Malignant Adenomyoepithelioma of the Breast with Lymph Node Metastasis

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Introduction

• Breast Adenomyoepithelioma is a benign neoplasm, resembling adenomyoepithelioma of salivary glands.
• Uncommon, mean age 60 years.
• Considered a variant of intraductal papilloma.
• It usually presents as a palpable mass.
• Treatment Complete local excision.
• Histologically, it is characterized by biphasic proliferation of epithelial cell and myoepithelial cell
• There is potential for local recurrence and, rarely, distant metastasis.

• Malignant adenomyoepithelioma of the breast is rare with around 30 cases reported in the literature.

• Malignant change can be either a pure myoepithelial carcinoma or a combined malignant adenomyoepithelioma.
• Metastases associated with these malignant tumours are usually haematogenous.

• Axillary lymph node metastases are thought to be unusual.

• It has been recently suggested that axillary lymph node dissection is not indicated unless clinically palpable.
CASE

• A 63-years-old woman presented with a mass in the left breast.
• A core biopsy showed intraductal papilloma with atypical hyperplasia (B3).
• This was removed by wide local excision.
• Grossly, the biopsy included two small greyish white soft nodules, each measuring 1 cm in diameter.
Microscopic examination

- showed multiple intraductal papillary lesions.
- In some areas, the papillae were covered by a single layer of epithelial cells with underlying several layers of myoepithelial cells (positive for SMA, p63, and CD10)
- Diagnosed as adenomyoepithelioma.
myoepithelial component (SMA)
• The epithelial cells were ER negative and many were CK5 and 14 positive, indicating that they are basal-like rather than luminal type.

• Other areas of the lesion consisted of solid proliferation of a mixture of these epithelial and myoepithelial cells and showed
  – abundant mitotic figures
  – marked nuclear pleomorphism
  – evidence of peripheral invasion.
Malignant component - solid area showing dual-cell population with marked nuclear pleomorphism.

Malignant component - invasive edge of the lesion CK5.
• The features were considered as a malignant adenomyoepithelioma developing in continuity with a benign adenomyoepithelioma of the breast.

• The lesion reached the excision margins and re-excision was recommended.
• A mastectomy was carried out with axillary lymph node sampling.
• Pathological examination showed:
  - a partly cystic and partly solid tumour measuring 7x4x4.5 cm,
  - With similar features to those seen previously
  - consisted of a mixture of epithelial and myoepithelial cells arranged in a benign adenomyoepithelioma fashion in some areas,
  - which merged with areas showing malignant features as those described above with invasion of adjacent breast tissue.
Lymph Nodes Examination:

• One of the two dissected lymph nodes showed a 1.8 mm metastatic focus

• positive for CK8/18, CK19, AE1/AE3, CK5/6, CK14, SMA, and CD10

⇒ indicating the presence of epithelial and myoepithelial elements.
Lymph node metastasis - **CK5** staining both epithelial and myoepithelial elements
**CK19** staining epithelial element

**SMA** staining myoepithelial element
Discussion

• Malignant adenomyoepithelioma of the breast is generally preceded by a long history of a stable breast mass followed by rapid growth phase.

• Grossly, the tumour is usually nodular and may show cystic changes as well as necrosis and foci of calcification.
• Histological features of malignant transformation include
  – nuclear atypia
  – increased mitotic activity
  – necrosis, and
  – infiltrative growth pattern.

• In our case, all these features were present, except for necrosis.
• Malignant adenomyoepithelioma has the potential for distant metastases usually through hematogenous spread.

• These typically occur in lesions larger than 2 cm and in those with high-grade malignant component.

• Distal metastasis were described in upto 32% of cases

• Mets involved lungs, brain, soft tissues, liver, bone, and thyroid gland.
• **Axillary lymph node** involvement in breast malignant adenomyoepithelioma is thought to be unusual.

• Therefore, it has been suggested that axillary lymph node dissection is not indicated in these tumours unless there is clinically enlarged nodes.

• However, metastases to axillary nodes have been reported in 2 previous cases, in addition to the current case where no palpable lymph nodes were present.
Conclusions

- We presented a case of a 63-years-old woman, who developed a malignant adenomyoepithelioma.

- She had axillary lymph node metastasis, that included epithelial and myoepithelial elements, in spite of the absence of clinically enlarged nodes.

- We suggest that histological examination of axillary sentinel nodes or node sampling may be worthwhile in this condition.
Thank You