CASE REPORT https://doi.org/10.3126/njr.v13i1.57833

A Case Report on Aggressive Breast Cancer

Rayamajhi K, Ghimire RK, Kayastha B

Department of Radiology and Imaging, Nepal Mediciti Hospital,
Lalitpur, Nepal

Received: May 19, 2023 **Accepted:** June 19, 2023 **Published:** June 30, 2023

Cite this paper:

Rayamajhi K, Ghimire RK, Kayastha B. A Case Report on Aggressive Breast Cancer. *Nepalese Journal of Radiology* 2023;13(1):32-34. **https://doi.org/10.3126/njr.v13i1.57833**

ABSTRACT

Human epidermal growth factor receptor-2 (HER 2) positive breast cancers represent a highly aggressive breast cancer subtype and are associated witha worse prognosis. They tend to be more aggressive with lower survival rates but with a better prognosis than the triple-negative subtype.

Keywords: *Humans; Prognosis; Survival Rate*

INTRODUCTION

The incidence of breast cancer has been increasing and it is the leading cause of death in women worldwide. Several factors like molecular subtypes, tumour grade and axillary lymph node status impact the prognosis of breast cancer with molecular subtypes being the most important.[1]

Human epidermal growth factor receptor 2 (HER2) overexpression is seen in 20% of breast cancer cases and has a lower survival rate. HER2+ patients can be hormone receptor-positive (HR+) or hormone receptor-negative (HR-). HER2+/HR- tumours have a higher tendency to metastasize to the brain compared to bone, are more likely to cause death within the first five years of diagnosis, and have a more favourable response to neoadjuvant chemotherapy. Here, we report a case report ofan aggressive transition from BIRADS 3 lesion to BIRADS 5 within 8 months duration. IHC showed HR negative HR-/ HER2 positive breast cancer.[2,3]

CASE REPORT

A 66-year female was referred from surgical OPD with a complaint of a palpable lump in her right breast for the last 15 days. This patient had done a screening mammogram 8 months back (Figure 1) which showed two nodules measuring 6 mm and 7 mm respectively with circumscribed margins in the central part of the right breast. BIRADS 3 was assigned. A diagnostic mammogram this time (Figure 2) revealed an approximately 29.9 x 29.2mm in size round high-density mass with indistinctmargins in the outer central quadrant of the right breast. No suspicious calcifications were seen. Ultrasound showed an irregular hypoechoic

Correspondence to: Dr. Kundana Rayamajhi
Department of Radiology
Nepal Mediciti Hospital
Lalitpur, Nepal
Email: *kundanapuku@gmail.com*

mass with angulated margins at the 7 o'clock position. An approximately 19.5 x 8.7mm sized lymph nodewith cortical thickening of 7.0 mm was seen inthe right axilla. USG-guided true cut biopsy of the mass and FNAC from the right axillary lymph node was done. Histopathological examination revealed invasive carcinoma of no special type grade 3. DCISwas present. IHC was ER -, PR - , Her2 neu 3+ andKi 67-40%.The patient underwent modified radical mastectomy (MRM) of the right breast with axillarylymph node dissection. Histopathology revealed anapproximately 2.5 x 2.5 x 2.5cm invasive carcinomaof no special type with an overall grade of 3. DCISwas present. Nine out of 18 dissected lymph nodes were positive for tumour (9/18). The margins wereclear. The final pathologic staging was (pTNM, AJCC 8th edition) pT2N2a.

The patient is currently receiving TCH protocol (Taxotere or Taxol, carboplatin, and Herceptin) adjuvant chemotherapy 3 weekly and targeted therapy (trastuzumab 3 weekly) for 1 year with adjuvant radiotherapy.

