CONFLICT IN THE PIT - A case study of Hidradenoma as a mimic of metastatic clear cell malignancies

CLINICAL PRESENTATION

- 56 year old female presented with a non-tender 2mm subcutaneous skin lesion in the left axilla, present for 2/52 ? metastasis. Ultrasound presentation was 3/5, Clinical impression was 2/5.
- Previous left partial mastectomy and sentinel node biopsy (SNB) 2007 for invasive ductal carcinoma, and again in 2012 for invasive lobular carcinoma.
- Previous left nephrectomy 2017 for clear cell renal carcinoma.

CYTOLOGICAL FINDINGS

- Cellular smears with a population of atypical cells in cohesive sheets and papillary fragments with fibrovascular cores.
- Abundant granular and bubbly cytoplasm, round nuclei with prominent nucleoli.
- The background contained occasional macrophages and debris.
- Reported as suspicious for malignancy possibly representing metastasis from clear cell renal carcinoma but a papillary breast lesion could not be excluded on morphology.
- No material was available for cell block (CB) or immunohistochemistry (IHC).

FOLLOW-UP STUDIES

- Histological impression in excised lesion was similar to the cytology including nodules with clear cells bearing a central duct and containing intracytoplasmic microvacuoles.
- IHC showed patchy staining for EMA (also highlight ductal lumina). S100 and PAX-8 were negative. There was also no loss of expression for MMR-protein (MLH-1, PMS-2, MSH2 and MSH6).
- DPAS stains showed diastase-sensitive cytoplasmic granularity consistent with intracytoplasmic glycoprotein.
- Reported as a benign dermal adnexal tumour, favouring hidradenoma.

DISCUSSION

Hidradenomas are rarely diagnosed with FNAB and are often misdiagnosed, inconclusive or misinterpreted. They are cutaneous neoplasms and relatively rare. There is an overlap of cytomorphological features with other subcutaneous malignancies, particularly cutaneous metastases. These tumours can closely mimic renal cell carcinoma and other papillary tumours. Metastatic cutaneous renal cell carcinoma is rare but has been described. Hidradenoma usually shows a dual population of eosinophilic granular cells and clear cells. Eosinophilic cells form large, cohesive, papillary-like clusters while clear cells form smaller, flat clusters. Eosinophilic cells have a moderate amount of finely eosinophilic, granular cytoplasm. Nuclei of both cells are round with finely granular chromatin and small nucleoli. Clear cells have a larger amount of clear, watery cytoplasm.

This dual population of cells along with tubular structures and extracellular hyaline material are key cytologic features of hidradenoma.

Our case showed a dual population of cells with large papillary structures but tubular formations and extracellular hyaline material were lacking. On review perhaps some of the eosinophilic material within the papillary structures may have represented extracellular hyaline material but this was not appreciated.

The clinical history of a recent, rapidly growing mass is unusual for hidradenomas as they are usually slow growing. This may have contributed to suspicion for a metastatic lesion.

This case highlights the importance of comprehensive clinical history along with clinical and radiological appearances. The collection of material for ancillary testing should be performed routinely at FNAB procedures. IHC studies are vital for distinguishing hidradenomas from other differential diagnoses.

ACKNOWLEDGEMENTS

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