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Case Report

Disseminated superficial actinic porokeratosis: A detailed case report with clinical, dermoscopic and histopathological insights

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Abstract Disseminated superficial actinic porokeratosis (DSAP), one of the variant of porokeratosis, is a disorder of keratinization that usually affects areas of skin exposed to sunlight. Here, we report a case of a 39 year old female who presented with multiple flat dark colored lesions limited to sun-exposed areas of upper extremities. Following a clinical suspicion of DSAP, the diagnosis was supported by dermoscopic findings, and further it was confirmed on histopathological examination.

Key words
Cornoid lamella; Dermoscopy; Porokeratosis.

Introduction

The term porokeratosis was coined by Mibelli, as he noticed eccrine ostia involvement in one of his patient. Resphigi in 1893 and Andrews in 1937 both reported superficially disseminated variant of porokeratosis.[1] Porokeratosis is divided into various types depending upon the site of distribution, morphology of lesions and clinical course which include linear porokeratosis, porokeratosis of Mibelli, punctate porokeratosis, disseminated superficial actinic porokeratosis (DSAP), disseminated superficial porokeratosis and porokeratosis palmaris et plantaris disseminate.[2] Amongst these, DSAP is the most common variant.[3]

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Case report

A 39 year old female, farmer by occupation presented with a complaint of multiple flat, circular dark coloured lesions over both forearms and dorsum of hands since last 8 months. These lesions became itchy, whenever the patient got exposed to sunlight. Patient had no significant medical or surgical history.

On cutaneous examination multiple annular hyperpigmented macules of size around 0.5 to 1 cm with slight central atrophy were present over the sun-exposed areas of bilateral upper-limbs i.e. over the extensor aspects of both forearms and dorsum of hands **(Figure 1)**. Lesions were absent over lower limbs, face, mucosae and other photo-covered areas. After taking written informed consent from patient, the clinical photographs were taken.

Dermoscopic examination revealed a keratin rim with brownish pigmentation and non-peripheral

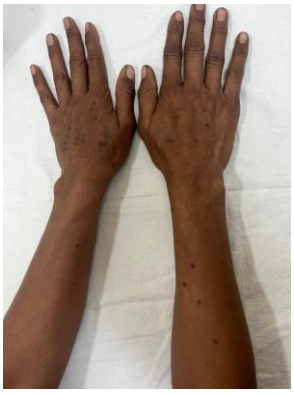

Figure 1 Multiple flat round hyperpigmented macules with slight central atrophy over extensor aspects of both fore arms and dorsum of hands.

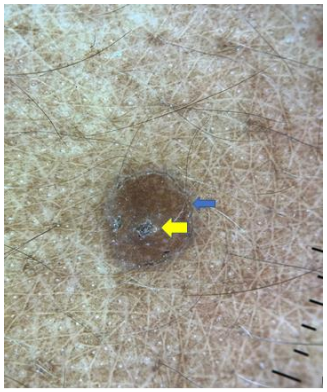

Figure 2 Keratin rim (Blue arrow), non peripheral scaling (Yellow arrow) (Dermlite, polarised, 10X).

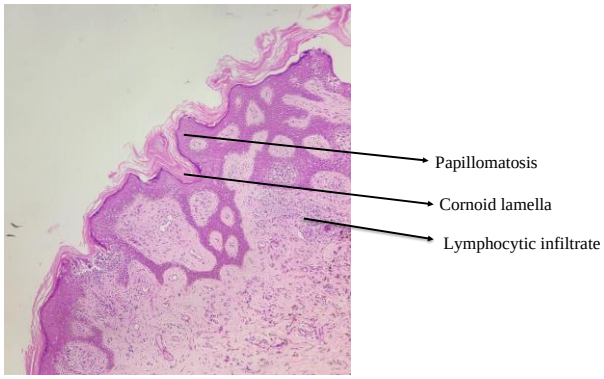

Figure 3 Epidermis displaying Cornoid lamella and papillomatosis with mild inflammatory infiltrate in dermis (H&E, 10X).

scaling **(Figure 2)**. A small 3mm punch biopsy from the peripheral border of the lesion present over the right forearm was taken for histopathological evaluation which revealed epidermis with multiple cornoid lamellae beneath which diminution of granular layer, along with lymphocytic infiltrate in upper dermis **(Figure 3)**. Based upon these clinical, dermoscopic and histopathological findings, the patient was diagnosed as case of disseminated superficial actinic porokeratosis. She was advised to follow strict photoprotective measures along with the application of broad-spectrum sunscreen daily in the morning over sun exposed areas and imiquimod 5% cream at night over the lesions.

