Dr. D.Y. PATIL VIDYAPEETH, PUNE
(DEEMED UNIVERSITY)

Department of surgery

Dr. D.Y Patil Medical College

A Rare Case of Metaplastic Carcinoma of Breast

Dr Abhijeet Shrivastava
Resident

Introduction

- Metaplastic breast carcinoma is a rare type of invasive breast carcinoma, term coined by World Health Organisation, which refers to a heterogeneous group of neoplasm characterized by an intimate admixture of adenocarcinoma with dominant areas of spindle cell, squamous or mesenchymal differentiation.

- Incidence- less than 1% of all invasive breast carcinomas.

- Mean age of presentation – 48 to 59 years.

- According to the morphology, WHO classified tumor as-

A. Metaplastic carcinoma of no specific type
    - Low-grade adenosquamous carcinoma
    - Squamous cell carcinoma
    - Spindle cell carcinoma

B. Metaplastic carcinoma with mesenchymal differentiation
    - Chondroid differentiation
    - Osseous differentiation

C. Mixed metaplastic carcinoma.

D. Myoepithelial carcinoma.

Case Report

- A 45 year old postmenopausal female presented with a complaint of lump in the right breast since 9 month.
- No other relevant complaints.
- No h/o DM,HTN,TB, OC pills use.
- No h/o breast , ovarian or colonic malignancy in any first degree relatives.
- Menopause since 2 years.

- 3/28 regular menstrual cycles.
- Married at the age of 23 years.
- G2P2L2A0; First delivery was at 26 yrs and 2nd delivery was at 29 years of age; both children were breast fed for 2 years.

O/E-

- Conscious ,co-operative and well oriented to time, place and person.
- Well built and well nourished with a BMI of 20.5 kg/m2.
- Pulse Rate: 80/min, normal in volume, rhythm and character.
- Blood Pressure:110/70 mmHg.
- No evidence of Pallor, cyanosis, clubbing, icterus or pedal edema.

L/E-

- Right breast and axilla-
- Skin around the NAC thickened. Paeu-d orange present.
- No local rise in temp and non tender.
- A 4x3 cm solitary lump present in the retroareolar region extending into upper outer quadrant, hard in consistency with irregular margins and uneven surface.
- Single right level I axillary lymphnode palpable; mobile and firm in consistency.

- Left breast and axilla-Normal.

Systemic examination- WNL.

PR/PV- WNL

Clinical diagnosis

Carcinoma of breast stage IIIB (T4N1M0)

