Pigmented nodular lesion below eyelid in a retro positive patient

A 39-year-old lady presented to the outpatient department with complaints of an itchy black nodule below her right eyes. She reported that the lesion had slowly grown to its present size over the last one year. She was HIV positive and was on highly active antiretroviral therapy. She did not report weight loss, fever, or any significant past or family history. On clinical examination, a solitary pigmented dome-shaped exophytic papule (1.2×1.0×0.8 cm in size) with a keratotic center was seen below the right eyelid [Figure 1]. The lesion was excised and sent for histopathological evaluation. Histopathology revealed an exo- and endophytic cup-shaped lesion lined by squamous epithelium with marked hyperkeratosis, parakeratosis, filiform papillomatosis, and lobular configuration at the epithelial stromal interface [Figure 2a]. The lobules had peripheral basaloid and central squamous cells with the presence of a few squamous eddies and microvesicle formation [Figure 2b]. Melanin deposition and increased dendritic melanocytes were also seen [Figure 2c]. No ragged edges of squamous epithelium, overt nuclear atypia, or glassy eosinophilic cytoplasm were seen.

Question

What is your diagnosis?

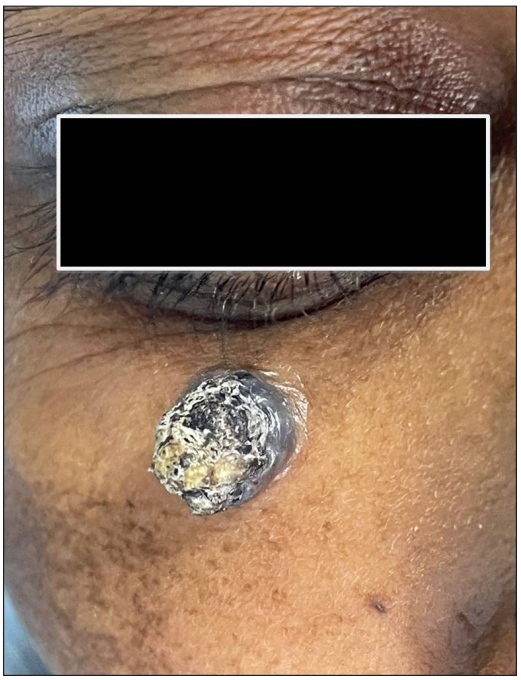

Figure 1: Hyperpigmented dome-shaped lesion with central keratotic crust near the right lower eyelid.

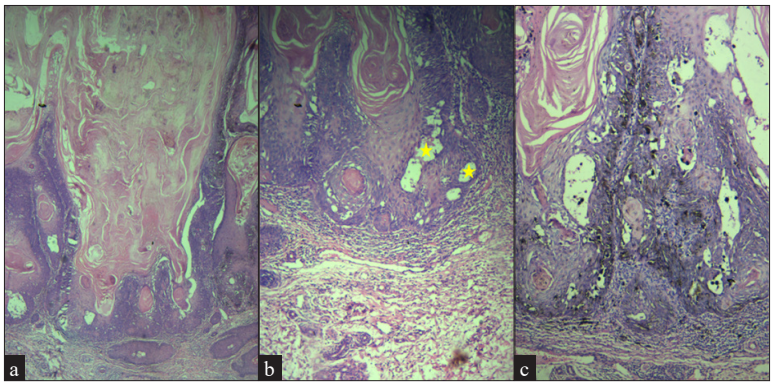

Figure 2: (a) Exo and endophytic proliferative squamous lesion with a central cup-shaped area filled with hyperkeratotic, parakeratinised material with blunt edges at epithelial-stromal interface (Haematoxylin and eosin, 40x), (b) microvesicles (stars) and squamous eddies (400x) and (c) increased dendritic melanocytes (100x).

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Diagnosis

Pigmented inverted follicular keratosis

Treatment

The lesion was already excised in toto with margins considering a possibility of malignancy clinically.

