

Diagnostic Dilemma of Basal Cell Carcinoma on Cytology: Points Favouring an Epithelial Neoplasm on Cytology

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Abstract

Basal cell carcinoma (BCC) is a slow growing, locally aggressive, rarely metastasizing malignant tumor originates from basal layer of skin and invades the surrounding tissue. Differentials for BCC are the diverge group of skin adnexal tumors, rarely squamous cell carcinoma and melanoma. A 60 year old female patient presented with single irregular swelling on left nasal ala for 3 years. It was a painful and gradually progressed to present size. Local examination showed areas of crusting and tenderness. Fine Needle Aspiration (FNA) was done and cytology smears showed cohesive epithelial cell clusters and it was reported as suspicious of malignant epithelial tumor. Cytology report correlated with histopathology and later final diagnosis was given as Basal cell carcinoma. BCC is always a diagnostic dilemma on Cytology for a pathologist.

Keywords: Basal Cell Carcinoma; FNA; Skin Adnexal Tumor; Cytology

Introduction

Basal cell carcinoma is a slow growing; locally aggressive, rarely metastasizing malignant tumor originates from basal layer of skin and invades the adjacent tissue. It is more common in Caucasians than Asians and often grouped under non-melanoma skin cancer [1]. Cytology is an important preoperative investigation tool and a pathologist is able to give an impression of a lesion whether it is benign or malignant. It is not commonly used technique in dermatology, unlike other specialties, such as Gynaecology, ENT, Surgery etc. (1)On cytology, reports of skin adnexal tumors and BCC are less because of great diagnostic dilemma. Features to be looked on cytology for any skin adnexal tumors and BCC are cellularity of the smear, pattern and arrangement of cells,

cohesive clusters of epithelial cells, and degree of atypia in the epithelial cells, peripheral palisading, clear cells, ghost cells, vacuolated cytoplasm, mucin, stroma, mitosis and necrosis. Any skin adnexal tumors or BCC should be reported after going through all these features on cytology [2-4]. We are presenting this case of BCC which had diagnostic dilemma on FNA and features on cytology favour malignant epithelial tumor from its close differentials.

Case Report

A 60 year old female patient presented with swelling over left nasal ala which was gradually progressive in size and painful for a period of 3 years. On local examination it was a single irregular swelling measuring 2x2 cm with area

of crusting and tenderness. FNA was performed with the standard procedure [5-9] and the cytology smears were moderately cellular with epithelial cells which were arranged in small clusters, sheets and occasionally in papillaroid arrangement. Individual cells showed scant cytoplasm with ill-defined cell borders and round to oval dark nuclei. Focal peripheral palisading was also noted. There was no nuclear pleomorphism, mitotic activity or necrosis. There was also absence of dehiscence, squamous cells, mucin, stroma, clear cells, ghost cells or giant cells. Based on these findings, it was reported as malignant epithelial tumor (Figures 1-3). Later on cytology features of malignant epithelial tumor correlated with histopathology and final diagnosis was given as Basal cell carcinoma.

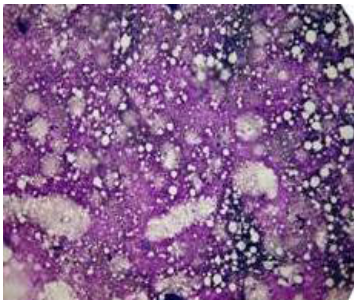


Figure 1: Showed moderately cellular smear [4x, MGG stain].

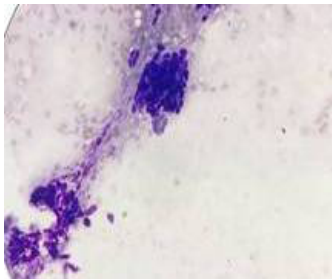


Figure 2: Showed cohesive cluster of cells with papillaroid arrangement [10x, MGG stain].

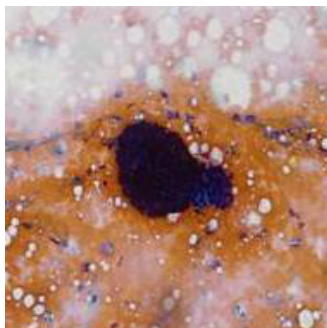


Figure 3: Showed small clusters with Focal peripheral palisading [40x, MGG stain].

Discussion

Cytological examination is an important primary tool in a preoperative investigation of skin adnexal tumors and recurrent neoplastic lesions. FNA has been effective to differentiate between benign and malignant epithelial tumors along with skin adnexal tumors [10]. The cytological differences between BCC and skin adnexal tumors are explained in Table 1. BCC is a common type of cutaneous malignancy clubbed together with squamous cell carcinoma as a non-melanoma skin cancer to differentiate from the group of melanotic malignancy [2]. Usually BCC is diagnosed on histology specimen but studies have shown that these non-melanotic carcinomas can be diagnosed on cytology but studies are less [1,2]. The subtyping of these malignant epithelial tumors and skin adnexal tumor is difficult on cytology [3,4,11].

Points to Noted on Cytology	Basal Cell Carcinoma	Skin Adnexal Tumor
cellularity	Moderately to highly cellular	Cellular
pattern	Cohesive clusters, sometimes papillaroid	Small clusters with mature sebocyte with bubbly cytoplasm, sometimes two cell population
Associated feature	Peripheral palisade, degree of atypia in the cells	Ghost cells ,basement membrane like material, clear cells , foamy cells

Table 1: Shows cytological differences with BCC and skin adnexal tumors.

The various subtypes of BCC are superficial BCC, nodular, cystic, micronodular, pigmented metatypic, infiltrative. The subtype of these tumors on cytology is less studied and research has to be done for subtyping but differences between superficial and non-superficial can be reported on cytology. Superficial BCC showed tightly packed small cell clusters with mild atypia and peripheral palisade, absence of dehiscence of basal cells while non-superficial BCC shows large clusters of basal cells with severe grade of atypia, more of stromal material, more dehiscence of basal cells [3,4]. Few of the pointers towards BCC on cytology are low basal cell cellularity, mild atypia with peripheral palisade [2,3]. In our case also we had these findings which raised suspicion of BCC. However studies have suggested that cytology can be useful for making diagnosis before going for wide local excision [2,3]. On cytology it is always a dilemma to give final diagnosis of Basal cell carcinoma for a pathologist [10].

Conclusion

Cytological examination is easy to perform, does not require local anesthesia, saves time, is less expensive than a regular biopsy, and provides rapid diagnosis. Smear-taking for cytology is very well-tolerated, as it causes negligible trauma or discomfort to the patient. Therefore, it can be performed and, when necessary, it can be repeated even in apprehensive patients, and it is very useful in sites where a biopsy has been proven to be difficult to obtain, or where aesthetic problems may arise, such as the face. However, Cytology features must be confirmed with histopathology and later the final diagnosis can be concluded.

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