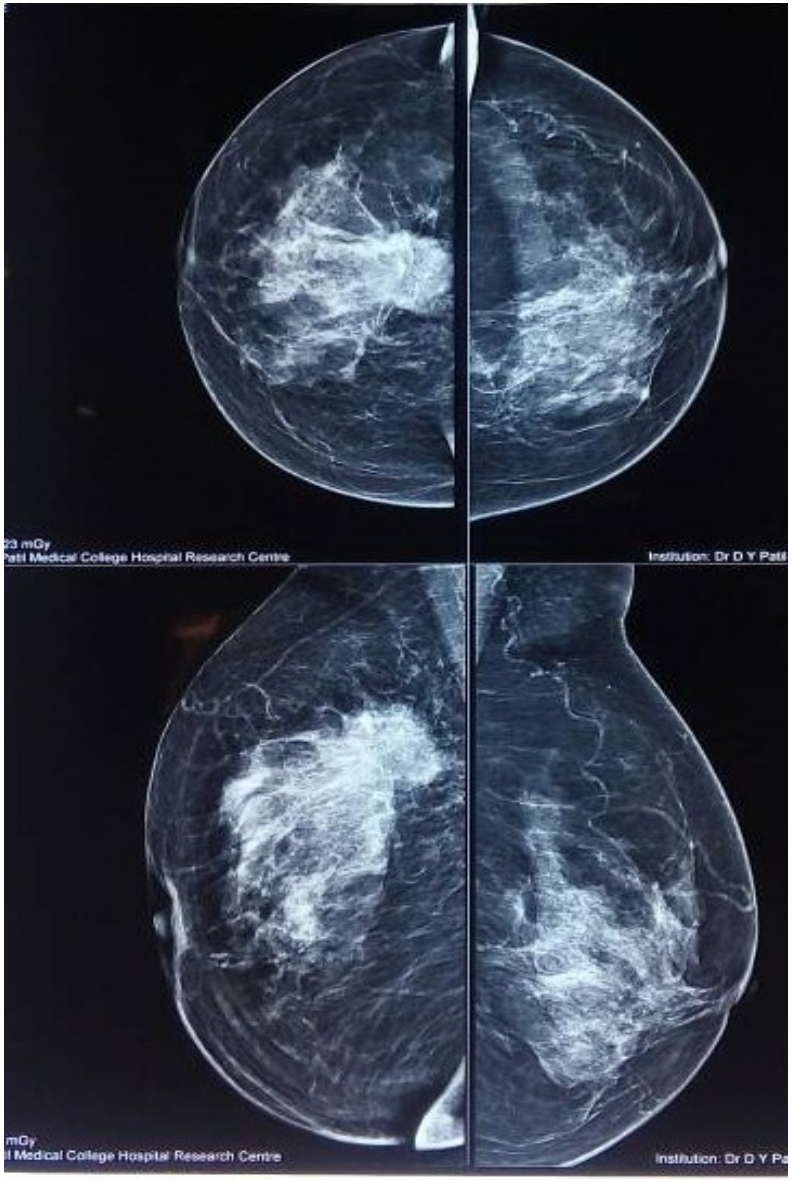
Investigations

- All **routine investigations** including X-ray chest and ECG -WNL.

- **B/L Breast USG** reveals an irregular shaped hypoechoiec lesion with multilobulated margins in right breast approx 12-1 o clock position. A well defined asymmetrically enlarged hypoechoic lymph node noted in right axilla.

- **B/L Breast Mammography** shows partially defined lesion measuring 4 x 3.2 x 3 cm in size, with irregular shape and indistinct anterior margin in right breast upper outer quadrant at 12 to 1 o clock position,, spiculated margins and micro calcifications in the centre;

  BIRADS 4C



Medio-lateral oblique view

Cranio-caudal view

- **Tru cut biopsy**: Moderately differentiated Infiltrating Ductal carcinoma .

- **IHC**: Triple negative (ER/PR/Her2-*neu).*

- **HRCT thorax** : well defined lesion measuring approx 3.3x3.2x3.7 cm with thick enhancing wall and non enhancing central area noted in the right breast at 12'o clock position. An enlarged lymph node of approx 2.6 x 2.2 cm is seen in right axilla. probably neoplastic etiology.

  Both the lung fields appears normal.

- **CECT abdomen and pelvis** : No evidence of metastasis.

