Calretinin Expression in High Grade Invasive Breast Carcinoma

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Clinical History – Initial Presentation 2018

- 35 year old female with 3 week history of breast lump (lower right breast)
- Ultrasound shows 10mm indeterminate mass
- Core biopsy shows Grade 3 invasive ductal carcinoma, both ER and PR negative

Clinical History - Initial Presentation 2018

- Wide local excision of breast lump with sentinel node biopsy showing 12mm Grade 3 invasive ductal carcinoma with associated DCIS to the inferior margin increasing the area to 23mm
- Sentinel nodes clear
- Triple negative tumour (ER, PR and Her2 negative)
- Chemotherapy with adjuvant radiotherapy to the right breast

Importance of Triple Negative Breast Tumours

- Triple negative cancer in younger patients is more likely to be due to underlying inherited susceptibility – 5-10% of cancers are hereditary
- Triple negative breast cancer is generally more aggressive and has a lower survival rate compared to other breast cancer types[1]
- Assessment for gene mutation
- Mutations discovered in these genes would mean the patient is eligible for additional breast screening and possible bi-lateral mastectomy

Gene Mutation Assessment

Gene Assessment	Mutation	Significance
BRCA1	No	No pathogenic sequence detected
BRCA2	Yes	Variation of unknown significance
PALB2	No	No pathogenic sequence detected
Overall assessment	No pathogenic sequence detected	Risk reducing surgery not advised

Gene Mutation Assessment

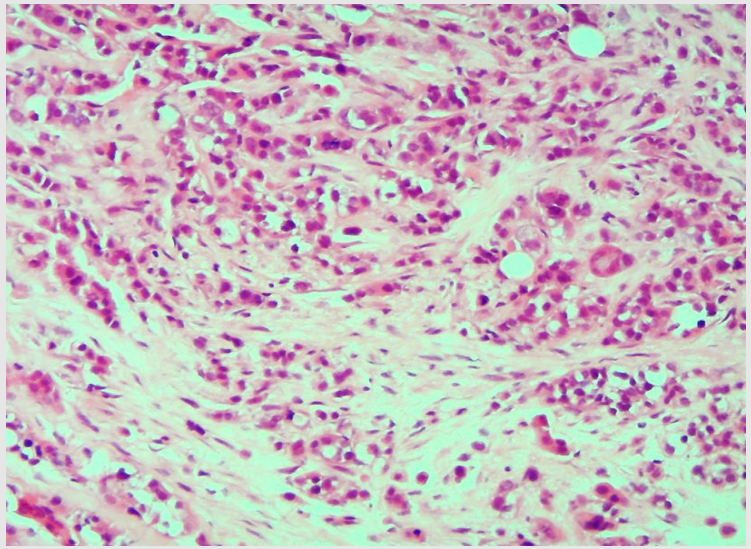
- BRCA1 and BRCA2 are also associated with ovarian cancer risk
- Patient has BRCA2 variant of unknown significance only
- 10-15% of cancers are caused by ‘familial risk’ – without an inherited cause

