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Case Report

Bilateral inguinal lymph nodes with extensive calcification obscuring malignancy in a patient with epidermodysplasia verruciformis

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Abstract

Malignancies causing inguinal lymphadenopathy in females are primarily carcinomas of the uterine cervix and vagina. Rarely, malignancies from other sites can involve inguinal lymph nodes and show non-classical findings like exuberant calcification. The case describes the cytological findings of extensive calcification in metastatic deposits of squamous cell carcinoma of the skin involving bilateral inguinal lymph nodes in a patient with epidermodysplasia verruciformis, a rare event. Despite difficult needling, the yield was sufficient to clinch the diagnosis on fine-needle aspiration cytology.

Keywords: Calcification, Squamous cell carcinoma, Epidermodysplasia verruciformis, Fine-needle aspiration cytology.

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1. Introduction

Cutaneous squamous cell carcinoma (CSCC) constitutes about 20% of all non-melanoma skin cancers.[1] The common sites affected are the sun-exposed areas of the body such as the head and neck. Trunk and extremities are less commonly involved.[2] Certain dermatological conditions carry an increased propensity for developing SCC. These include chronic discoid lupus erythematosus, lupus vulgaris, lichen planus hypertrophicus, lichen simplex chronicus, psoriasis, chronic lymphedema, necrobiosis lipoidica diabeticorum, disseminated porokeratosis, erythema elevatum diutinum and epidermodysplasia verruciformis (EV).[3,4]

The risk of lymph node metastasis in CSCC is overall low, estimated at less than 5%.[2] Mostly, the cervical and parotid groups of lymph nodes are affected. Involvement of the inguinal lymph nodes is rare in CSCC. Fine-needle aspiration cytology (FNAC), palpation guided, is a preliminary investigation of choice for palpable swellings. In the present case, we have reported metastatic CSCC to the bilateral inguinal lymph nodes in a setting of EV with extensive calcification on smears, which is a rarity.

2. Case Report

A 50-year-old female presented with multiple ulcerative lesions on the forehead, abdomen, and bilateral extremities along with significant bilateral inguinal lymphadenopathy. Whole-body positron emission tomography revealed fluorodeoxyglucose avidity in the enlarged, bilateral inguinal lymph nodes, suggestive of metastases. Examination showed 3x2 cm and 2x1 cm enlarged, firm to hard, non-mobile, non-tense, non-tender lymph nodes in the right and left inguinal regions (**Figure 1**), respectively.

After informed consent from the patient, FNA was performed from the bilateral nodes and yielded thick particulate gritty material. The needling was difficult, and it was also challenging to spread the material onto the slides to make smears. Both air-dried and alcohol-fixed smears were prepared and stained with May-Grünwald Giemsa (MGG) and hematoxylin & eosin (H&E), and Papanicolaou (Pap) stains, respectively. Smears showed extensive calcification with few scattered tumor cells with squamoid differentiation (**Figure 2**). The cells had hyperchromatic nuclei and dense cytoplasm (**Figure 3**). Findings were of metastatic SCC. A detailed history was taken, and it was discovered that the

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patient had a long-known history of EV with cutaneous lesions reported as SCC.

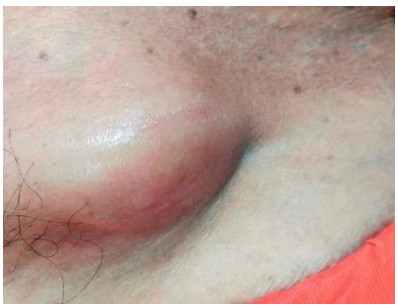

Figure 1: Enlarged left inguinal lymph node with tense and reddish overlying skin

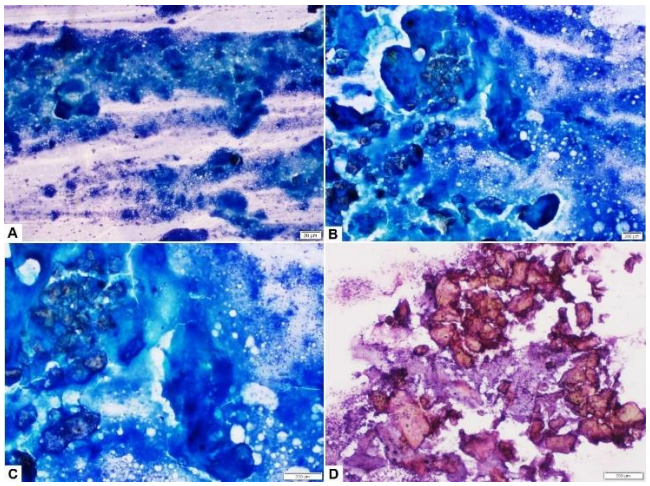

Figure 2: A & B): Extensive amorphous deposits on aspirate smears on low magnification; **C):** Higher magnification showing the same along with few scattered tumor cells in the background; D): The amorphous calcific debris, stromal fragments, and scattered tumor cells **(A-C:** May Grunwald Giemsa stain, **D:** Hematoxylin & Eosin stain)