Discussion

Inverted follicular keratosis is a benign tumour of follicular infundibulum. It usually presents as a solitary skin-coloured papule or nodule, usually on the face and eyelid.[1] Clinically, a nodular dome-shaped lesion on the face raises the differential diagnosis of basal cell carcinoma, keratoacanthoma, squamous cell carcinoma, and at times malignant melanoma, seborrheic keratosis, and verruca vulgaris.[2–4] Knowledge of the differential diagnostic possibilities could enable the clinician to make an appropriate decision; however, at times it can be difficult to differentiate a benign from a malignant lesion.

Histopathological examination is mandatory in arriving at a correct diagnosis. Benign and malignant neoplasms can create diagnostic confusion with inverted follicular keratosis not only clinically but also histopathologically.[1–3] The differential diagnosis[1-4] of inverted follicular keratosis is given in Table 1. Even though, in this case, histologically the cup-shaped nature of the lesion created a diagnostic confusion with keratoacanthoma, the endophytic extension, blunt edge interface with stroma, squamous eddies, and microvesicles in the absence of glassy eosinophilic cytoplasm and ragged infiltrative edges guided us to the diagnosis of pigmented inverted follicular keratosis.

Inverted follicular keratosis can mimic other tumours even on dermoscopy. Dermoscopic features include a keratoacanthoma-like pattern with a central white amorphous area surrounded radially by hairpin vessels and a white halo and central yellow-white amorphous areas surrounded radially by hairpin vessels. Less common features include milky red globules, arborising vessels, linear irregular vessels and corkscrew vessels.[1,2,5]

With respect to the HIV positive status of the patient, certain skin lesions may present differently or appear more frequently due to the effects of immunosuppression. While inverted follicular keratosis is not specifically linked to retroviral infection, it's important to differentiate inverted follicular keratosis from other lesions, including more serious conditions like squamous cell carcinoma, Kaposi's sarcoma or viral warts. A biopsy is needed to confirm the diagnosis, particularly in the context of immunosuppression.

Inverted follicular keratosis lesions are usually cured by surgical excision.[5] In our case, complete excision with 5 mm margin was done since pigmented basal cell carcinoma was in the differential diagnoses.

Inverted follicular keratosis is a relatively rare benign adnexal tumour of hair follicle origin. Clinical diagnosis of inverted follicular keratosis is difficult and it may be misdiagnosed as other malignant conditions such as basal cell carcinoma. More awareness about this entity is needed and it should be considered as one of the differentials for pigmented nodular dome-shaped lesions in the face.

Table 1: Histopathological differential diagnosis of inverted follicular keratosis

S. No	Histopathology features	Inverted follicular keratosis	Keratoacanthoma	Seborrheic keratosis	Verruca vulgaris	Squamous cell carcinoma	Basal cell carcinoma
1	Nature of lesion	Exo- and endophytic	Usually endophytic	Exophytic	Exophytic	Ulcero-proliferative	Nodular
2	Koliocytes	Can be seen	Absent	Absent	Present	Usually absent	Absent
3	Chunky hypergranulosis	Can be seen	Absent	Absent	Present	Usually absent	Absent
4	Epithelial stromal interface	Pushing with blunt edges	Can be infiltrative	Pushing	Pushing	Infiltrative	Pushing
5	Glassy eosinophilic squamous cells	Absent	Present	Absent	Absent	Absent	Absent
6	Mitosis	Not uncommon in basal layers	Common throughout the epithelium	Absent or limited to basal layer	Absent or limited to basal layer	Common throughout the epithelium	Common throughout the epithelium
7	Atypical mitosis	Absent	Present	Absent	Absent	Present	Present
8	Cellular composition	Peripheral basaloid and central squamous cells	Squamous cells with glassy eosinophilic cytoplasm	Basaloid cells	Squamous cells	Atypical squamous cells	Basaloid cells with peripheral palisading
8	Microcysts in epithelium	Common	Absent	Absent	Absent	Absent	Absent

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Poongodi Rajagopal[1], Likhitha Reddy C[2], Hima Gopinath[3], Arundhathi Shankaralingappa[1]

Departments of [1]Pathology, [2]Plastic Surgery, and [3]Dermatology, All India Institute of Medical Sciences Mangalagiri, Guntur, Andhra Pradesh, India.

Corresponding author:
Dr. Likhitha Reddy C,
Department of Plastic Surgery,
AIIMS, Mangalagiri, Guntur, India.
drlikhitha.pls@aiimsmangalagiri.edu.in

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