams et al., among 167 cases with breast cancer metastasis find out that none of the patients was free of them, and multiple organ involvements were common. Fourteen of the patients were with metastasis to the uterine [1]. Kumar and Schneider presented 11 cases of metastasis to the uterus, 5 of them were from primary breast cancer [2]. Tumours of the gastrointestinal tract are the most common cause of metastases to the uterine cervix [3]. Other known sites of primary tumours that can cause metastases to the uterine cervix are urethra, melanoma, pancreas, lungs and breast [13]. After investigation of 33 cases of distant metastasis to the cervix, Limoine and Hall found four or 12.1% of all to be from primary breast cancer [14]. Only 35 breast cancer cases with cervical metastasis were reported in the literature. There were just seven cases where symptoms preceded the initial diagnosis of a primary tumour in the breast due to the metastatic cervical tumour [15]. Patients with metastatic breast cancer located in the uterus and cervix can benefit from palliative surgery [16]. For the clinician to establish the appropriate treatment usually only the proper immunohistochemical investigation is needed, primarily if it is performed on the primary lesion. Chemotherapy should be a good choice for increasing the survival rate, but sometimes more aggressive treatment of specific cervical metastases could be achieved if feasible [17].
Surgical optimal debulking of breast cancer metastasis in different locations in abdomen and pelvis may be a prime element of the guidance of this condition and should be rethink for each patient notably [18]. The presented clinical case requires a sophisticated approach and a thorough refinement of a treatment strategy according to the patient’s characteristics and risk factors. This involves teamwork to extend survival and improve quality of life. Only strict gynaecological surveillance of patients with breast cancer can allow early detection of these secondary lesions [17].

Conclusion

It is of utmost importance for the doctors to know the possible rare places where metastases can form after breast cancer was discovered so they can easily find the location of a primary tumour. It is essential to have a proper and timely approach towards postmenopausal women with gynaecological symptoms because of the likelihood of the cause of cancer being of extragenital origin. Routine gynaecological examinations in patients with breast cancer are necessary for the timely discovery of metastases of the genital system and change the treatment plan especially in patients with advanced lobular breast cancer and suspicious symptoms. The manner of treatment of the patient depends on clinical status and extent of disease.

Disclosure Statement

There were no financial support or relationships between the authors and any organization or professional bodies that could pose any conflict of interests.

Competing Interests

Written informed consent obtained from the patient for publication of this case report and any accompanying images.

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