Figure 1: 1a). *Mediolateral Oblique view of previous digitalmammogram done on 2/6/2022.* ***2b).*** *Craniocaudal view of previous digital mammogram done on 2/6/2022*

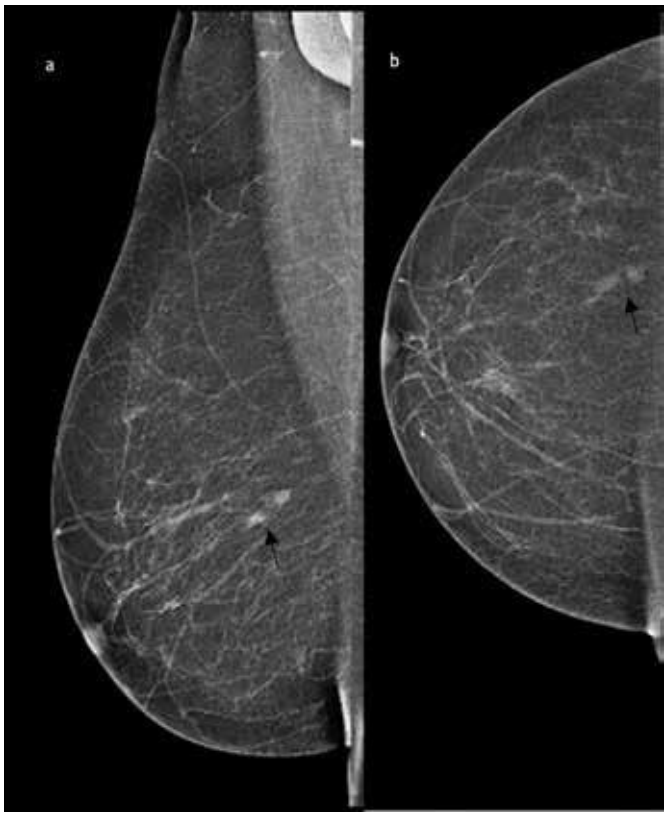
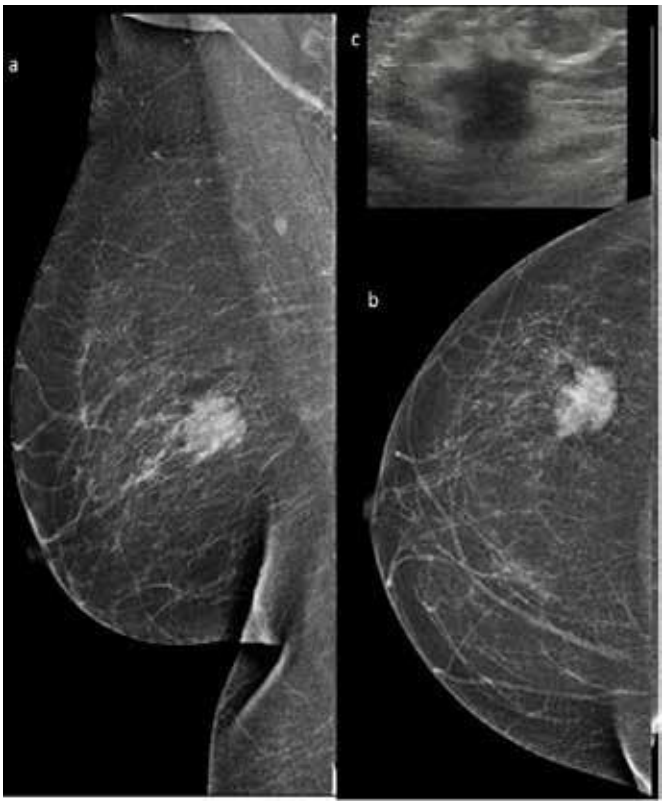


Figure 2: 2a). *Mediolateral Oblique view of digital mammogram done later on 27/02/2023,* ***2b).*** *Craniocaudal view of digital mammogram done later on 27/02/2023,* ***2c).*** *Targeted ultrasound of the right breast showing an irregular hypoechoic lesion with angular margins seen in the lower outer quadrant of the right breast*



