Nottingham Pathology 2016

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St. James’ Hospital
Leeds
Dermatopathology - Sound bites
Finger orientated

Â£ Mesenchymal
  ï Epithelioid
  ï Vascular
  ï AFX/PDS
  ï Easily missed/OOPS

Â£ Epithelial Tumours
  ï Adnexal tumours, Primary Vs Met
  ï Odd KA’s/ SCC’s

Â£ Melanocytic
  ï Special Types
30 Male with polypoid lump on arm
SMA
Dermal ‘Epithelioid’ Tumours

Å Epithelial- poroma etc.
Å Melanocytic – Spitz Naevus
Å Haematopoietic - Reticulohistiocytoma [JXG variant]
Å Soft Tissue –
  ï Vascular-Epithelioid angiomatous nodule
  ï Myoepithelioma
  ï Epithelioid Dermatofibroma
  ï Neural –epithelioid schwannoma
  ï Epithelioid sarcoma
Immunohistochemical panel

- Epithelial - Broad spectrum Cytokeratins
- Melanocytic - S100, MelanA
- Histiocytic – CD4, CD68, CD163
- Vascular - CD31, CD34, ERG
- DF - SMA
Epithelioid Dermatofibroma

- Similar clinical setting as ordinary D.F., i.e. Young adults, peripheral sites.
- Often polypoid, with collaret, well circumscribed.
- SMA often positive, EMA positive in 50%.
Dermatofibroma – Unusual features

- Cellular
- Necrosis - recognised finding
- Clear cell
- Granular cell
- Epithelioid cell
- Lipidised
- Atypical – DF with monster cells.
Fibrous Histiocytoma
Genetic Insights.

Å Jedrych J et al. Epithelioid cell histiocytoma of the skin with clonal ALK gene rearrangement resulting in VCL–ALK and SQSTM1–ALK gene fusions
Å Br. J. Dermatol.2015:172 1427-1429
Fusions involving protein kinase C and membrane-associated proteins in benign fibrous histiocytoma

Epithelioid vascular tumours

Epithelioid – Haemangio – Epithelioid A.S.
Haemangioma  endothelioma
# Vascular Tumours

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<th>Benign</th>
<th>VS</th>
<th>Malignant</th>
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<tr>
<td>Å Lobular</td>
<td>Å Dissecting</td>
<td>Å Multilayered endothelium</td>
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<td>Å Single layer</td>
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<td>endothelium</td>
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<td>Å Pericyte layer well</td>
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<td>Å Necrosis</td>
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<td>formed</td>
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Cutaneous Epithelioid Angiomatous nodule

- Cutaneous Epithelioid Angiomatous Nodule: A Distinct Lesion in the Morphologic Spectrum of Epithelioid Vascular Tumors

_Thomas Brenn, MD, PhD, and Christopher D. M. Fletcher, MD, FRCPath_

_American Journal of Dermatopathology. 26(1):14-21, February 2004_

-Cutaneous Epithelioid Angiomatous Nodule: A Case Series and Proposed Classification

_Omar P. Sangueza, MD,* Sarah N. Walsh, MD,* Daniel J. Sheehan, MD,* Almudena Fernández Orland, MD,* Beatriz Llombart, MD,Á and Luis Requena, MDý_

(Am J Dermatopathol 2008;30:16ï 20)
Cutaneous Epithelioid Angiomatous nodule

- Wide range of sites and ages
- Small erythematous/bluish nodule 0.5-1.5cm
Cutaneous Epithelioid Angiomatous nodule

- Small solitary circumscribed upper dermal nodule. Often reactive changes in epidermis.
- **Solid proliferation** of epithelioid cells. Intracytoplasmic vacuoles
- No nuclear atypia, scattered mitoses, not atypical
- Occasional vessel formation
- Surrounding lymphoplasmacytic infiltrate +/- eosinophils common.
- Surrounding ectatic vessels or fibrosis common
Cutaneous Epithelioid Angiomatous nodule

Å Immuno; CD31 & CD34 positive
Å Cytokeratins Negative
Å ERG positive
Cutaneous Epithelioid Angiomatous nodule

- Benign. No aggressive behaviour.
- Very rarely develop new lesions
- Reactive
- Related to epithelioid haemangioma
ERG

• v-ets erythroblastosis virus E26 oncogen homologue; ETS family transcription factor
• Nuclear positivity found in Prostatic carcinoma with TMPRSS2-ERG fusion protein
• Subset of Ewings sarcoma, EWSR1-ERG rearrangement / t(21;22)(q22;q12) (Mod Pathol 2012: 25:13788).
• Component of fusion protein in acute myeloid leukemia
• > 90% benign and malignant Vascular Tumours.
• Considered best endothelial marker now available.
Vascular tumours of the breast

- Atypical Vascular Lesion [AVL]
- Angiosarcoma
Vascular Tumours

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Differential Diagnosis

• Angiosarcoma, post irradiation
• AVL’s
Atypical vascular Lesion [AVL]

- post irradiation atypical vascular proliferation.
- On or more lesions.
- Appear shortly after DXT [3yrs]
- Lymphatic channels. Minor degree of dissection of collagen. Dermis only.
- Nuclei slightly hyper chromatic +/- papillary projections.
- NO nuclear pleomorphism, NO multilayering, No mitoses.
- Very difficult to separate from Angiosarcoma.
Atypical Vascular Lesion

- Has some features from benign and some from malignant category.
- Majority benign but reports of a few progressing to angiosarcoma. [13 cases, 4 local/regional recurrence, 1 progressed to angiosarcoma, T. Brenn & C. Fletcher Am. J. Surg. Path 2005; 29: 983-996]

- 6 years follow up. No recurrence
Consistent MYC and FLT4 Gene Amplification in Radiation-Induced Angiosarcoma but not in other Radiation-Associated Atypical Vascular Lesions

Tianhua Guo¹, Lei Zhang¹, Ning-en Chang¹, Samuel Singer², Robert G. Maki³, and Cristina R. Antonescu¹,*

¹Department of Pathology, Memorial Sloan-Kettering Cancer Center, New York, NY
²Department of Surgery, Memorial Sloan-Kettering Cancer Center, New York, NY
³Department of Medical Oncology, Memorial Sloan-Kettering Cancer Center, New York, NY
Postradiation cutaneous angiosarcoma after treatment of breast carcinoma is characterized by *MYC* amplification in contrast to atypical vascular lesions after radiotherapy and control cases: clinicopathological, immunohistochemical and molecular analysis of 66 cases

T Mentzel¹, HU Schildhaus², G Palmedo¹, R Büttner² and H Kutzner¹

¹Dermatopathologie Bodensee, Friedrichshafen, Germany and ²Institute of Pathology, University Hospital Cologne, Cologne, Germany
Gene Expression Profiling

Å Differential expression of 526 genes examined
Å Breast secondary Angiosarcoma’s [post DXT and lymphoedema associated] consistent over expression of MYC.
Å AVL and primary AS MYC not over expressed.
Å Human.Path. 2014, April, 45:709-716