



Case Report

Inflammatory Breast Cancer in Pregnancy: A Case Report

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Abstract

Breast cancer during pregnancy is rare. Research shows that breast cancer is reported in 1 in every 3,000 pregnancies. Most women are between 32 and 38 years old at diagnosis and most women are able to carry on with their pregnancy. Rarely, some women may need to think about whether to end the pregnancy or might be possible to delay chemotherapy treatment until the pregnancy is 14 weeks and above. Deciding to end pregnancy is a very difficult decision and only the patient can make it. Timely diagnosis of breast cancer especially during booking for antenatal care is important to determine the choices which include termination of pregnancy and delay treatment until the fetus is delivered. The index patient is a 27-year-old unbooked primigravida presented via accident and emergency unit of the hospital with 7 weeks history of gradual and progressive painful swelling of the left breast, followed by the right breast. She was admitted and fine needle aspiration biopsy result confirmed stage 4 inflammatory breast cancer (IBC). She died shortly after the diagnosis of complication of the disease before the commencement of treatment.

Key words: Pregnancy, Breast, Cancer, Inflammatory, Ductal, Phenotype, Management, Prognosis

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Introduction

Breast cancer in pregnancy or pregnancy-associated breast cancer (PABC) is defined as breast cancer diagnosed during pregnancy or in the first postpartum year¹. The incidence of breast cancer in pregnancy is approximately 1 in 3,000 and can reach up to 3%². The prevalence of pregnancy - associated breast cancer may be increasing owing to delayed childbearing and despite its low incidence; breast cancer is the second most common cancer in pregnant women. In comparison with nulliparous women, breast cancer in pregnant women is histologically similar; approximately 75%-90% of the tumour are invasive ductal carcinomas with non-special-type, while

invasive lobular carcinoma and other histological types are common in patient with PABC³.

Changes in hormone levels during pregnancy cause the breasts to change. The breasts may become larger, lumpy, and or tender. These changes may make it harder for one or the doctor to notice a lump caused by cancer until it gets quite large⁴. Another reason it may be hard to find breast cancer early in pregnancy is that many women put off breast screening with mammograms until after the pregnancy. Even when women do get mammograms, pregnancy and breastfeeding can make breast tissue denser, which can make it is difficult to see an early cancer on mammogram. Because of these challenges, when a

pregnant woman develops breast cancer, it is often diagnosed at later stage than it usually is in women who are not pregnant. It is more likely to have already spread to lymph nodes and other organs ⁴.

The presentation of breast cancer may be in the form of lump, pain, nipple discharge or nipple retraction. Along with clinical breast examination, several types of imaging tests can be used to look for breast abnormalities if needed. Typically, breast ultrasound or mammogram can be done. A breast biopsy from the affected area of the breast can aid in the diagnosis and the type of breast cancer. Ultrasound scan, mammogram, and magnetic resonance imaging (MRI) are relatively safe in pregnancy. MRI using contrast medium such as gadolinium may cross the placenta to cause fetal abnormalities in laboratory animals. Because of this, MRI is not usually recommended during pregnancy. There are different biopsy methods; Fine needle aspiration biopsy, core needle biopsy and surgical punch biopsy. Other investigation tests include bone scan, chest x-ray and computed tomography (CT-scan). The common differential diagnosis of inflammatory breast cancer includes mastitis, triple-negative breast cancer and cancerous phylloides.

IBC accounts for 1-5% of all breast cancer. It is a progressive invasive ductal carcinoma with fatal outcome seen more in young black women. It is an atypical breast cancer with no discrete breast lump and no show up on mammogram, making it difficult to diagnose.

The treatment of breast cancer in pregnant women is typically like that used for non-pregnant women, especially for early - stage disease, although some adjustments might be needed to help protect the fetus. The choice of the treatment depends on the size of the tumour, when the tumour is located, if the cancer has spread and if so, how far, the gestational age of the pregnancy and overall health of the patient and personal preferences. It is generally safe to have surgery for breast cancer while pregnant. Chemotherapy seems to be safe for the fetus if given in the second and third trimester of pregnancy, but not safe in the first trimester as it may affect organogenesis. Other breast cancer treatment such as hormonal and radiation therapy are more likely to harm the baby hence not usually give during pregnancy.