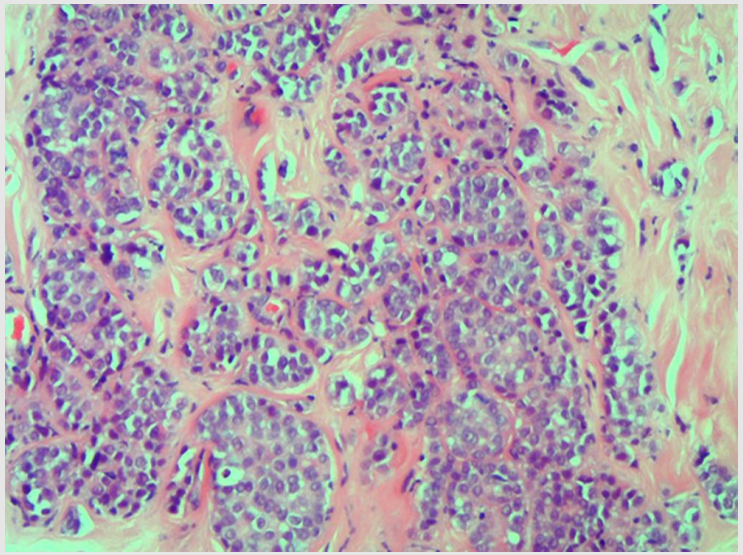
Going Forward -

- Annual mammogram surveillance until 50 - clear
- Abnormal uterine bleeding – irregular endometrium on ultrasound with negative biopsy
- 3 years later – Pelvic pain, MRI reassuring with 4mm lesion on mesorectal fascia (endometriosis query)
- 5 years post breast ca – attended breast clinic earlier than scheduled due to ‘lumpiness’ in left breast – benign nodularity
- Further mammogram – negative

2024

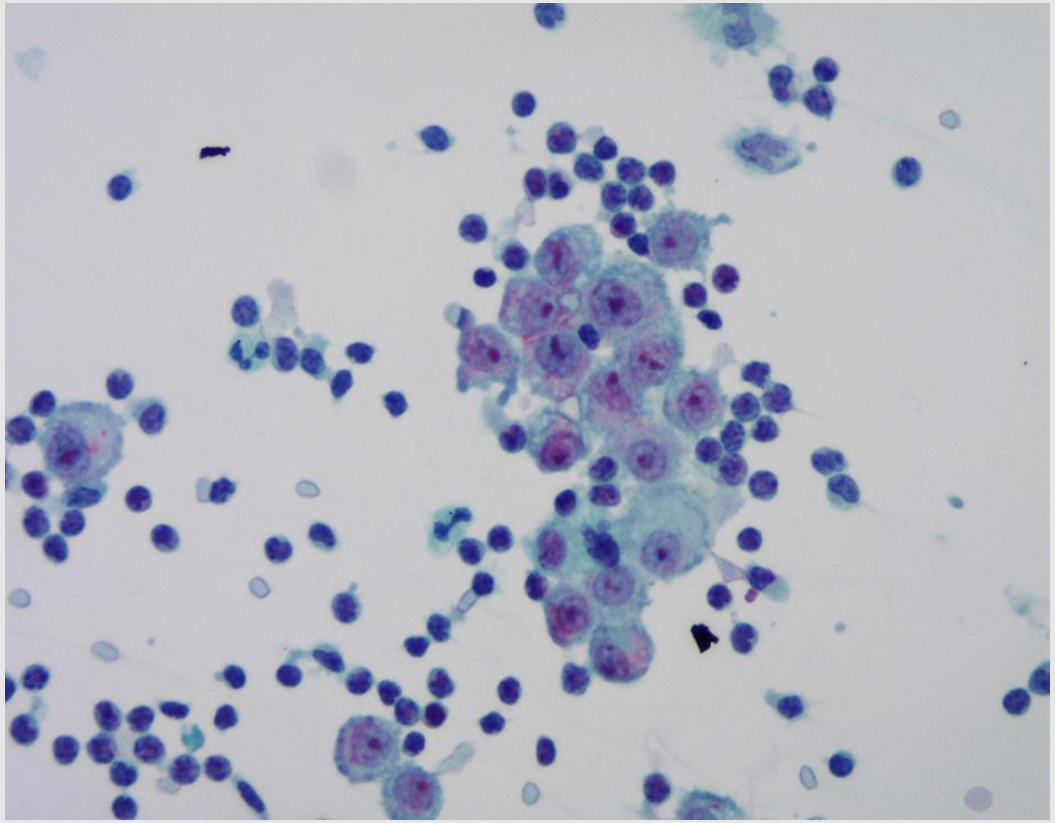
- Attended breast clinic with rash and associated pain over right breast area
- Axilla – cordlike mass identified
- Ultrasound identified abnormal area measuring 40mm (upper breast)
- Biopsies taken from right breast and right axilla – again showing Grade 3 invasive ductal carcinoma and triple negative (ER-, PR-, HER2–)