- **2D ECHO-**normal

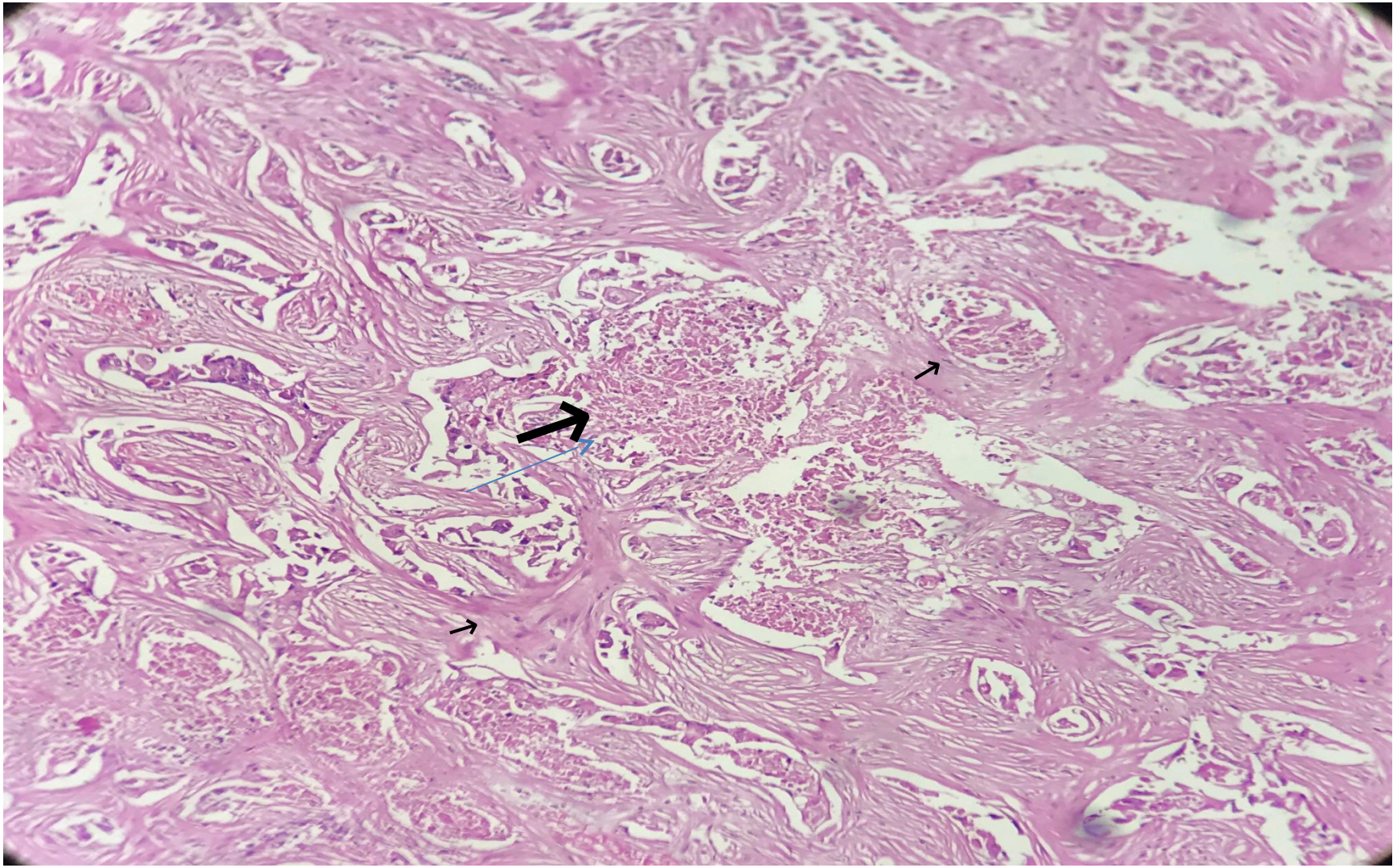
- **Auchincloss Modified Radical Mastectomy** was done. Post operative recovery was uneventful.

