RECURRENCE OF TRIPLE NEGATIVE BREAST CANCER IN A 34-YEAR OLD FEMALE PATIENT DURING THE SECOND PREGNANCY – A CASE REPORT

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ABSTRACT

A 34-year-old female patient at 36th week of her second pregnancy was admitted to the 1st Department of Obstetrics and Gynecology, Medical University of Warsaw. She had a cesarean section at 32nd week of her first multiple pregnancy in 2010. She had a history of bilateral mastectomy [a right breast in 2012, partially left breast (without neoplasia) in 2013] because of carcinoma mammae - ER (-) PGR (-), HER 2 (1) according to Ventana (negative status). In the current pregnancy a cervical cerclage and pessary were inserted at 14th and 17th week of gestation, respectively. At 36 weeks she started suffering from increasing pain in the lumbar part of spine, unresponsive to medication. Due to pain and limited mobility she was qualified for an operative delivery under general anesthesia - a baby boy of 3310g was born in good general condition. However, the pain did not regress after the delivery. In addition, pain of lower limbs appeared. 20 days after cesarean section PET-CT was performed: metabolically active metastases were found in bones, lymph nodes (chest, abdomen, neck), in the right lung and pleura and the liver - breast cancer recurrence. Additional X-ray of the right femur revealed a large metastasis requiring surgical treatment. The patient was referred for systemic treatment with a poor prognosis. She died 5 months after delivery.
BACKGROUND

Breast cancer is the most frequently diagnosed malignant tumor among women in Poland. It accounts for about 20% of the total number of cancers affecting women [1]. The prevalence of Triple Negative Breast Cancer (TNBC) among all breast cancers is around 12 – 19% [2]. Pathologically, TNBC cancer cells are characterized by negative ER and PGR receptors and by the lack of over-expression of HER 2 receptors, which limits chemotherapeutic treatment options for women with this type of tumor. This cancer tends to affect women before the 4th and 5th decade of life of [3].

The coexistence of cancer and pregnancy is becoming a more frequent medical problem. The lack of management standards in such cases and limited diagnostic options are often accompanied by poor prognosis. Breast cancer is one of the most commonly encountered types of malignancy during pregnancy [4, 5]. Approximately 0.2% - 0.6% of all breast cancers occur during pregnancy (BGP) [3, 4].

CASE REPORT

A 34-year-old female during her second pregnancy was admitted to the 1st Department of Obstetrics and Gynecology, Medical University of Warsaw, at the 14th week of gestation for a preventive cervical cerclage. She had a history of preterm cesarean twin delivery at 32 weeks of gestation (2010), followed by loop excision of the cervix due to cervical dysplasia (CIN2). At 17th week of current gestation cervical pessary was inserted. Between 17th and 36th week the course of pregnancy was uneventful.

According to her medical records, the patient was diagnosed with cancer of the right breast in 2012. A histopathological examination confirmed carcinoma ductale invasive mmammeae G2. MRI scan confirmed hyperplasia of the right breast and revealed five small tumors in the left breast. A month after the diagnosis, the patient underwent the removal of the right breast together with the right axillary lymph nodes and a resection of the left breast quadrant. An immunohistochemical examination confirmed triple negative breast cancer, ER (-) PGR (-), HER 2 (1) according to Ventana (negative status). Following the operation, the patient was referred for adjuvant chemotherapy: four courses of AT (Doxorubicin and Docetaxel).

Six months after mastectomy of the right breast, the cancer reoccurred in the post-surgical scar. The patient was then subjected to another surgery with adjuvant megavoltage radiotherapy X 6 mV X 18 mV. Following the cancer recurrence, the patient was referred for genetic testing. Test results for genes: NOD2; NBS1; P16; BRCA1 showed no mutation changes, therefore no increased genetic risk for breast cancer.

Three years after the diagnosis of TNBC recurrence, the patient decided to conceive again. She consulted her oncologist, who had not seen any contraindications.

At the 36th week of gestation, the patient was again admitted to the 1st Department of Obstetrics and Gynecology in order to remove the cervical stitch before the delivery. However, the patient reported an increasing pain of the lumbar region of the spine, which significantly limited her mobility. High doses of administered analgesics did not bring any relief. The above situation accelerated the decision to deliver via cesarean section three days following the admission. A baby boy of 3310g was delivered in good general condition (10 points according to Apgar scale).