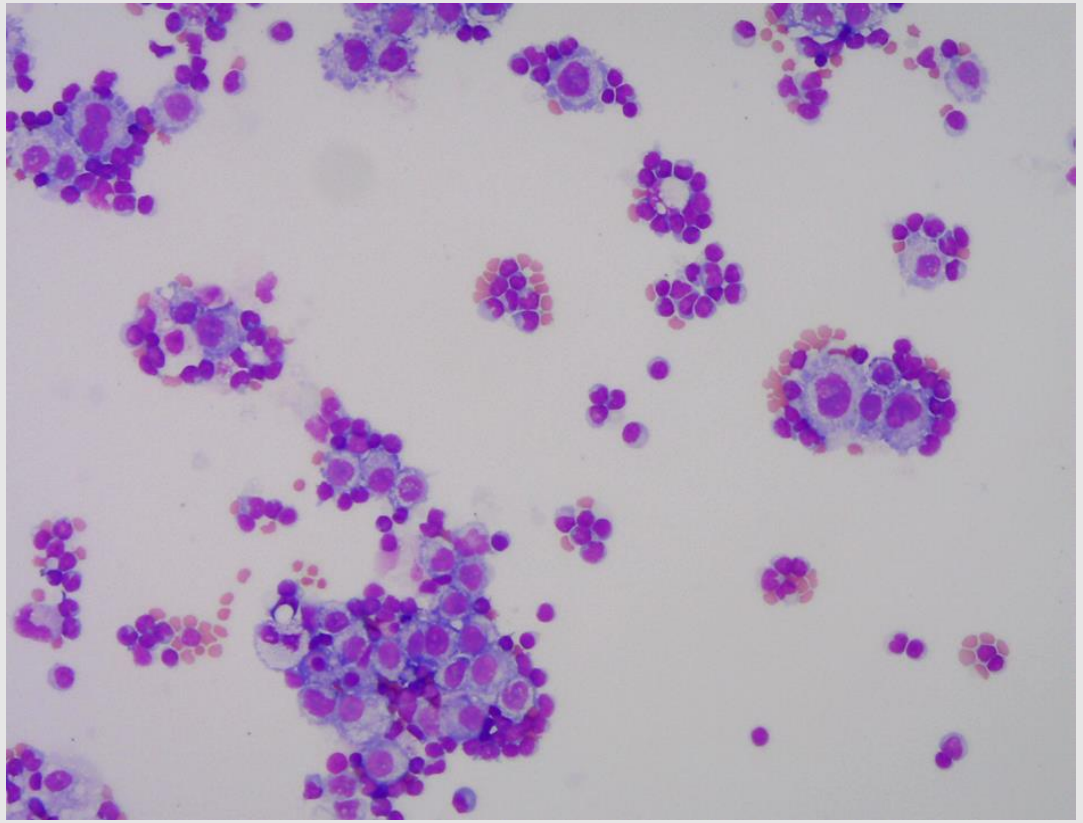
PET scan showed extensive metastatic disease with pleural effusion