- **Histopathology examination-**

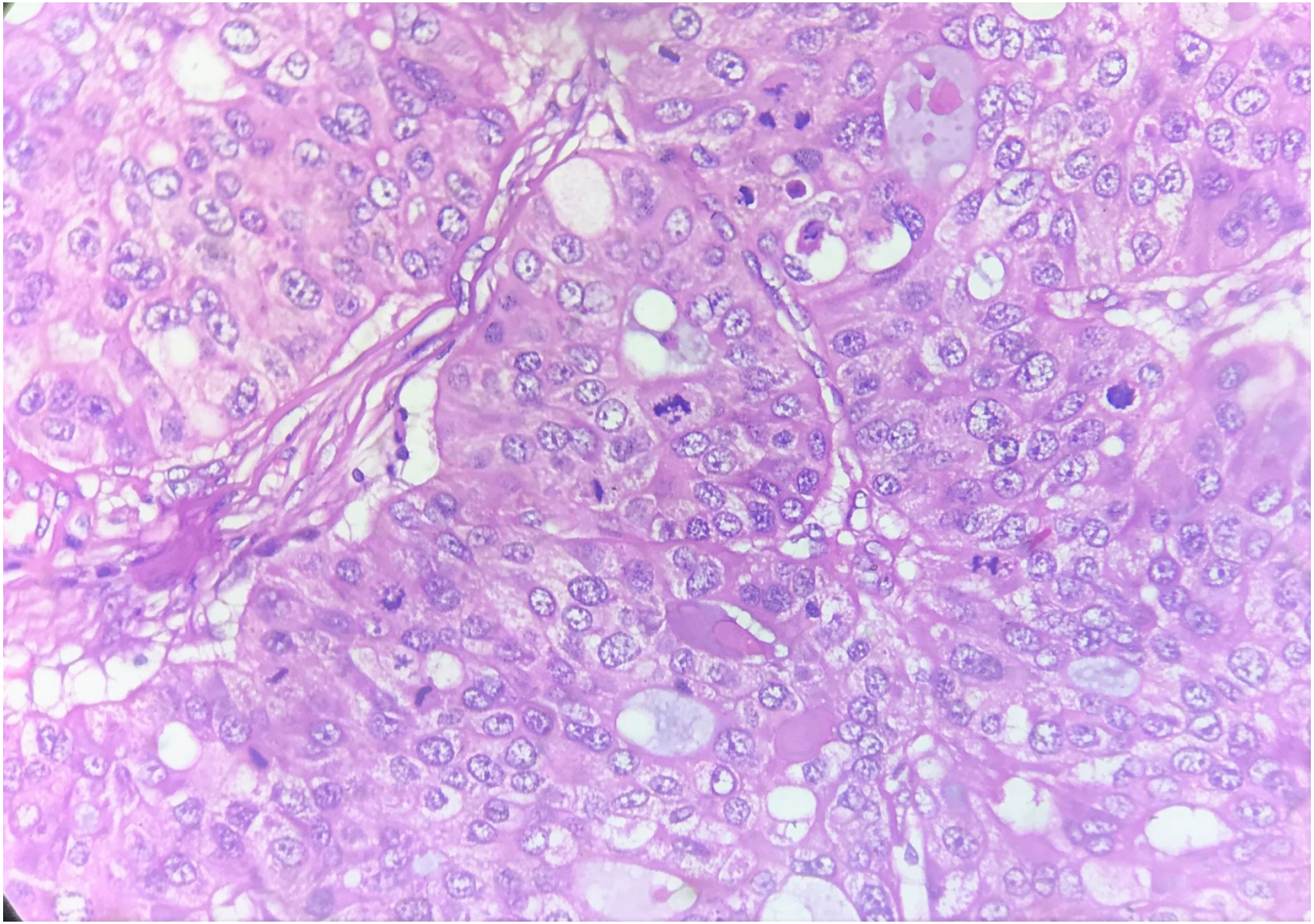
  s/o Moderately differentiated adenosquamous carcinoma with all margins free of tumor.

  Lymph nodes-1/11 lymph nodes were positive for the tumor.