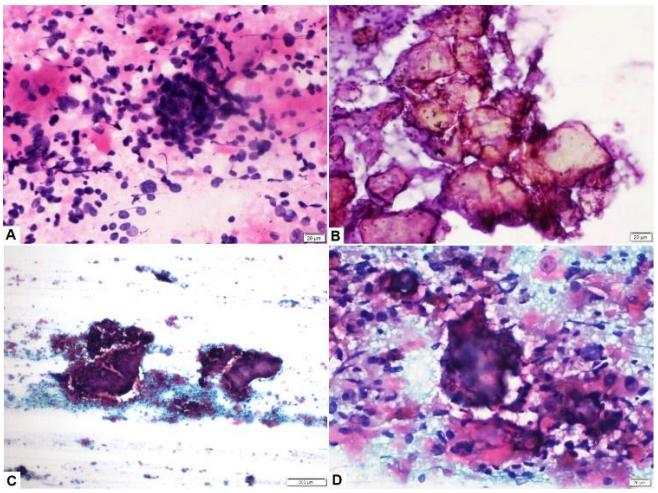

Figure 3: A): Scattered and cohesive tumor cells on higher power; **B):** Calcific deposits on higher magnification; **A, B):** Hematoxylin & Eosin stain); **C & D):** Papanicolaou stained smears highlight keratinized tumor cells

3. Discussion

Epidermodysplasia verruciformis is an uncommon genodermatoses characterized by the presence of multiple warty lesions on the face, distal extremities, or the whole body.[5-7] It can be congenital as well as acquired. The congenital cases show an autosomal recessive inheritance with inactivating mutations of Epidermodysplasia verruciformis (EVER) 1 gene and EVER2.[4,5] On the other hand; the acquired cases occur in the setting of organ transplantation, such as renal transplants.[6] There is also an increased susceptibility to clinical human papilloma virus (HPV) infection in these patients, especially HPV 5 and 8.[6,8] Clinically, the lesions are skin colored, red or hyperpigmented papules resembling flat warts or scaly brown pityriasis versicolor-like macules and patches or seborrheic keratosis-like lesions. These lesions rarely undergo malignant transformation, especially in sun-exposed areas, producing Bowen's disease and CSCC.[9,10] Such a transformation to SCC is typically seen in the second or third decade of life.[6,11] Furthermore, HPV is postulated to act as a co-carcinogen in the event of progression of EV to SCC.[5]

CSCCs may metastasize to the axillary, epitrochlear, and inguinal lymph nodes in a minor subset of cases.[1,2] There is scant published data on inguinal lymph nodes showing metastasis from SCC arising from trunk and extremities or other sites with a lesser degree of exposure to the sun. Few studies have reported a metastatic rate of 3.9% to 4.9% for CSCC arising from trunk and extremities and 8% for CSCC arising on hand. These patients usually belong to the elderly, and males are affected more frequently than females.[2] Lymph node metastases from non-SCC frequently show evidence of calcification. However, it is rare for metastatic SCC to demonstrate calcification in the lymph nodes, especially CSCC. Such lymph node calcifications have been reported in metastatic SCC of head and neck origin.[12]

When present in the lymph node, calcification brings into consideration several other differential diagnoses; granulomatous conditions such as tuberculosis, sarcoidosis, silicosis, and amyloidosis.[13] Malignant lymph node calcifications are seen with metastatic papillary thyroid carcinoma, metastatic lung and breast adenocarcinoma and post chemo/radiation therapy in lymphomas.[14] Most female patients with SCC involving inguinal lymph nodes have a detectable primary in the cervix, vulva, or vagina. The index patient was a known EV case, with CSCC who developed metastasis to bilateral inguinal lymph nodes.

To conclude, extensive calcification on cytology in metastatic CSCC to the inguinal lymph nodes in EV setting is rare. Since exuberant calcification is not a typical feature of SCC, knowledge of the clinical findings and stringent screening of aspiration smears by the cytopathologist enables a confident diagnosis that has therapeutic implications.

4. Source of Funding

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5. Conflict of Interest

None.

6. Acknowledgement

None.

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