Some studies found that ending a pregnancy in order to have cancer treatment did not improve a woman prognosis especially for metastatic or aggressive cancers that may need treatment right away such as inflammatory breast cancer ⁵.

Case report

An unbooked 27-year-old primigravida who presented via accident and emergency unit of the hospital at 22 weeks of gestation with history of bilateral painful breast enlargement of 6 weeks duration. Though the

pain and enlargement started on the left breast before the right breast of three weeks interval. The pain was severe enough to affect her routine daily activities and sleep at night. There was associated backache and significant weight loss on presentation. There was no history of trauma to the breast and no family history of breast cancer. No history of breast mass prior to pregnancy. She had antibiotics and analgesics occasionally with mild relief.

The examination findings were signs of severe pallor but not jaundiced and no pedal oedema. Had bilateral axillary lymph node enlargement but not tender. Her pulse rate was 90/min, regular and of good volume. The blood pressure was 110/70 mmgh and heart sounds were normal. The left breast was massively enlarged, reddish with orange peel appearance; the nipple was inverted, woody hard mass, mobile and tender. The right breast was enlarged but less compared to the left. No nipple discharge bilaterally. The liver was enlarged and tender, but spleen and kidneys were not palpably enlarged. No ascites demonstrated. The gravid uterus was 22 weeks size. She felt fetal movement. The assessment of breast tumour in pregnancy was made to rule out mastitis in pregnancy. The clinical picture of the patient's breast is shown in figure 1.

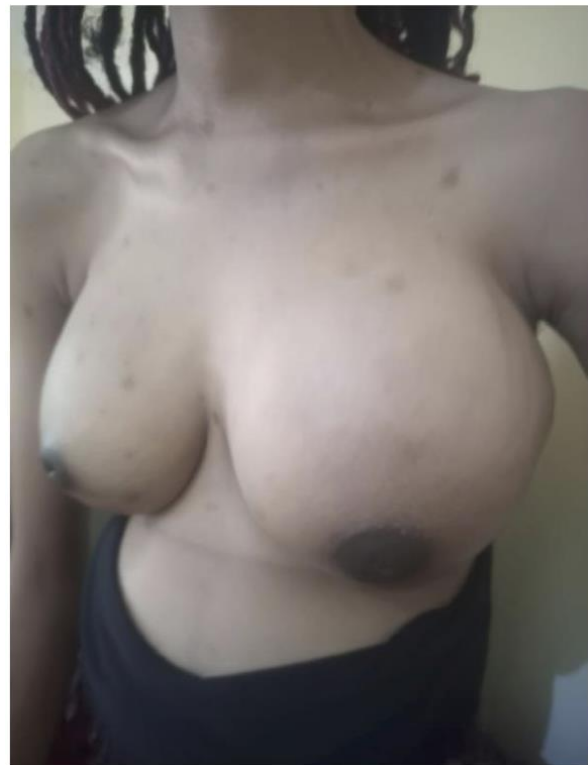


Fig.1: Clinical picture of a 27-year-old primigravida with bilateral grade 4 inflammatory breast cancer of sudden onset and fatality at 22 weeks of gestation.

Blood was collected for full blood count and differentials, serum urea, creatinine and electrolytes, liver function test, urgent breast scan and possible fine

needle aspiration biopsy when patient is stable. The packed cell volume was 15% for which the anaemia was corrected with blood transfusion. The urgent breast scan was suggestive of mastitis. The obstetrics scan revealed a viable breech presenting intrauterine fetus at 20 weeks and 2 days gestation. The fine needle aspiration biopsy done four days on admission made the diagnosis of grade 4 inflammatory breast cancer (IBC). She had intravenous antibiotics and analgesics with minimal effect on the course of the disease.

On the 6th day on admission, both surgical and Obstetric team reviewed the patient together and decided to refer the patient to surgical oncologist for expert management. Patient was followed-up but died a week after the referral from complications of the IBC before commencement of therapy.