PAP



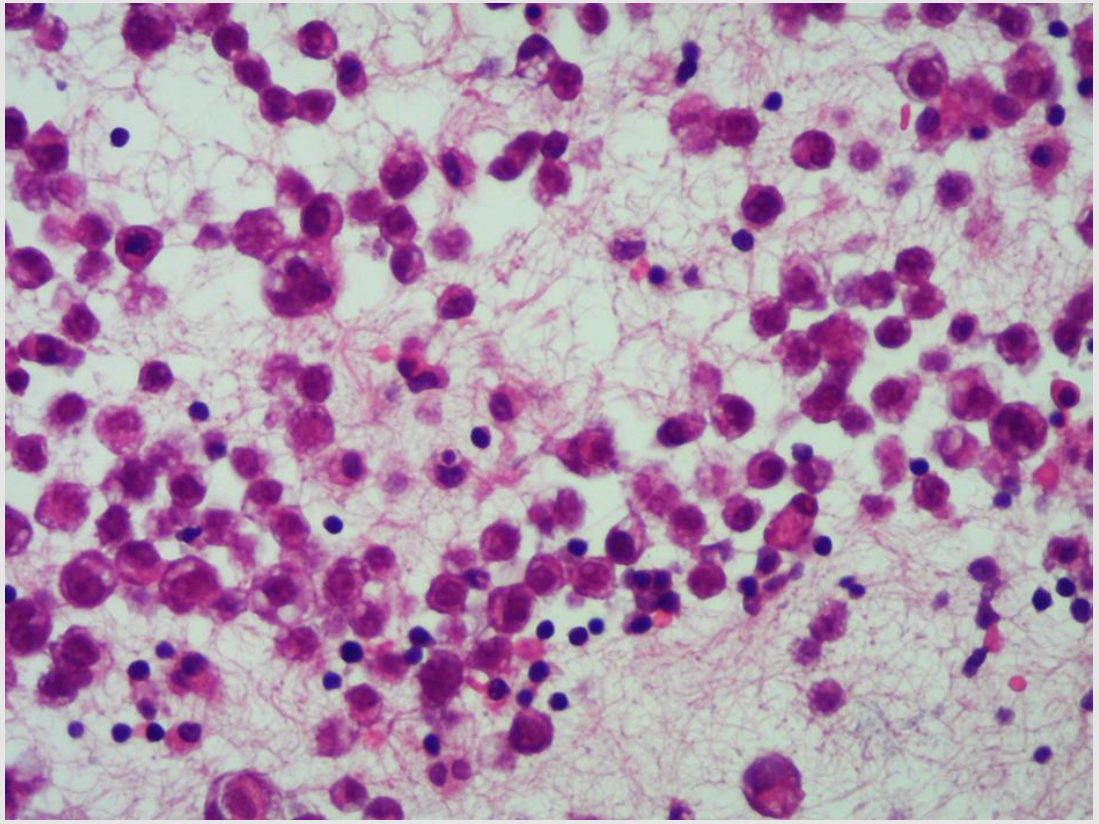
Numerous single atypical cells with slightly enlarged nuclei and prominent nucleoli.

