Case Report

Uncommon Presentation of Steatocystoma: A Cytological Case Report

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Abstract

Steatocystoma multiplex is a benign adnexal skin disorder characterized by multiple sebum-filled dermal cysts, typically presenting in adolescence or early adulthood. Here, we present a case of a 61-year-old male with multiple subcutaneous nodules involving the scalp and facial region. Fine-needle aspiration cytology (FNAC) revealed features of steatocystoma suppurativa in the occipitoparietal scalp and mandibular angle lesions, and classic findings of steatocystoma multiplex in the chin lesion. This case highlights the role of FNAC in identifying both non-inflammatory and suppurative variants of steatocystoma.

Keywords: steatocystoma multiplex; FNAC; sebaceous cyst; cytology

Introduction

Steatocystoma multiplex is a rare hamartomatous disorder of the pilosebaceous unit, often inherited in an autosomal dominant pattern. It presents as multiple dermal cysts typically located on the trunk, upper arms, or face. These cysts arise from sebaceous ducts and are filled with sebaceous material. Occasionally, secondary infection or inflammation can result in steatocystoma suppurativa, a less common but clinically significant variant. FNAC is a valuable, minimally invasive technique to diagnose these lesions, particularly when clinical diagnosis is uncertain or when lesions occur in unusual locations or age groups. [1]

Case Presentation

A 61-year-old male presented to the cytopathology outpatient department with complaints of three painless, gradually enlarging nodular swellings. The lesions were located on the occipitoparietal region of the scalp for six months, the right side of the chin for four years and near the right angle of the mandible for eight years.

On examination, the nodules were soft to firm, mobile, and non-tender, measuring between 1–1.5 cm in diameter. The overlying skin temperature was normal in all three lesions but the one on occipitoparietal region did show reddish discoloration.

FNAC was performed on all three lesions using a 23-gauge needle and 10 mL syringe with all aseptic precautions. The aspiration from all three lesions yielded a thick yellowish cheesy pultaceous material. The material aspirated from the lesion on occipitoparietal region was more pus like. Smears were prepared and stained with May-Grünwald-Giemsa, Hematoxylin and eosin and Papanicolaou stains.

Cytological Findings

All three smears were highly cellular and showed clusters as well as singly scattered anucleate squames superimposed with numerous long needle like crystalline structures in the background of keratinous debris. Based on cytomorphology and clinical correlation, a diagnosis of steatocystoma multiplex was rendered.

Evidence of inflammation with neutrophils, collection of histiocytes and multinucleate giant cells was seen on smears prepared from lesions on occipitoparietal region and near the angle of mandible. These findings were consistent with steatocystoma suppurativa, indicating secondary infection or rupture of a steatocystoma.

No evidence of malignancy, granulomatous inflammation, basaloid cells, calcification or fungal hyphae was seen. The background showed no necrosis or hemorrhage. However, a key limitation of this case is the absence of histopathological or imaging correlation.