Discussion

Breast cancer in pregnancy is rare. Research shows that breast cancer is reported in 1 in every 3,000 pregnancies ². Most women are between 32 and 38 years old at diagnosis but different from inflammatory breast cancer which is common in young age group usually less than 40 years ⁶. The index patient was 27 years old, a black race which are known to be common with IBC ⁴.

The patient presented with aggressive and painful bilateral breast swelling of 7 weeks duration that was associated with severe anaemia, backache and weight loss. This is typical of IBC as it is aggressive in nature and spread much more quickly than most common types of breast cancer ⁷. The index patient had short duration of symptoms but at presentation there was already bilateral lymph node enlargement, tender enlarged liver and severe backache. There was significant associated weight loss and anaemia that necessitated blood transfusion as her PCV on presentation was 15%.

Her breasts were enlarged, red, tender, and woody hard. This is not surprising as IBC is usually red as cancer cells blocks the lymph vessels in the skin causing breast to look inflamed. More so, IBC does not look like a typical breast cancer because it has no breast lump hence no show up on mammograms or ultrasound making the diagnosis difficult. This agrees with the findings on ultrasound at presentation when a diagnosis of mastitis was made until a fine needle aspiration biopsy done which confirmed the diagnosis. There are differential diagnoses of IBC such as triple-negative breast cancer, mastitis and cancerous phylloides.

The index patient was counselled, and she opted to disregard the pregnancy hence referred to the surgical Oncologist for treatment, but she later died before the commencement of treatment due to the aggressive nature of the tumour. This agrees with reports from other studies which stated that ending a pregnancy to have a cancer treatment does not improve a worsening prognosis as seen in the index patient.

Conclusion

In conclusion, breast cancer in pregnancy is rare, however when it occurs it is usually difficult to make early diagnosis due to other physiological changes in the breast during pregnancy. The index patient was a case of IBC with a known poor prognosis hence the fatal outcome for the young primigravida. We strongly advise that obstetricians should be on the look out for features of IBC during antenatal booking and subsequent visits for early diagnosis, though the prevalence of IBC is low, the fatality rate is high. Treatment is still based on patient well informed choice of modality of treatment.

References

1. Durrani S., Akbar S., Heena H. Breast Cancer During Pregnancy. *Cureus*. 2018; 10(7): e2941. Doi:10.7759/cureus.2941. https://www.researchgate.net/publication/326261840_Breast_Cancer_During_Pregnancy (visited on July 29, 2023)
2. Navrozoglou I, Vrekoussis T, Kontostoli E, Breast cancer during pregnancy: a mini-review. *Eur J Surg Oncol* 2008; 34: 837 - 843
3. Wang B, Yang Y, Jiang Z, Zhao J, Mao Y, Liu J. Clinicopathological characteristics, diagnosis and prognosis of pregnancy-associated breast cancer. *Thoracic cancer*. 2019; 10(5): 1060 - 1068. Doi: 10.1111/1759-7714B045-coppy July 2023
4. WHO (WHO). Breast cancer. Geneva. Switzerland: WHO 2020 Google scholar
5. Linhares S, Alammah T, Alghaudi H.A, Moller M.G. Inflammatory Breast Cancer in pregnancy and lactation- *Adv Exp Med Biol*. 2020; 1252: 143-151. doi:10.1007/978-3-030-41596-9_20.
6. Keyser EA, Staat BC, Fausett MB, Shields AD. Pregnancy associated breast cancer: *Rev. Obstet Gynecol* 2012; 5 (2): 94 - 99. doi: 10.1136/ijgc-00009577-200303001-00301. A Pubmed Abstract/crossRef. Full text/ Google scholar
7. Allouch S., Gupta I., Malik S., Al Farsi H. F., Vranic S., Al Moustafa Ala-Eddin. Breast Cancer During Pregnancy: A Marked Propensity to Triple - Negative Phenotype. *Front Oncol*. 2020; 10: 580345. doi:10.3389/fonc.2020.580345 <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC778283/> (visited on July 29, 2023)