MGG

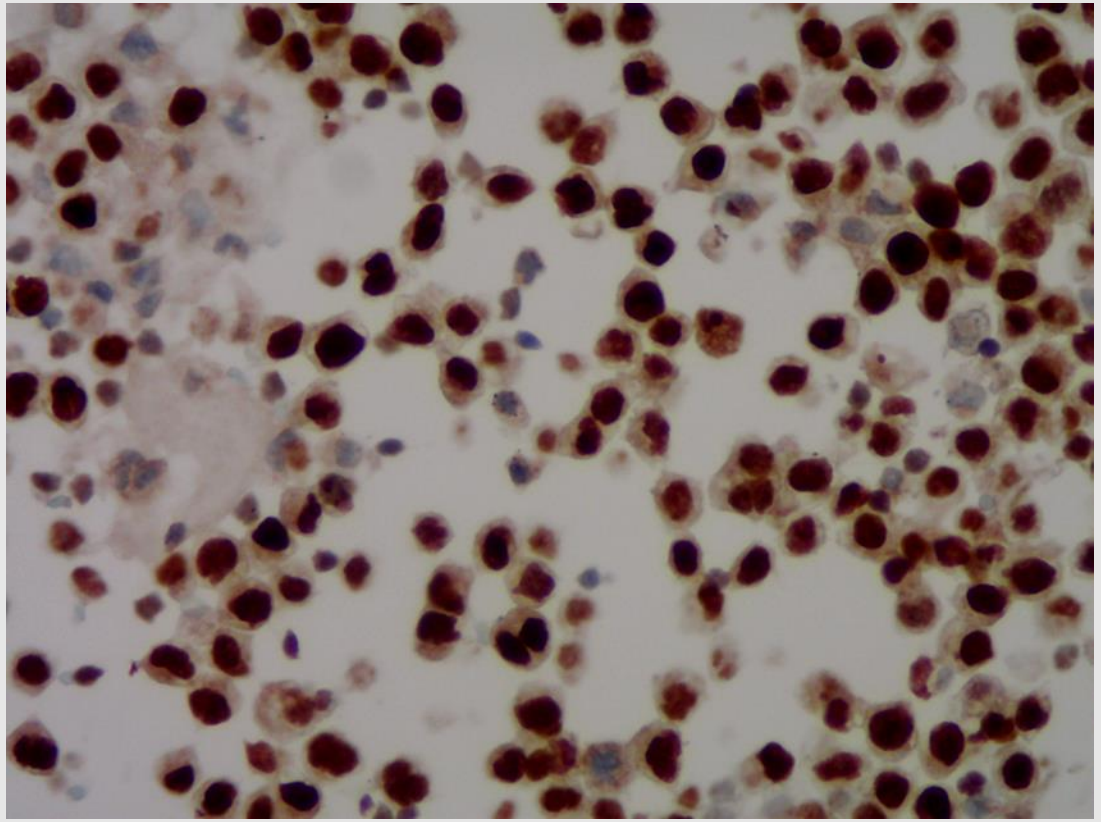


Cell block from the Pleural Fluid

H+E

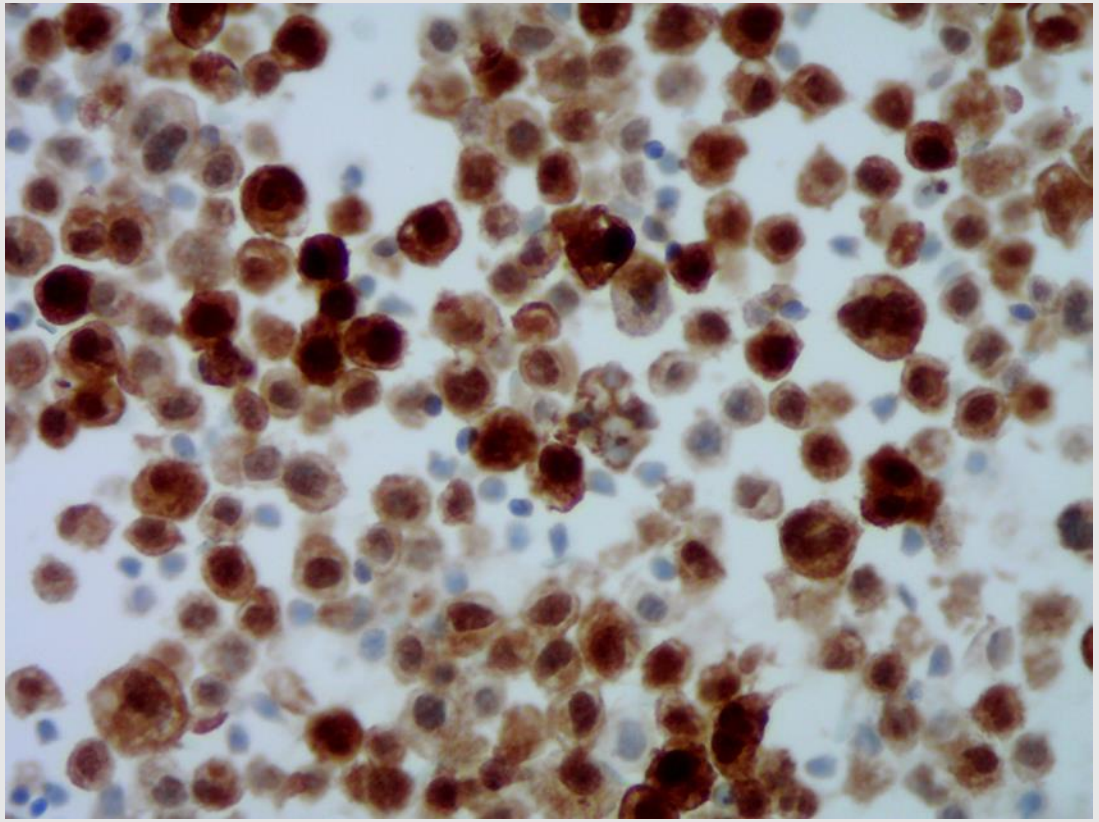


GATA3 (breast ca marker)