The pain did not regress after the delivery. Three weeks later, the patient underwent a PET – CT scan in her primary oncological center. The PET – CT scan showed the following: metabolically active metastases in bones, lymph nodes (chest, abdomen, neck), in the right lung and pleura, as well as in the liver – another breast cancer recurrence was diagnosed.

The patient required orthopedic surgery due to a high risk of femoral fracture. It was also necessary prior to systemic treatment. The patient was referred for palliative systemic treatment, however, after a few courses of chemotherapy she passed away in December 2016, 5 months following the delivery.

DISCUSSION

Pregnancy-associated breast cancer (PABC) is defined as a cancer diagnosed during pregnancy or in the first 12 months post partum, or at any time while the patient is lactating [6]. PABC is a rare but serious disease, with an incidence of approximately 0.3/1000 pregnancies [7]. As more and more women choose to delay childbearing until their 30s’ or 40s’, there may be an increase in the incidence of PABC, as the proportion of pregnant women at an advanced age, who are already at a higher risk of breast cancer, increases [8].

TNBC represents ~15–20% of all breast cancers and is generally more aggressive, with higher rates of relapse and decreased overall survival in metastatic disease [9,10]. The presented patient is another example proving the above. TNBC patients have a higher rate of distant recurrence and a poorer prognosis than women with other breast cancer subtypes [10,11]. Therefore, frequent follow-up examinations are so crucial - they enable early detection of recurrent cancer processes. As TNBC targets mainly females under 40-50 years of age, it soon may become a significant clinical problem, considering its correlations with a potential concurrent pregnancy.

Women with a diagnosis of breast cancer are often advised to wait at least two years after treatment before they attempt to conceive [12,13]. The above described patient waited 3 years and also consulted her oncologist prior to conceiving. Nevertheless, there are no published data to suggest that postponing conception will alter the outcome of the cancer or pregnancy. Two-year wait is an experimental suggestion and is based on anecdotal evidence. The delay is primarily to deter women who may develop early recurrence and to allow the completion of adjuvant therapies [12,13]. In such instances, doctors face a tremendous diagnostic-therapeutic challenge. Striving to save the patient’s life, they also must be cognizant of the fetus. In case of TNBC, one can hardly speak of a total treatment. This is why future mothers with a prior diagnosis of this type of cancer should be given
special care and be subject to a greater number of tests in order to improve the prospects for both the mother and the child.

Difficulties in a systemic treatment of this type of cancer challenge clinicians and researchers, prompting them to find the golden mean in treating female patients with TNBC. It is also worth mentioning that in the case of pregnant patients with a diagnosed cancer – be it primary or recurrent – the role of interdisciplinary teams is of crucial importance. Members of such teams could share their knowledge and experience, searching for optimal solutions for both the patient and the fetus.

CONCLUSIONS

TNBC belongs among cancers with a high probability of recurrence briefly after treatment. Frequent routine check-up enables early identification of recurrent cancer foci, which is extremely important when planning pregnancy after TNBC.

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ABBREVIATIONS

TNBC – Triple Negative Breast Cancer;
BC – breast cancer;
ER – estrogen receptors;
PGR – progesterone receptors;
HER 2 – human epidermal growth factor receptor 2;
PET – CT - Positron emission tomography;
NOD2 – gen NOD2 302insC;
NBS1 – gen NBS1 657del5;
P16 – gen P16 (CDKN2A) A148T;
BRCA1 – ekson 5 (C16GG), ekson 11.17 (4153delA), ekson 20 (5382insC);
PABC – Pregnancy-associated breast cancer;

REFERENCES


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Fig. 1. Metastases of recurrence of TNBC, PET-CT scan.
Fig. 2. Metastases of recurrence of TNBC, PET-CT scan. In addition, an X-ray examination of the left femur revealed a large metastasis.
Fig. 3. Large metastases of recurrence of TNBC in left femur., X-ray.

FIG. 1. METASTASES OF RECURRENCE OF TNBC, PET-CT SCAN.
FIG. 2. METASTASES OF RECURRENCE OF TNBC, PET-CT SCAN. IN ADDITION, AN X-RAY EXAMINATION OF THE LEFT FEMUR REVEALED A LARGE METASTASIS.

FIG. 3. LARGE METASTASES OF RECURRENCE OF TNBC IN LEFT FEMUR, X-RAY.