Pilomatrixoma  

A case report

Clinical Presentation

27 year old male presented with a swelling left side of neck – 1 month duration. Skin over the swelling is erythematous and non pinchable. Swelling was firm to hard and mobile.

Radiology

CECT FINDINGS
Ultrasound examination and CT scan of the neck revealed a well-defined ovoid heterogeneous mass measuring 24 x 22 x 16 mm within subcutaneous tissues, causing impression upon the muscle with obliteration of the fat plane. CT revealed tiny calcifications inside. The lesion shows heterogeneous enhancement on post contrast images.

FNAC findings
Smears are moderately cellular and satisfactory for evaluation. Smears reveal clusters of basaloid cells with minimal atypia, anucleate squames, few giant cells, keratin debris and suspicious ghost cells along with specks of calcification. (Pap x 20x)

Excision biopsy gross findings

Gross Findings
Skin covered firm lesion measuring c/s well circumscribed greywhite oval nodular lesion with areas of calcification.

Microscopy

• Sharply demarcated and contains basaloid cells and eosinophilic keratinized (shadow) cell and Melanocytes
• The keratinized eosinophilic shadow cells are located toward the center of the tumor and form masses, whorls, or stacks.
• The shadow cells have distinctive cell borders and contain central unstained areas corresponding to the lost nuclei that are characteristic of pilomatrixomas.
• Granulomatous inflammation in areas of keratinization and calcification.

Diagnosis
Pilomatrixoma, pigmented variant.

Discussion

Pilomatrixoma, also known as calcifying epithelioma of Malherbe, is a benign skin neoplasm, that arises from hair follicle matrix cells.
Pilomatrixoma on FNA smear has a high threshold to be labelled as malignant unless the classical cytological features are not present. The basaloid cell predominant lesions may be misinterpreted as basal cell carcinoma, adenoid cystic carcinoma, Merkel cell tumors, Neuroendocrine tumors or other benign appendageal tumors. Presence of large amount of keratin and giant cells might mimic an epidermal cyst. Presence of keratinizing cells with feature of minimal atypia may be overdiagnosed as squamous cell carcinoma. The reporting pathologist needs to be vigilant and should focus on the finer cytological details, to compile the jigsaw for making a proper diagnosis. Excision biopsy is the gold standard for the diagnosis. The present case was validated by histopathological diagnosis of pigmented variant of Pilomatrixoma.

Pilomatrixoma - pigmented variant

Normal hair contains melanocytes within the hair matrix and is postulated to descend during anagen from the outer root sheath.
Moreover, melanin pigment in the shadow cells is not an unexpected finding because normal cortical cells incorporate melanosomes. Some malignant tumour cells, such as breast cancer and squamous cell carcinoma of the oral mucosa, have been shown to produce melanocyte chemotactic factors, resulting in melanocytic colonization with in the tumor. Therefore, it is hypothesized that the basaloid cells can produce melanocyte chemotactic factors which can lead to melanocytic hyperplasia in pilomatrixoma

References