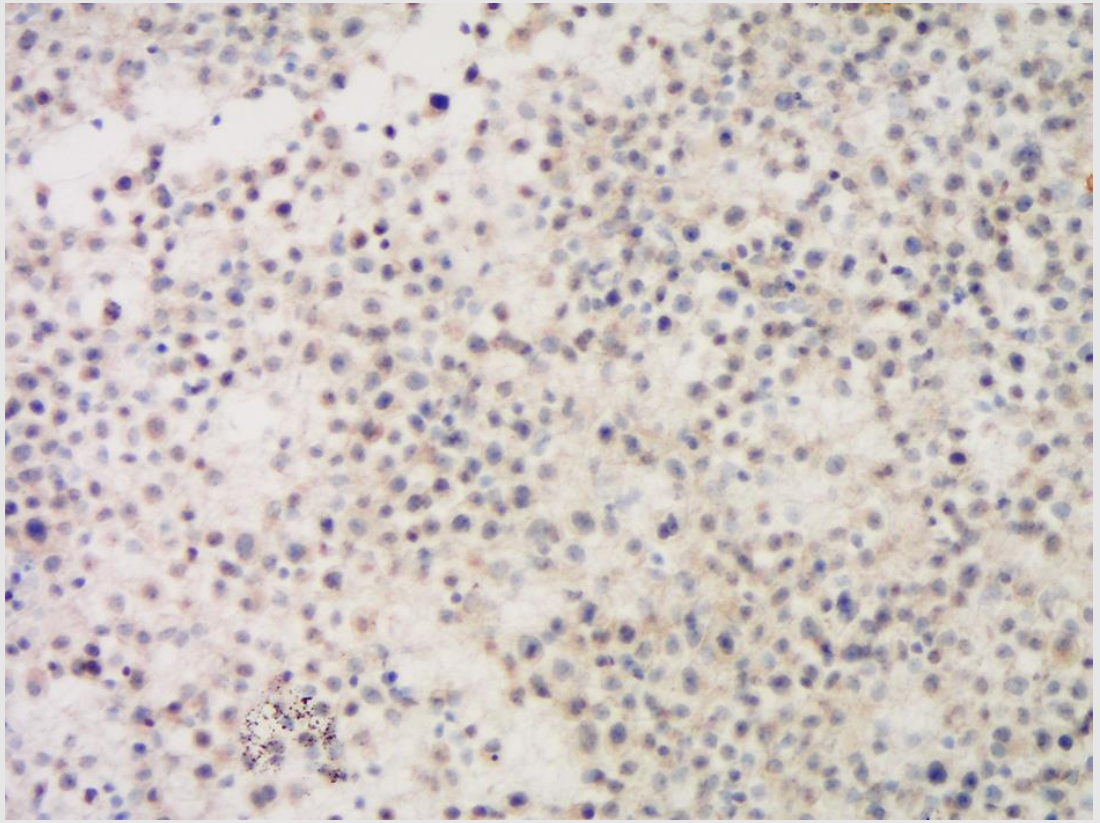


Numerous single mildly atypical cells – GATA3 positive.

Calretinin (mesothelial marker)



D240 (mesothelial marker)



Numerous cells staining for positively with Calretinin but mainly negative with D240.