Discussion

Porokeratoses, is a rare group of abnormal epidermal keratinization disorder, clinically presents as annular plaques with a slightly raised border, which histopathologically corresponds to cornoid lamella.[4] The exact cause of porokeratoses is unknown, however it is believed to be the result of aberrant keratinocytes proliferating clonally. Various other risk factors include exposure to ultraviolet radiation,[5] fair skinned individuals and internal malignancies.[4]

Currently, DSAP is thought to be the most prevalent type of porokeratosis globally which is seen most commonly in males and usually affects population in third to fourth decade of life.[4] Lesions are usually seen in photo-exposed areas such as extensor aspects of upper and lower limbs, face and 'V' area of neck.

The presence of a keratin rim is a dermoscopic characteristic of porokeratosis. Various other relevant findings include light brown pigmentation in keratin rim, dotted vessels, non-peripheral scales and brown dots in central area.[6] Porokeratosis shows typical features on histopathological examination. Cornoid lamella is a characteristic feature which is a column of parakeratotic cells with a basophilic pyknotic nuclei, beneath which the granular layer is usually absent. Various differential diagnosis of DSAP are pityriasis rosea, actinic keratoses, guttate type of psoriasis and sometimes tinea corporis.[1]

Porokeratosis if left untreated have potential to undergo malignant transformation.[1] Linear porokeratosis variant has higher potential to develop malignant transformation (20%) whereas disseminated superficial actinic porokeratosis has around 3.4% chance.[1] Various

treatment options include cryotherapy, vitamin D3 analogues, topical 5-fluorouracil, diclofenac gel, topical imiquimod, dermabrasion, oral retinoids and carbondioxide laser therapy.[2,7]

Conclusion

Porokeratoses are a group of uncommon skin condition which is due to faulty epidermal keratinization. DSAP is one of the variant of porokeratosis. Sometimes diagnosing porokeratosis clinically might be difficult and challenging. In such cases dermoscopy plays a crucial role by improving the in-vivo diagnostic accuracy and also helps to locate a precise area in a lesion for biopsy which can boost the effectiveness and productivity of histological examination. Topical imiquimod, 5-fluorouracil, cryotherapy, oral retinoids are various modalities of treatment. Educating patients regarding the photo-protection and regular follow-up to clinically evaluate the lesions and perform screening for any malignancies is equally important.

Declaration of patient consent The authors certify that they have obtained all appropriate patient consent.

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Conflict of interest Authors declared no conflict of interest.

Author's contribution

KR, SQ: Identification and diagnosis of the case, manuscript writing, has given final approval of the version to be published.

RD, PMAK: Diagnose and management of the case, critical review, final approval of the version to be published.

Table 1 showing comparison between various case reports on DSAP.

Author	*Age (years)/ Sex*	*Site of lesions*	*Clinical features*	*Dermoscopy*	*Histopathology*	*Treatment*
Present case	39/Female	Extensors of bilateral forearms and dorsum of hands	Multiple itchy annular hyperpigmented macules with slight central atrophy.	Keratin rim with brownish pigmentation and non-peripheral scaling	Cornoid lamellae beneath which diminution of granular layer, along with lymphocytic infiltrate in upper dermis	Topical imiquimod 5% cream
Dhillon KS *et al.*[3]	30/ Male	Face, extensor aspect of forearm,dorsum of both feet	Multiple itchy annular hyperpigmented macules with raised margins.	Nil	Cornoid lamella and absent granular layer.	CO_2 Laser
Waqar *et al.*[2]	67/ Female	Distal legs, arms	Multiple itchy erythematous to brown annular plaques with raised keratotic margin.	Peripheral double-track with brown dots.	Cornoid lamella, dyskeratotic cells in epidermis and severe solar elastosis in dermis.	Nil
Laura Gray Pruitt *et al.*[4]	72/ Male	Lower limbs, buttocks, groin, penis	Multiple itchy erythematous macules 0.5-2 cm size with collarette of scale	Nil	Cornoid lamellae with dyskeratotic cells at base	Triamcinolone 0.1% cream and hydrocortisone valerate 0.2% cream
Nicola *et al.*[8]	58/ Female	Sun exposed areas of limbs	Erythematous plaques with peripheral scaling	Central atrophy with irregular vessels, hyperkeratotic border	Nil	Nil

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