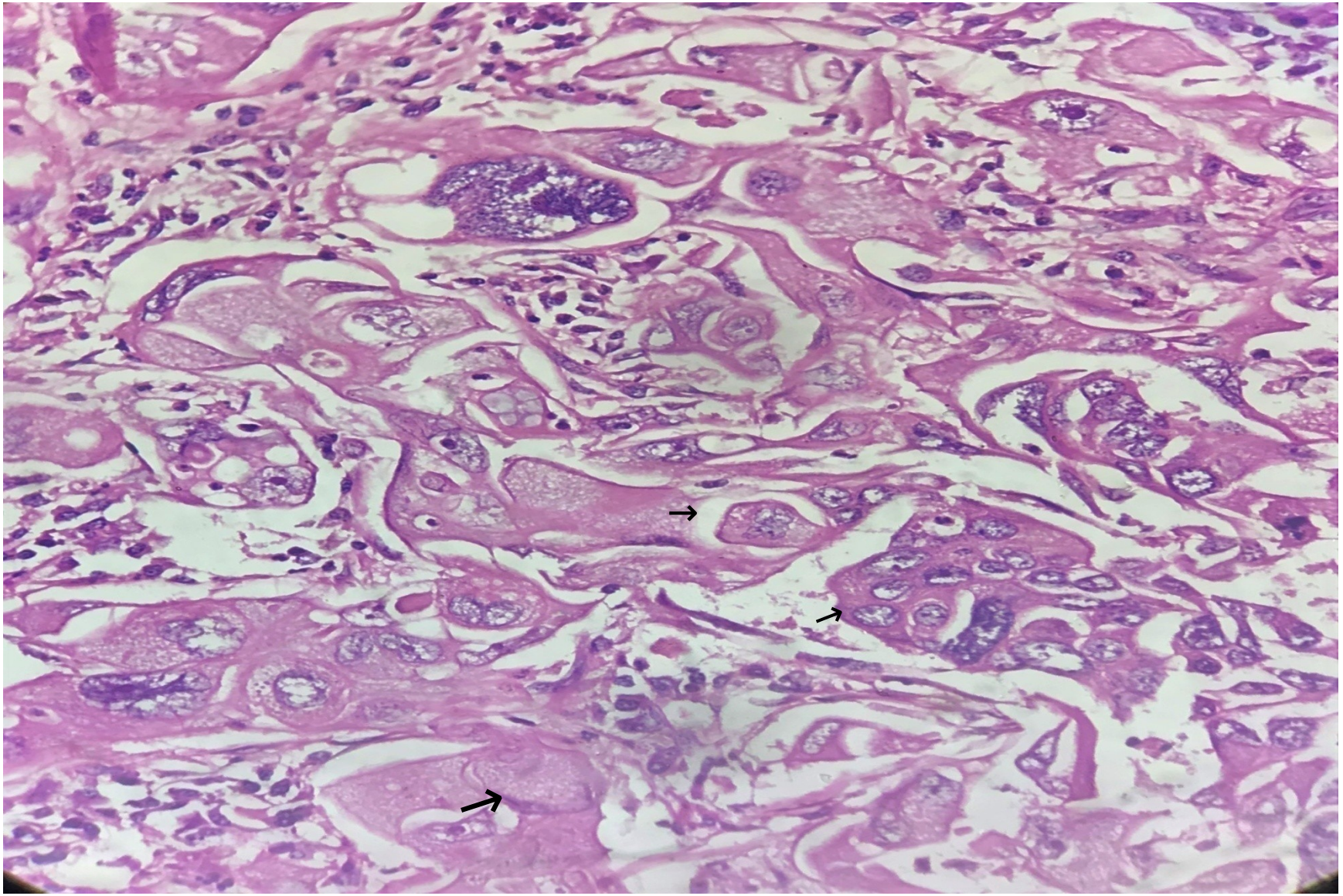
  Bloom-Richardson score- 6



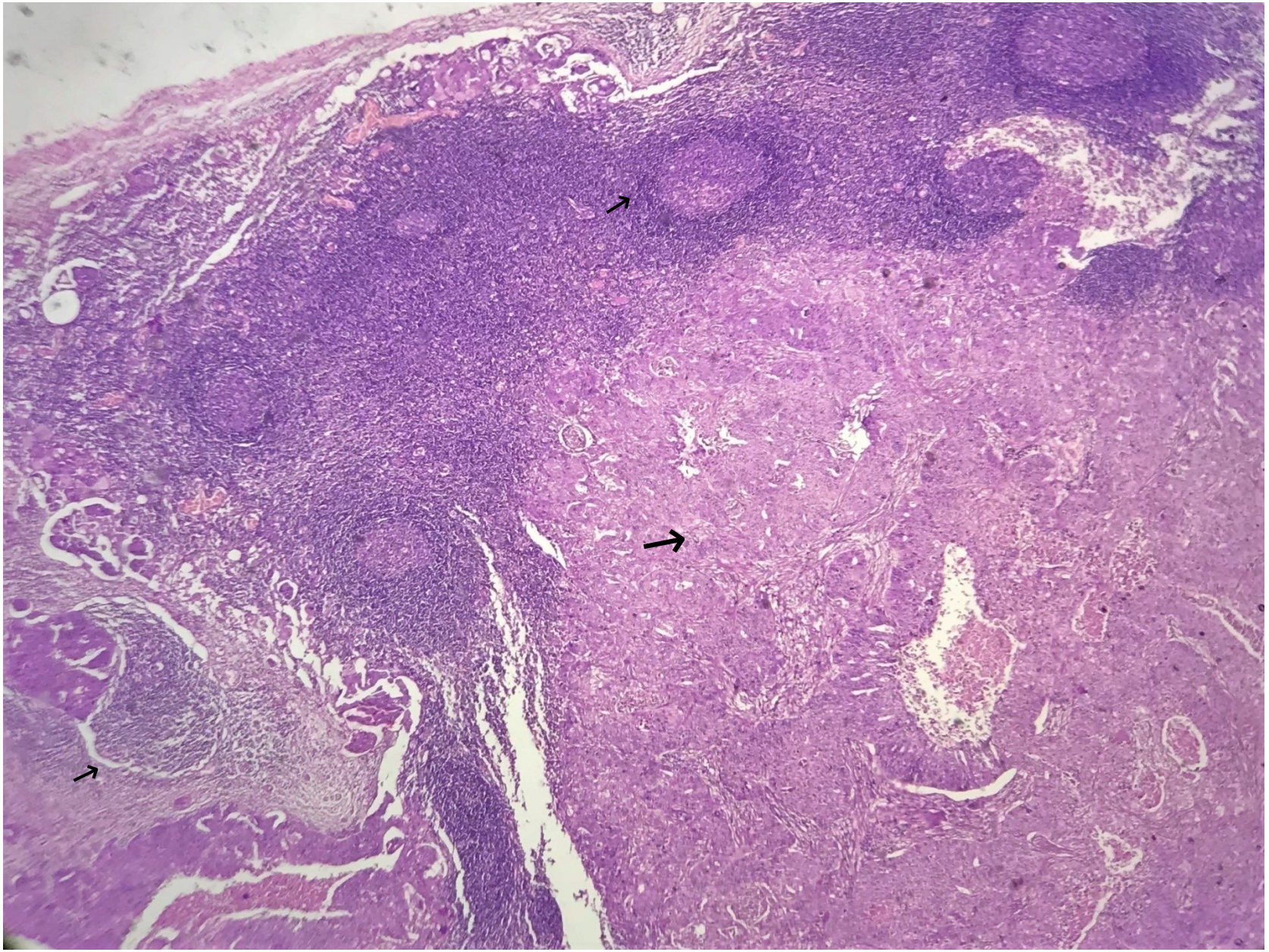
Low power view of the H & E- section showing tumor cells arranged in nests, sheets
And glandular pattern with areas of necrosis and extensive demoplasia.



HP view showing tumor islands in Squamoid differentiation with numerous abnormal mitosis



n power view showing squamoid pattern of tumour cells with epithelial pearl
nation



h node showing large area of tumour infiltration with hyperplastic lymphoid folli

- 4 cycles of 5Fluorouracil, Adriamycin, Cyclophosphamide given.
- 4 cycles of taxane given.
- At present, she has been started on radiotherapy(EBRT).

Discussion

- Metaplastic carcinoma of the breast was first described in 1973 by **Huvos et al**.

- In **1989–1990 Wargotz and Norris** classified metaplastic breast cancer into 5 subtypes: Spindle cell, Squamous cell, matrix-producing, Carcinosarcoma, and Metaplastic carcinoma of the breast with osteoclastic giant cells.

- Metaplastic cancers **ER,PR,Her2-*neu*** negative tend to have a worse prognosis than other triple negative breast cancers.

- Incidence- 0.2 to 1% of all invasive breast carcinomas.

- 2 year survival rate range from 30% to 40%.

- Adenosquamous carcinoma of the breast is a rare metaplastic carcinoma, which contains glands and tubules with solid nests of squamous cells in between.