Significance of Calretinin Expression in High Grade Breast Cancer

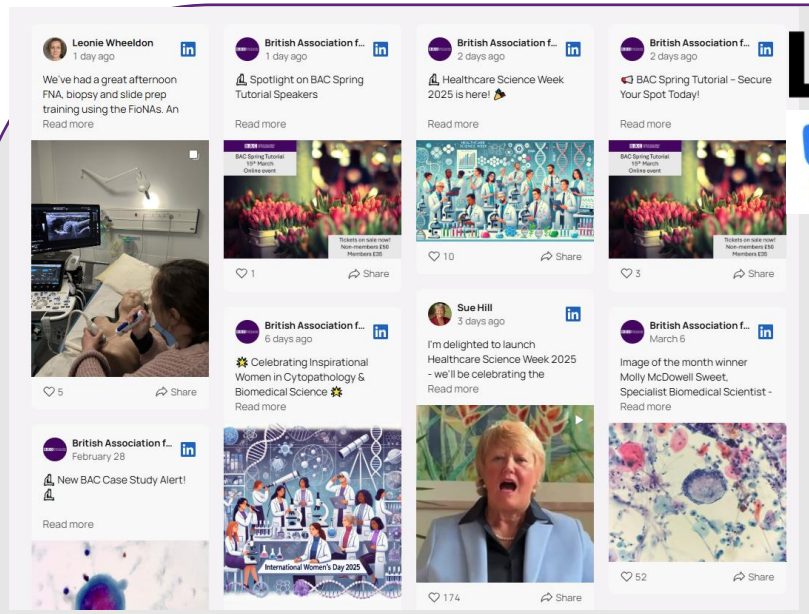
- High level calretinin expression appears to be a strong predictor of adverse prognosis [2]
- Decreased survival is strongly associated with Grade 3 invasive ductal carcinoma [2]

Outcome

- For palliative care – PDL1 negative so unsuitable for immunotherapy
- Passed away 1 month later

References

- 1 Expert Rev Anticancer Ther. 2021 Feb;21(2):135–148. Triple-negative breast cancer: promising prognostic biomarkers currently in development
- 2 Hum Pathol. 2013 December; 44(12). Calretinin expression in high-grade invasive ductal carcinoma of the breast is associated with basal-like subtype and unfavourable prognosis.



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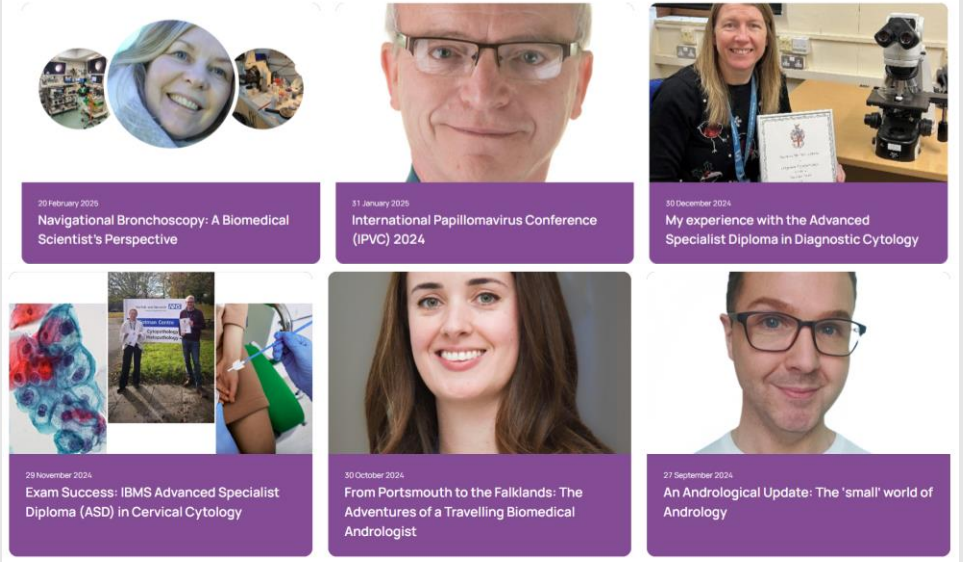

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