



Fine Needle Aspiration Cytology Of Pilomatrixoma: A Case Series

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Abstract

Background: Pilomatrixoma, also known as calcifying epithelioma of Malherbe, is a benign skin tumor originating from hair matrix cells. Fine-needle aspiration cytology (FNAC) is a valuable diagnostic tool for preoperative evaluation, although its accuracy can be challenging due to the tumor's diverse cellular composition.

Objective: To evaluate the cytological features of pilomatrixoma using FNAC and to highlight the diagnostic challenges and key characteristics.

Methods: FNAC samples were obtained from 3 patients. The samples were stained with Giemsa stain and examined under a microscope to identify characteristic cytological features.

Results: The FNAC of pilomatrixoma revealed a distinctive combination of basaloid cells, ghost cells, and foreign body giant cells. Basaloid cells appeared small, round to oval with scant cytoplasm. Ghost cells were anucleate squamous cells with a shadowy appearance. Foreign body giant cells were multinucleated and often surrounded by calcified material.

Introduction

Pilomatrixoma was initially described by Malherbe and Chenantais in 1880 as a 'calcifying epithelioma,' believed to originate from sebaceous glands. In 1961, Forbis and Helwig introduced the term 'pilomatrixoma' after determining that the tumor originates from the cortex of the hair follicle.¹ Although pilomatrixomas are well-recognized lesions, they are often clinically misdiagnosed as other skin conditions.² It presents as a solitary, slow-growing nodule in the dermis or subcutaneous tissue and is rarely diagnosed clinically. Although the histologic features of this lesion are well recognized, pathologists often encounter difficulties diagnosing it through aspiration cytology.³

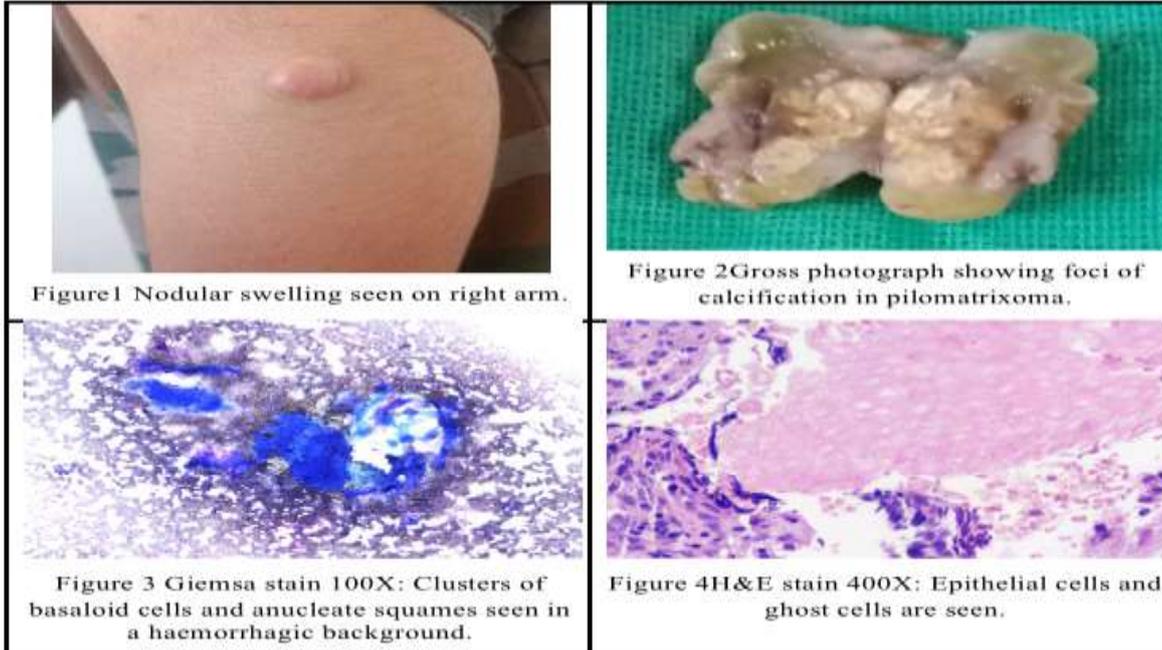
Case Presentation

Three patients between the age group of 10 years to 37 years presented with a solitary, firm, painless nodular swelling on the right arm, head and right parotid region with no preceding trauma or significant medical history (Figure 1). The lesions measured approximately 1 to 2 cm in diameter, with a smooth surface and well-defined borders.

Diagnostic Assessment

FNA was performed using 20 ml syringe. In one of the case needling was done using 23-gauge needle. The samples obtained were stained with Giemsa stain. On microscopic examination the smears revealed basaloid cells in both cohesive clusters and isolated arrangements (Figure 2). The cytoplasm was noted to be basophilic and scant, and characteristic ghost cells were observed, which were pale blue and mononucleated with discernible cell borders. The presence of occasional multinucleated giant cells was also noted. A gross photograph of the excised specimen showed foci of calcification typical of pilomatrixoma (Figure 3), while H&E staining highlighted epithelial cells and ghost cells and occasional multinucleated giant cells (Figure 4).

Pilomatrixoma



Therapeutic Intervention

Complete surgical excision of the lesion was performed under local anaesthesia. Histopathological examination of the excised tissue confirmed the diagnosis of pilomatrixoma.

Follow-Up and Outcomes

The postoperative period was uneventful, and the patient recovered well without any complications. At a 6-month follow-up, there was no sign of recurrence.

Discussion

This case series exemplifies the typical clinical and cytological features of pilomatrixoma. The role of FNA in the preoperative diagnosis of such tumours is discussed, as well as the surgical management and prognosis of pilomatrixoma in paediatric patients.

Conclusion

Pilomatrixoma should be considered in the differential diagnosis of solitary nodular lesions in paediatric patients. FNA cytology can be a useful tool for preliminary diagnosis, which should be followed by surgical excision for both therapeutic and confirmatory diagnostic purposes.

References

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