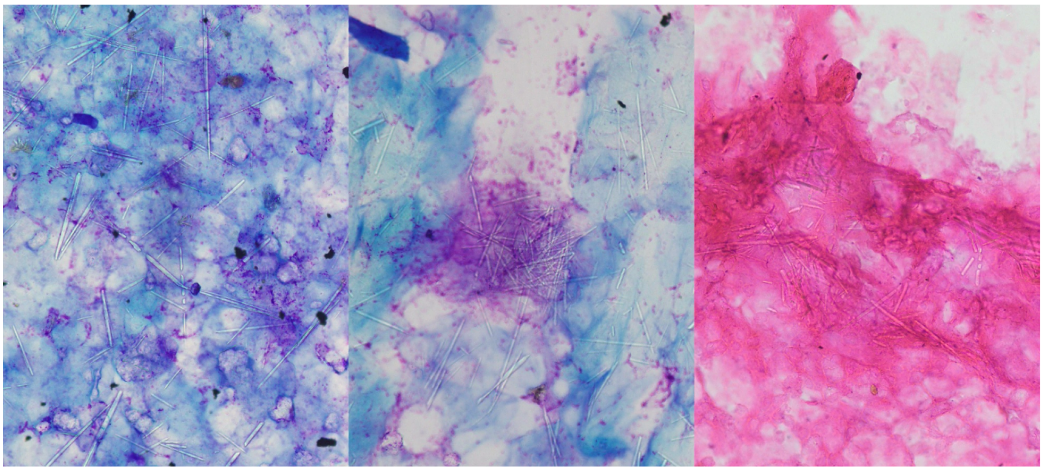

Figure 1: (40X) shows cytological features of steatocystoma multiplex with anucleate squames and needle like crystals in a keratinous background in MGG, H&E and PAP stains.

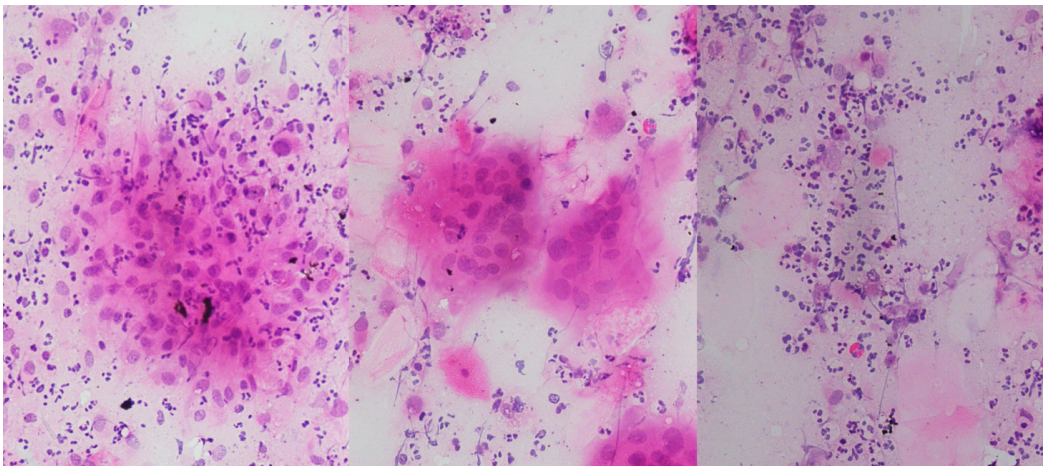

Figure 2: (40X) shows cytological features (H&E stain) of inflamed /ruptured steatocystoma with neutrophils, histiocytes and multinucleate giant cells at different foci suggestive of steatocystoma suppurativa.

Discussion

Steatocystoma multiplex is a distinctive hamartomatous disorder arising from the pilosebaceous unit, most often diagnosed in the second or third decade of life. Its association with keratin 17 gene mutations explains the familial autosomal dominant

Table 1: Differential diagnosis of steatocystoma multiplex.

Diagnosis	Clinical Features	Cytological Features	Aspirate Nature
Steatocystoma Multiplex	Multiple, skin-colored to yellowish nodules; may be familial (Autosomal Dominant) or sporadic	Anucleate squames with crystalline structures in a keratinous background. Sebaceous cells also seen.	Oily, yellowish, cheesy
Epidermoid Cyst	Solitary, slow-growing cystic lesion, central punctum often seen	Abundant anucleate squames, keratin debris, occasional nucleated squamous cells	Thick, cheesy keratinous material
Vellus Hair Cyst	Multiple small papules, dome-shaped, may be familial or eruptive	Keratinous material with numerous vellus hair fragments, few inflammatory cells	Cheesy, keratinous
Trichilemmal Cyst	Firm, mobile nodules; often on scalp; no central punctum	Dense keratin, squamous cells, abrupt keratinization, no sebaceous cells	Dense white keratinous material
Lipoma	Soft, mobile, painless mass; slow growing	Clusters of mature adipocytes, no epithelial components	Greasy, clear
Eruptive Syringoma	Multiple small, skin-colored papules; asymptomatic	Ductal epithelial cells in clusters, forming tadpole- or duct-like structures	Scant, clear or none

Table 2: Differential diagnosis of steatocystoma suppurativa.

