



## Case Report

## Bilateral invasive ductal carcinoma of the breast; a case report with literature review



Zuhair D. Hammood<sup>a</sup>, Kayhan A. Najar<sup>a,b,c</sup>, Shaban Latif<sup>a</sup>, Abdulwahid M. Salih<sup>a,b,c</sup>, Fahmi H. Kakamad<sup>a,b,c,\*</sup>, Shvan H. Mohammed<sup>c</sup>, Razhan K. Ali<sup>d</sup>

<sup>a</sup> Smart Health Tower, Madam Mitterrand Street, Sulaimani, Kurdistan, Iraq

<sup>b</sup> College of Medicine, University of Sulaimani, Madam Mitterrand Street, Sulaimani, Kurdistan, Iraq

<sup>c</sup> Kscienc Organization, Hamdi Str, Azadi Mall, Sulaimani, Kurdistan, Iraq

<sup>d</sup> Shar Hospital, Sulaimani, Kurdistan, Iraq

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## ABSTRACT

**Introduction:** Carcinoma of breast is a heterogeneous disease. Using their light microscopic appearance, the invasive forms are usually divided into three main types: infiltrating lobular carcinomas, infiltrating ductal carcinomas, and other infiltrating carcinomas. This paper aims to discuss and report a case of bilateral invasive ductal carcinoma of the breast.

**Case report:** A 48-year-old female presented with bilateral breast masses of 5-month duration. On examination, she had bilateral palpable breast masses, which were hard, mobile, and irregular. On the right side, there was skin tethering and palpable axillary lymph nodes. Ultrasound examination showed a heterogeneous, irregular, ill-defined, mass-like lesion, seen in the upper outer quadrant of the right breast along with a hypoechoic, irregular mass 12\*13mm in the upper outer quadrant of the left breast. FNA showed bilateral invasive ductal carcinoma. Right axillary lymph nodes were positive for adenocarcinoma. She received 4 sessions of NACT which was followed by right-side mastectomy with axillary lymph node dissection and left-side mastectomy with sentinel lymph node biopsy.

**Discussion:** Bilateral breast carcinomas are very rare. They form 2–5% of all breast malignancies. About 2–11% of breast cancer patients develop cancer in the opposite breast in their lifetime with an incidence rate varying from 4 to 8 per 1000 people per year.

**Conclusion:** Bilateral carcinoma of the breast is very rare. Microscopically, the findings usually reveal infiltrative ductal carcinoma. The treatment of choice is bilateral modified radical mastectomy.

## 1. Introduction

Carcinoma of the breast is a heterogeneous disease. Using their light microscopic appearance, the invasive forms are usually divided into three main types: infiltrating lobular carcinomas, infiltrating ductal carcinomas, and other infiltrating carcinomas (special histological types) (ISC) [1] Bilateral breast carcinomas are rare and can be metachronous or synchronous. Invasive ductal carcinomas (IDCs) are rarer than lobular carcinomas which have more propensity to turn bilateral (Purkayastha2016). Synchronous bilateral breast cancer is very rare, accounting for 1.1% of all patients with breast cancer [2].

This paper aims to discuss and report a case of bilateral invasive ductal carcinoma of the breast. The report was arranged in line with

SCARE 2020 guidelines [3].

## 2. Case report

## 2.1. Patient information

A 48-year-old female presented with bilateral breast masses for 5-month duration. She was G7P5A2, lactated for a total of 10 years. She had regular menstrual cycles in the past. She didn't have any chronic disease. She had undergone hysterectomy for heavy vaginal bleeding due to a uterine fibroid.

\* Corresponding author. Doctor City, Building 11, Apartment 50 Sulaimani, 00964, Iraq  
E-mail address: [fahmi.hussein@uniuvsul.edu.iq](mailto:fahmi.hussein@uniuvsul.edu.iq) (F.H. Kakamad).

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## 2.2. Clinical findings

On clinical examination, there was bilateral palpable breast masses, hard, mobile and irregular. On the right side, there was skin tethering and palpable axillary lymph nodes.

## 2.3. Diagnostic assessment

On ultrasound examination; there was a heterogenous irregular ill-define mass like lesion seen in upper outer quadrant of right breast and hypoechoic irregular hypo-echoic mass 12\*13mm in the upper outer quadrant of left breast. (Bilateral U4a), and on mammogram, there was asymmetrical density at the upper outer quadrant of right breast, and irregular ill define dense mass 10\*10mm at upper outer quadrant of left breast. (Bilateral M4a).

Fine needle aspiration from right axillary lymph node was positive for adenocarcinoma.

