

Pilomatrixoma with Extensive Ossification: A Rare Case Report

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Dear Sir,

Pilomatroxoma is a benign skin adnexal tumour with differentiation towards hair matrix. It is usually a deep seated firm nodule, found mostly in the head and neck region and upper extremities.^[1, 2] Histopathological examination of an established pilomatrixoma shows masses of epithelial cells with intervening connective tissue stroma. The epithelial cells are of two types namely basophilic and eosinophilic cells. The basophilic cells are seen in the periphery and are characterized by indistinct cell borders, minimal cytoplasm, hyperchromatic nucleus and increased mitosis. The eosinophilic cells are labelled as eosinophilic shadow cells and are seen at the centre with distinct cell borders, abundant eosinophilic cytoplasm and no nuclear staining. The eosinophilic shadow cells arise from the basophilic cells and the transition may be smooth, characterized by transitional eosinophilic cells with eosinophilic cells and pyknotic nucleus or rarely abrupt. Calcification is commonly seen either in the eosinophilic shadow cells or stroma, which partly imparts to its other name calcifying epithelioma of Malherbe. The stroma may also show hemosiderin deposition, melanin deposition and ossification of stroma in decreasing order of frequency.^[1-3]

We present a 32 year old male, with pilomatrixoma having extensive osseous differentiation of stroma. A 32 year old south Indian male presented with painless swelling in the left cervical region for a period of 9 years. The swelling measured 3 x 2 cms and was firm to hard in consistency. The swelling was mobile and overlying skin was normal. A clinical diagnosis of calcified cyst/ calcified lymph node was made. On fine needle aspiration of the swelling attempted twice, no cellular aspirate was obtained. Subsequently, the swelling was excised and sent for histopathological examination. On gross

examination, a nodular mass measured 2 x 2 cms with smooth outer surface. On cut section, grey white hard to gritty areas were noted. On microscopic examination, well circumscribed lesions with islands of eosinophilic ghost cells and interspersed transitional epithelial cells were seen. The intervening stroma showed fibrofatty tissue with areas of calcification and areas of extensive ossification characterized by bony trabaculae with osteocytes and rimmed by few giant cells. No haematopoietic cells were seen within the trabaculae. Based on the histological findings, a diagnosis of pilomatrixoma with extensive ossification was made (Figure 1).

Pilomatrixoma with osseous metaplasia is a rare occurrence. Occasionally extra-medullary haematopoiesis can occur, which was not noticed in our case.^[4, 5] It has been shown that bone morphogenetic protein (BMP-2) localized in epithelial cells plays a role in osseous differentiation.^[1] The osseous differentiation was highlighted by birefringence under polarized light microscopy.^[6] The morphology of the lesion varies with the age of the lesion. Early lesions have predominantly basaloid cells with brisk mitotic activity, whereas the established old lesions have islands of both basaloid and eosinophilic shadow epithelial cells with intervening stroma containing blood vessels, inflammatory infiltrate, giant cells and occasionally hemosiderin, melanin deposition or bony metaplasia.^[2] Typical pilomatrixoma cytology contains clusters and scattered basophilic small cells, anucleate squames and nucleated squamous cells.^[7] The extensive ossification in our case would be the reason for the dry tap during fine needle aspiration. Although pilomatrixoma and the various stromal changes documented are benign skin adnexal tumours, occasionally atypical forms with unknown malignant potential are seen. The atypical forms are characterized by loss of polarity,

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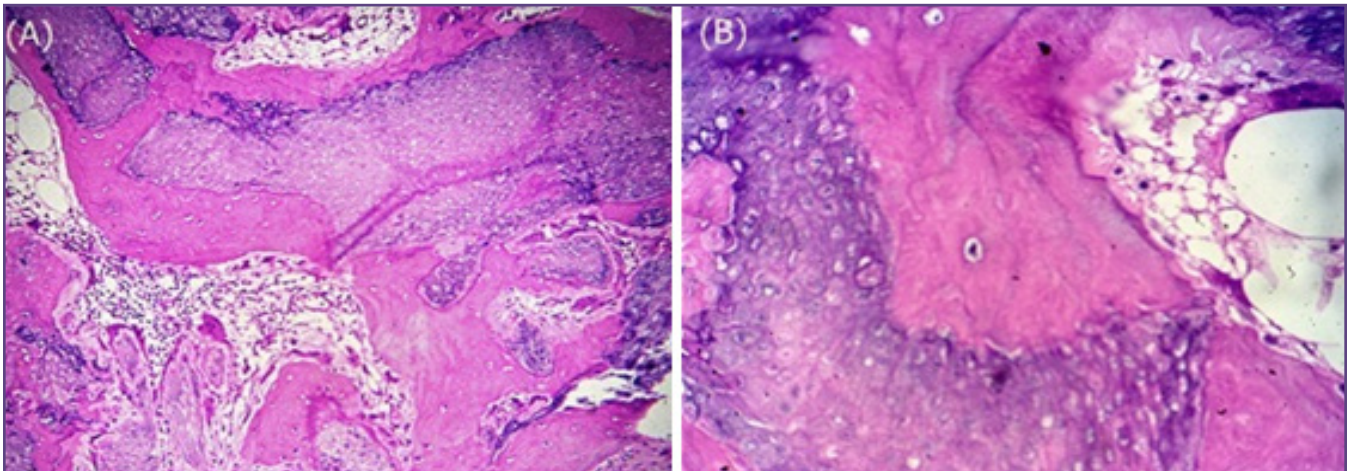


Fig. 1: Microscopic examination showing (A) islands of epithelial cells with adjacent bony trabeculae with osteocytes (H&E, 10x); (B) Transitional epithelial cells and adjacent ossified stroma (H&E, 40x).

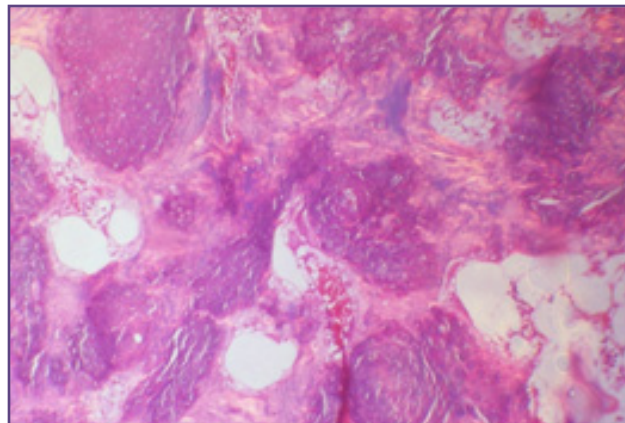


Fig. 2: Ossified stroma showing birefringence under polarizing light microscope (H&E, 20x).

increased mitosis, and basaloid cell pleomorphism.^[2] Surgical resection is curative and our patient with an established old lesion had no recurrence in follow up of 6 months.^[1] In conclusion, pilomatrixoma with extensive ossification is rare. Awareness about the nature of entity as benign, knowledge in technical difficulties while performing fine needle aspiration is essential to reduce anxiety in patients with pilomatrixoma with osseous metaplasia and in subjects with dry tap aspirates.

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Competing interests

None

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