Diagnosis	Clinical Features	Cytological Features	Aspirate Nature
Steatocystoma Suppurativa	Multiple inflamed nodules with oily discharge; painful; may rupture and drain	Sebaceous cells, keratin debris, neutrophils, oily background	Oily, turbid, yellow-white; may be pustinged
Hidradenitis Suppurativa	Painful, deep nodules and abscesses in axilla/groin; sinus tracts, scarring	Abundant neutrophils, squamous cells, bacterial debris	Thick pus or seropurulent material
Acne Conglobata	Severe acne with cysts, nodules, and scarring; chest/back/face	Neutrophils, keratin, mixed inflammatory cells	Yellow-white thick fluid; pustular or bloody

inheritance observed in many patients [5]. However, sporadic cases are also well documented, and the clinical manifestations may vary significantly depending on age of onset, site of involvement, and the presence of secondary complications.

In the present case, the patient was 61 years old, which is an unusual age for the initial presentation of steatocystoma multiplex [2]. The late presentation raises an important diagnostic consideration, as multiple cystic lesions in the head and neck region in elderly individuals often raise suspicion for sebaceous cysts, epidermoid cysts, or other adnexal tumors. This underlines the clinical diagnostic challenge in such patients and emphasizes the importance of cytological evaluation.

FNAC serves as a rapid, reliable, and minimally invasive diagnostic tool [4]. The aspirated thick, yellow, cheesy material along with smears showing abundant keratinous debris, anucleate squames, and the presence of characteristic needle-like crystals are highly suggestive of steatocystoma multiplex. The identification of neutrophils, histiocytes, and multinucleated giant cells in the background in some of the lesions indicates secondary infection or rupture, which corresponds to the variant termed steatocystoma suppurativa. Such inflammatory changes may mimic abscesses or other suppurative skin conditions both clinically and cytologically, making correlation with the overall smear pattern critical.

Suppurative transformation of steatocystoma, though rare, has clinical significance. Recurrent inflammation can lead to pain, cosmetic disfigurement, and diagnostic confusion [3]. The presence of multiple lesions in cosmetically sensitive areas such as the scalp and chin may also have psychological implications for the patient. Long-standing lesions may also occasionally rupture, causing persistent inflammation and scarring [6].

Thus, the present case highlights three unusual aspects: occurrence of steatocystoma multiplex in an elderly individual, involvement of the scalp and chin, which are uncommon sites, and presence of steatocystoma suppurativa in some lesions, complicating the clinical picture.

Conclusion

This case report reinforces the clinical and diagnostic value of FNAC in cutaneous nodules, particularly when the presentation is atypical. Steatocystoma multiplex should be considered in the differential diagnosis of multiple sebaceous or cystic lesions, even in elderly patients or at uncommon sites such as the scalp and chin. FNAC not only provides a rapid and accurate diagnosis but also distinguishes uncomplicated lesions from their suppurative counterparts, which may require different management approaches.

No significant amount of pus could be aspirated for culture and sensitivity testing; hence, the patient was initiated on medical management with a broad-spectrum antibiotic (amoxiclav). However, the patient declined surgical intervention due to concerns related to advanced age and potential cosmetic disfigurement. Consequently, the patient was advised to return for follow-up at three-month intervals and to seek immediate medical attention in the event of spontaneous cyst rupture or any emergent symptoms.

In conclusion, this case underscores the diagnostic challenge posed by atypical presentations of steatocystoma multiplex and highlights the indispensable role of FNAC in establishing a diagnosis. Early cytological confirmation not only prevents misdiagnosis but also helps guide appropriate therapeutic interventions and long-term follow-up, ensuring both symptomatic relief and improved quality of life for patients.

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