ADENOMYOEPITHELIOMA WITH CARCINOMA OF THE BREAST

A Case Presentation

By: Dr Zama Mtshali
Division of Anatomical Pathology, School of Pathology,
University of the Witwatersrand and National Health
Laboratory Services, Johannesburg
Email: mohlezamo@yahoo.com
NELSON MANDELA

CENTENARY
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INTRODUCTION

- Adenomyoepithelioma (AME) with carcinoma:
  - Rare malignant tumour
  - Proliferation of malignant myoepithelial cells
  - Only one case encountered in our department
CLINICAL HISTORY

- 69 year old female
- History of a left breast mass
- Left mastectomy
- Sentinel lymph node biopsy
MACROSCOPY

- Left mastectomy with a tumour
  - Located at the lower outer quadrant
- Dimensions:
  - 50 x 45 x 35 mm
- On section:
  - Circumscribed, cream-coloured, irregular border
MICROSCOPY

- Well circumscribed, unencapsulated and multilobulated tumour with central necrosis

- Proliferation of myoepithelial cells around luminal epithelial cells, lining the ducts
MICROSCOPY

- Epithelial cells not atypical
- Exhibit a cuboidal epithelium
- Microscopic satellite tumour deposits at the periphery of the tumour
Microscopy

Neoplastic myoepithelial cells show epithelioid cytomorphology.

Marked nuclear pleomorphism, irregular nuclear contours, vesicular chromatin and clear cytoplasm.
MICROSCOPY

- Modified Bloom and Richardson Grading System
  - Grade 3

- Clear of the surgical deep margins
<table>
<thead>
<tr>
<th>POSITIVE IHC</th>
<th>NEGATIVE IHC</th>
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<tbody>
<tr>
<td>• SMA</td>
<td>• ER (variable staining)</td>
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<tr>
<td>• MSA</td>
<td>• PR</td>
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<tr>
<td>• H-caldesmon</td>
<td>• CerB-B2</td>
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<td>• Ki67 in myoeps.</td>
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<td>• p63</td>
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<td>• S100 / Calponin</td>
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DISCUSSION

- AME with Ca is a biphasic tumour characterised by proliferation of the phenotypically variable myoepithelial cells around small epithelial lined spaces.
- Malignant transformation can also involve dual population of epithelial & myoepithelial cells.
- The age of patients with AME with Ca ranges from 26 to 82 yrs, with an average of around 60 yrs.
DISCUSSION

- The myoepithelial cells can have diverse cytomorphology such as spindle, epithelioid and glycogen-rich clear cells.
- Apocrine, squamous metaplasia and sebaceous differentiation can be seen.
- When the spindle cells cpt predominates, the epithelial lined spaces may be difficult to identify, which may lead to the confusion with a leiomyoma.
- When the biopsy material is limited, sampled tissue may even be mistaken for invasive carcinoma, especially in tumors that have compact glandular structures.
- Therefore excisional biopsy is recommended to make an accurate diagnosis.
DISCUSSION

- Tubular variant has been hypothesized to have a higher risk of recurrence.
- The epithelial component when malignant, can give rise to invasive carcinoma of no special type (NST), undifferentiated carcinoma and metaplastic carcinoma.
- The main histologic criteria for predicting malignancy of AME with Ca include cellular and nuclear pleomorphism, high mitotic figures in 10 HPF, surrounding tissue invasion and necrosis.
DISCUSSION

- The metastatic potential is related to the grade of the transformed component and the tumour size, i.e. >2cm.
- Most metastasis involve the lungs, liver, bone and brain.
- Mastectomy or breast-conserving surgery with radiation and axillary dissection are indicated for AME with Ca
- However, the treatment for metastatic AME has not been determined, and the prognosis of malignant AME with distant metastases has been very poor, with the time of recurrence varying after initial treatments
One case of AME with carcinoma was reported to show a mutation of the TP53 gene and the malignant areas may be aneuploid
TAKE HOME MESSAGE

- Recognition of the biphasic cellular elements and the characteristic overall architecture of the tumors in combination with immunohistochemistry are essential to establish the correct diagnosis
- Multilocular Tx + Compressed ducts + Atypical myoepithelial cell prolif.
- IHC : SMA + EMA + Ki67
- Poor prognostic factors : Grading + Size = Metastasis
- Further understanding of the molecular pathology is also required
ACKNOWLEDGEMENTS

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It always seems impossible until it’s done.

- Nelson Mandela
REFERENCE