## 2.4. Therapeutic intervention

She received 4 sessions of NACT then proceeded with right side mastectomy and axillary lymph node dissection and left side mastectomy and sentinel lymph node biopsy.

Histopathological examination on right side showed multicentric invasive ductal carcinoma of no specific type, grade I, well differentiated, extensive intermediate-high grade DCIS, comedo, cribriform and solid pattern which 5 out of 23 lymph nodes were involved, and one left side unifocal invasive ductal carcinoma, grade II, moderately differentiated, extensive intermediate-high grade DCIS, comedo, cribriform and solid pattern, 2 lymph nodes were isolated and were tumor-free.

## 2.5. Follow up

Post-operative period was uneventful. She was followed up for one year. She received 4 sessions of chemotherapy and 35 sessions of radiotherapy.

## 3. Discussion

Breast carcinoma may arise from a benign tumor or the tumors may coexist independently [4] Bilateral breast carcinomas are very rare and comprise only 2–5% of all breast malignancies with only triple-negative breast malignancies being rarer. About 2–11% of breast cancer patients will develop cancer in the opposite breast in their lifetime with an incidence rate varying from 4 to 8 per 1000 people per year. An infiltrative lobular carcinoma is more prone to multicentricity and

bilaterality as compared to infiltrative ductal carcinoma. Bilateral tumors can be either metachronous or synchronous [5]. Family history of breast cancer is a risk factor for the development of unilateral breast carcinoma; it wouldn't be an unreasonable hypothesis to think that it could be a risk factor for bilateral breast carcinoma. Some authors have submitted data supporting this hypothesis [6].

In the current case, a 48-year-old female presented with bilateral breast masses of 5-month duration. On examination, she had bilateral palpable breast masses, which were hard, mobile, and irregular. On the right side, there was skin tethering and palpable axillary lymph nodes. Ultrasound examination showed a heterogeneous, irregular, ill-defined, mass-like lesion in the upper outer quadrant of the right breast along with a hypoechoic, irregular mass 12\*13mm in the upper outer quadrant of the left breast. FNA showed bilateral invasive ductal carcinoma. Microscopically the findings revealed infiltrative ductal carcinoma, NST, Grade II, with desmoplastic stroma with few DCIS of cribriform type.

Some studies that have compared lumpectomy alone to lumpectomy followed by radiation therapy found a 50% reduction in the ipsilateral breast cancer with the addition of radiation therapy [7].

According to the literature, the majority (87%) of the patients were treated with mastectomy and axillary nodal evaluation, and most of them (73%) received postoperative radiotherapy to the locoregional area. Only 8.7% of the patients had been treated with adjuvant therapy, which usually consisted of ovarian ablation (4.5%). There was no significant difference between the therapy given to patients with invasive ductal carcinoma and that given to patients with invasive lobular carcinoma [1]. Invasive or in situ lobular carcinoma, is considered to be a risk factor for bilateral disease [6]. Several studies have evaluated the survival of patients with bilateral carcinoma. Some authors found no difference between the survival of patients with bilateral carcinoma and unilateral carcinoma [6].

In the current case, she received 4 sessions of NACT which was followed by right-side mastectomy with axillary lymph node dissection and left-side mastectomy with sentinel lymph node biopsy.

In conclusion, bilateral separate two pathologies of the breast at the same time, or following each others are possible and should be put in mind whenever both side-findings were observed.

## Consent

Written informed consent was obtained from the patient and the patient's family for publication of this case report and accompanying images. A copy of the written consent is available for review by the Editor-in-Chief of this journal on request.

## Provenance and peer review

Not commissioned, externally peer-reviewed.

## Conflicts of interest

None.

## Sources of funding for your research

None.

## Ethical approval

Approval is not necessary for case report (till 3 cases in single report).

## Research registration unique identifying number (UIN)

Not applicable.

## RCT, please state the trial registry number – ISRCTN

Not applicable.

## Author contribution

Abdulwahid M. Salh: major contribution of the idea, literature review, final approval of the manuscript. Zuhair D Hammood: Surgeon performing the operation, final approval of the manuscript. Razhan K. Ali, Fahmi H. Kakamad: Writing the manuscript, literature review, final approval of the manuscript. Kayhan A. Najjar, Shaban Latif, Shvan H. Mohammed: literature review, final approval of the manuscript.

## Guarantor

Fahmi.hussein@univsul.edu.iq.  
Fahmi Hussein Kakamad.

## Appendix A. Supplementary data

Supplementary data to this article can be found online at <https://doi.org/10.1016/j.amsu.2022.103743>.

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