DISCUSSION

For all invasive breast cancers, an average of 191 days of tumour volume doubling time (TVDT) has been previously reported. The doubling time is significantly shorter for TN and HER2+ tumours compared to luminal breast cancers according to a previous study. High-grade tumour, ER negativity, younger age and elevated Ki-67 index were associated with shorter durations of TVDT. A study done in Canada found that triple-negative cancers (TNBC) and ER--/HER2 + tumours are diagnosed more frequently as interval cancers than as screen-detected and it was due to the more rapid growth of these tumours and not to a failure to identify these tumours mammographically.[4,5,6,7,8,9]

In our case, ER /PR was negative with a high Ki- 67 40-%. HER2-positive breast cancers have an increased risk of local recurrence and metastases with poorer overall prognosis. However, treatment

with targeted monoclonal antibody therapies such as trastuzumab and pertuzumab provides better local-regional control and leads to improved survival outcomes.

CONCLUSION

HER2-positive breast tumours are a highly aggressive subtype with a poor prognosis. Although they often have poorer survival rates and are more aggressive, their prognosis is generally better than that of the triple-negative subtype.

CONFLICT OF INTEREST

None

SOURCES OF FUNDING

None

REFERENCES

1. Wang S, Wang Z, Li R et al. Association between quantitative and qualitative image features of contrast-enhanced mammography and molecular subtypes of breast cancer. *Quant Imaging Med Surg* 2022;12(2):1270-80. https://doi.org/10.21037/qims-21-589
2. Chia S, Norris B, Speers C, Cheang M et al. Human epidermal growth factor receptor 2 overexpression as a prognostic factor in a large tissue microarray series of node-negative breast cancers. *J Clin Oncol* 2008;26(35):5697-704. https://doi.org/10.1200/jco.2007.15.8659
3. Vaz-Luis I, Ottesen RA, Hughes ME et al. Impact of hormone receptor status on patterns of recurrence and clinical outcomes among patients with human epidermal growth factor-2-positive breast cancer in the National Comprehensive Cancer Network: a prospective cohort study. *Breast Cancer Res* 2012;14(5):1-4. https://doi.org/10.1186/bcr3324
4. Otten JD, van Schoor G, Peer PG et al. Growth rate of invasive ductal carcinomas from a screened 50–74-year-old population. *J Med Screen* 2018;25(1):40-6. https://doi.org/10.1177/0969141316687791
5. Ryu EB, Chang JM, Seo M, Kim SA, LimJH, Moon WK. Tumour volume doubling time of molecular breast cancer subtypes assessed by serial breast ultrasound. *Eur Radiol* 2014;24(9):2227-35. https://doi.org/10.1007/s00330-014-3256-0
6. Lee SH, Kim YS, Han W et al. Tumor growth rate of invasive breast cancers during wait times for surgery assessed by ultrasonography. *Medicine* 2016;95(37):e4874. https://doi.org/10.1097%2FMD.0000000000004874
7. Nakashima K, Uematsu T, Takahashi K et al. Does breast cancer growth rate really depend on tumor subtype? Measurement of tumor doubling time using serial ultrasonography between diagnosis and surgery. *Breast Cancer* 2019;26(2):206-14. https://doi.org/10.1007/s12282-018-0914-0
8. Zhang S, Ding Y, Zhu Q, Wang C, Wu P, Dong J. Correlation factors analysis of breast cancer tumor volume doubling time measured by 3D-ultrasound. *Med Sci Monit* 2017;23:3147- 53. https://doi.org/10.12659%2FMSM.901566
9. Holloway CM, Jiang L, Whitehead M, Racz JM, Groome PA. Organized screening detects breast cancer at earlier stage regardless of molecular phenotype. *J Cancer Res Clin Oncol* 2018;144(9):1769-75. https://doi.org/10.1007/s00432-018-2687-4