Role of Fine Needle Sampling in Diagnosis of Sebaceous Gland Carcinoma of Eyelid

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Abstract

Sebaceous gland carcinoma (SGC) of eye lid is a rare malignant neoplasm of ocular adnexa with aggressive local behavior. Because of its rarity and resemblance with other orbital lesions, cytological diagnosis is often challenging. In this article we highlight the cytological features of SGC and its differential diagnosis. The primary diagnosis was done on fine needle sampling (FNS) smears followed by histopathological confirmation of resected tumor. FNS is a relatively new method for acquiring cytological specimen. Major advantage of FNS over fine needle aspiration cytology (FNAC) lies on its adequate yield in a less hemorrhagic background.

Keywords: Sebaceous gland carcinoma; Cytology; Fine needle sampling

Introduction

Sebaceous gland carcinoma (SGC) of eyelid arises from Meibomian glands located in tarsal plate, glands of Zeiss associated with eyelashes, sebaceous glands found in caruncle and eyebrow skin [1]. They are more aggressive than their cutaneous counterpart and most lethal ocular adnexal tumor second only to melanoma [1]. It simulates a number of less aggressive pathological conditions affecting the eyelids. Among these papillomas, keratoacanthoma, chalazion, seborrheic keratosis, benign calcifying epithelioma and inverted follicular keratosis, squamous cell carcinoma and Basal Cell Carcinoma need to be differentiated [2]. In this article, we highlight the role of fine needle sampling (FNS) in early diagnosis of sebaceous gland carcinoma.

Case Report

A 65 year-old female patient is presented with nodular swelling over upper eyelid for last 6 months. On examination a small, non-tender nodular swelling measuring 1x1cm² with surface ulceration was found in the upper eyelid leading to inability to open the eye (Figure 1). General physical examination, systemic examination and other laboratory investigations did not reveal any abnormality. Fine needle aspiration cytology (FNAC) was advised. FNAC from the lesion was done by 22G needle, and yielded predominantly blood and its elements; hence FNS was subsequently carried out from the lesion. The lesion to be aspirated was pressed in between two fingers and the needle was moved to and fro in different directions. The material came to the needle hub by capillary suction. The needle was gently withdrawn and the syringe filled with air was attached with the needle hub. The aspirated material was expelled on the slide by moving the piston of the syringe. The slides obtained were stained with Giemsa and Haematoxylin and Eosin stain.

On microscopy the cellular smears showed cells arranged in dyscohesive clusters. The individual cells were large, pleomorphic with moderate amount of cytoplasm with small vacuole and a round to oval hyperchromatic nuclei. Occasional mitotic figures were seen. The background was hemorrhagic (Figure 2a and 2b). On cytology, a provisional diagnosis of sebaceous carcinoma was rendered. Subsequently excision biopsy of the tumor was done and histopathological examination (Figure 3) of the tissue confirmed our cytodiagnosis. Map biopsy of the conjunctiva to determine the extent of involvement of SGC was negative so treatment was limited to full-thickness eyelid resection. Patient is under follow up for last one year with no recurrence till date.

Discussion

Sebaceous gland carcinoma accounts for 1-5.5% of all eyelid malignancies [3]. Recent studies have shown that sebaceous carcinoma accounts for 33-60% of malignant eyelid tumors [4]. It has tendency to metastasize early. SCG is more frequent in upper eyelid.

Figure 1: A non-tender nodular swelling with surface ulceration in the upper eyelid.

Figure 2: Cytological smears showing mainly dyscohesive cell clusters; the individual cells are large, pleomorphic with moderate amount of cytoplasm with small vacuole and a round to oval hyperchromatic nuclei. Mitotic figures are frequently seen. (H and E stain, 400X magnification) and (Giemsa stain, 400X magnification).
(2/3rd cases) and in elderly females. Traditionally, biopsy has been considered to be the preferred mode of diagnosis of eyelid nodule, be it benign or malignant. But FNAC and FNS can come to rescue in making correct diagnosis by careful study of the smear. Prompt diagnosis of this tumor by FNAC/FNS increases the cure and survival rate.

FNS is the non-suction technique of acquiring cytological material especially in small and vascular lesions [5]. The diagnosis of sebaceous carcinoma is challenging due to its rarity and also because it mimics many non-neoplastic lesions like chalazion or chronic blepharitis [6).

Sebaceous gland carcinoma can also be scraped but a nodular swelling is more suitable for FNS. Aspirate yields highly cellular smears and demonstrate sheets, three dimensional clusters and singly scattered polygonal tumor cells having centrally located hyperchromatic and pleomorphic nuclei and cytoplasmic microvacuolation.

The cytologic differentials include a spectrum of lesions ranging from blephiritis, chalazion, pilomatricoma, to squamous cell carcinoma and basal cell carcinoma [7]. Presence of lipo-granuloma along with inflammatory cells and multinucleated giant cells indicate chalazion whereas non granulomatous inflammation with polymorphs suggests blepharocconjunctivitis [6]. On aspiration pilomatricoma yields anucleate keratinized squamous cells (ghost cell), basaloid cells, calcific debris, and inflammatory cells. BCC on other hand shows tight aggregates of cells with scanty cytoplasm and small hyperchromatic nuclei. The cells of squamous cell carcinoma have dense refractile cytoplasm. However, both lack the small cytoplasmic vacuoles of sebaceous carcinoma [6]. These vacuoles stain with oil Red O, indicating lipid which was not performed in our case.

Hence a painless growth in the lid in an aged persons, persisting in spite of medication and should be viewed with suspicion. The progressive diagnosis of tenacious carcinogen by simple FNS in the outpatient department itself avoids one additional surgical procedure, i.e. Tissue biopsy. It is also time saving for the surgeon and cost effective to the patient.

Acknowledgement
The authors thankfully acknowledge Prof (Dr) Amita Giri for her kind help and support.

References