- Incidence rate of 0.3% among all invasive breast carcinoma.

Poor prognostic factors of metaplastic carcinomas

- High grade tumor,
- Tumour size of >3-4 cm,
- No axillary nodal metastasis,
- Triple negative (ER,PR, Her2-*neu*),
- Stages of tumor- **Stage 3.**

Differentiating features of Metaplastic carcinoma of breast from other invasive ductal carcinoma

- Age group-48-59years
- Rapid growing tumor
- Less frequency of axillary lymph node involvement
- Incidence of local recurrence is high
- Poor response chemo-radiation.
- Survival rate-2 years (30 to 40%).

Treatment-

- Low grade tumor - Surgery (breast conservative surgery or modified radical mastectomy).

- High grade tumor - Surgery (modified radical mastectomy) + Chemo-radiotherapy.

  combination chemotherapy such as taxotere 160 mg and carboplatin 6 mg/ml/min (dosed to attain area under the concentration-time curve) for 6 cycles 3 week apart, followed by **Involved-field radiation therapy.**

- If **HER2-*neu* positive** - hormonal therapy (herceptin as choice of drug).

Conclusion

- Metaplastic carcinoma of the breast is a rare type of breast cancer that is typically more aggressive and can be subcategorized mainly based on the pathological findings.

- Histopathological tissue diagnosis is essential to distinguish metaplastic carcinoma of the breast from other breast cancers for proper management of patient .

- The tumour presenting as a large mass, higher pathological grade and triple negative has very poor prognosis.

- Surgery is the choice of treatment because the tumor has poor response to the chemotherapy.

- The treatment of metaplastic carcinoma of the breast depends on the grade of tumor. The approach is multidisciplinary which includes surgery followed by chemo- radiotherapy.

- Overall outcome is poor.

References

1. *Luini A, Aguilar M, Gatti G, et al.:* ***Metaplastic carcinoma of the breast, an unusual disease with worse prognosis: the experience of the European Institute of Oncology and review of the literature.*** *Breast Cancer Res Treat 2007,* ***101:*** *349–353. 10.1007/s10549-006-9301-1*
2. *Tavassoli FA:* ***Classification of metaplastic carcinomas of the breast.*** *Pathol Annu 1992,****27****(Pt 2):89–119.*
3. *Fritz A, Percy C, Jack A, Solin LH: In International Classification of Diseases of Oncology 3. Geneva: World Health Organization; 2000.*
4. *Rayson D, Adjei AA, Suman VJ, Wold LE, Ingle JN:* ***Metaplastic breast cancer: Prognosis and response to systemic therapy.*** *Ann Oncol 1999,****10****(4):413–419. 10.1023/A:1008329910362*
5. *Weigelt B, Kreike B, Reis-Filho JA:* ***.*** *Breast Cancer Res Treat 2009,* ***117:*** *273–280. 10.1007/s10549-008-0197-9*

6. *Tse GM, Tan PH, Putti TC, et al.: J Clin Pathol 2006,* ***59:*** *1079–1083. 10.1136/jcp.2005.030536.*
7. *Al Sayed AD, El Weshi AN, Tulbah AM, et al.:* ***Metaplastic carcinoma of the breast clinical presentation, treatment results and prognostic factors.*** *Acta Oncol 2006,* ***45:*** *188–195. 10.1080/02841860500513235P*
8. *Jung SY, Kim HY, Nam BH, et al.:* ***Worse prognosis of metaplastic breast cancer patients than other patients with triple negative breast cancer.*** *Breast Cancer Res Treat 2000,* ***120:*** *627–637.*
9. *Okada N, Hasebe T, Iwasaki M, et al.: Hum Pathol 2010,* ***41:****960–970. 10.1016/j.humpath.2009.11.013*
10. *Bae SY, Lee SK, Koo MY, et al.:* ***The prognoses of metaplastic breast cancer patients compared to those of triple negative breast cancer patients.*** *Breast Cancer Res Treat 2011,* ***126:*** *471–478. 10.1007/s10549-011-1359-8.*

THANK YOU