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Case Report

A wart or SCC? A case study and literature review of clinico-dermoscopic presentation in squamous cell carcinoma (SCC)

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Abstract Squamous cell carcinoma (SCC) is the second most common skin cancer, after basal cell carcinoma, in immunocompetent white individuals, and the most common skin cancer in immunosuppressed organ transplantation recipients worldwide. The diagnosis of SCC, although easily made in typical cases, may sometimes be difficult. Dermoscopy and histopathological examination help in diagnosis of SCC. Dermoscopy improves early diagnosis of skin cancer compared to the unaided eye. We report here a case of SCC presenting with an asymptomatic, warty growth on the shin for 1 year. Dermoscopic findings include yellowish hue with silvery white scaling and surface had few, irregularly arranged haemorrhagic dots. Histopathological examination showed features of SCC: nucleomegaly, pleomorphism, hyperchromasia & keratin pearl formation. A concise review of published literature has been presented of SCC cases reported with dermoscopic findings. We have here a case of moderately differentiated Squamous cell carcinoma of the shin; with an unusual history, clinical presentation and dermoscopic findings.

Key words
Squamous cell carcinoma, dermoscopy, case report, review of literature.

Introduction

Squamous cell carcinoma (SCC) can present as a painless nodule/ plaque/ fungating mass often associated with chronic scaling, fissuring & ulceration of the skin. Usually presenting over sun exposed areas (head & neck, dorsa of forearm & hands), occasionally it may arise on sun-protected areas or sites of chronic inflammation/ injury/ burns.[1] On shins, SCC usually develops over an ulcerative lesion, which may be missed & often misdiagnosed as a chronic non healing ulcer.[2] Immunosuppression, particularly in organ transplant recipients, is an emerging factor in tumorigenesis. [3] SCC need to be differentiated from other benign or premalignant keratinocyte proliferations. Dermoscopic features commonly seen in SCC include scales/ keratin, bleeding, white structureless areas, white circles, white halo, polymorphic vessels such as linear irregular, hairpin or grouped glomerular/ dotted vessels. [4,5] We present here an atypical case of SCC on the shin with a comprehensive literature review of clinico-dermoscopic presentation in SCC.

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Case report

A 69-year-old man presented with an asymptomatic, warty growth present on the shin for 1 year. There were a few episodes of bleeding on minor trauma from the lesion; there

Figure 1 A well-defined skin coloured to erythematous, verrucous nodular-plaque 2.5×1.5cm^2 in size with few pin point haemorrhages over surface of lesion.

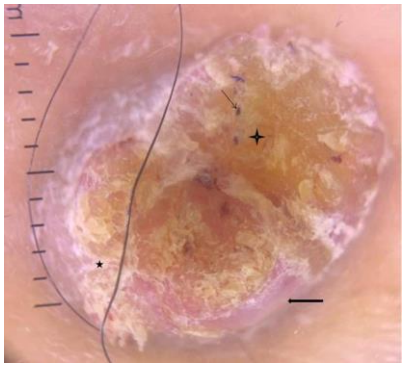

Figure 2 Dermoscopy [10×, DermLite© DL 4W, Dana Point, CA,USA]: yellowish hue (✧), haemorrhagic dots (arrow), silvery-white scales(★), dusky-red margin (bold arrow).

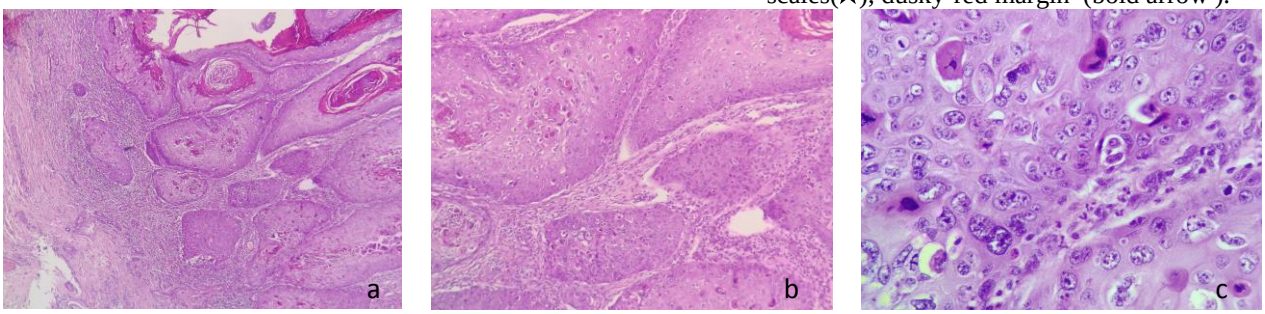

Figure 3 (H &E) Epidermis shows disorderly cell maturation with nucleomegaly, atypia, atypical mitosis, keratin pearls with invasion into papillary and reticular dermis. a. 40× b. 100× c. 400×.

was no significant medical/ surgical history. On examination, a well-defined skin coloured, verrucous nodular-plaque of size 2.5×1.5cm^2 was present over the anterior aspect of lower one-third of right shin. The margin of the lesion had a dusky red erythema & the surface showed a few haemorrhagic dots **(Figure 1)**.

We performed dermoscopy for the lesion [DermLite©DL4W, Dana Point, CA, USA], which showed an erythematous to skin coloured plaque with a dusky red margin, the surface had yellowish hue at the centre of lesion with silvery white scales near the periphery. Few, irregularly arranged haemorrhagic dots were scattered on the surface of lesion **(Figure 2)**.

Keeping a differential of verruca vulgaris, SCC, warty dyskeratoma and clear cell acanthoma, we performed an excisional skin biopsy. On histopathological examination, hyperkeratosis, acanthosis and focal papillomatosis of epidermis was seen; disorderly cell maturation in the entire wall thickness of epithelium seen as nucleomegaly, pleomorphism, hyperchromasia & keratin pearl formation was noted. Tumor infilterated into the papillary and reticular dermis **(Figure 3)**. The margins were free from tumour cells.

Discussion

Squamous cell carcinoma is a malignant tumour arising from epidermal keratinocytes or its appendages, representing 20-50% of all skin cancers.[6] Age-standardized incidence of SCC ranges from 9 to 96 per 100,000 male inhabitants and 5 to 68 per 100,000 female inhabitants.[7-9] In Australia, the incidence of SCC was as high as 499 per 100,000 for men and 291 per 100,000 in women. The incidence of SCC is higher in men as compared to women overall

Table 1(a-c) Region-wise summary of clinico-morphological & dermoscopic features reported in SCC by various authors.

a. Europe

Sr. No.	*Author, Year*	*Country*	*n*	*Age/Sex*	*Site*	*Clinical Morphology*	*Dermoscopic Findings*
1	Zalaudek *et al*.,2004 Dermatologic surgery[11]	Austria	1	80/M	Chest	Well-defined, black papule with a hyperkeratotic and ulcerated surface	***Pigment:*** Diffuse, homogenous blue pigmentation with distinct, irregularly distributed, blue-gray granular structures ***Other:*** Black to dark brown crust in the centre, whitish areas surrounding the central ulceration
2	Zalaudek *et al*.,2012 J Am Acad Dermatol[12]	Italy	78	47-94yrs (73.7)	Face	Not reported	***Vascular:*** Hairpin vessels, linear-irregular vessels ***Pigment:*** Diffuse erythema and a red starburst pattern ***Other:*** Targetoid hair follicles, white structure-less areas, a central mass of keratin, and ulceration
3	Lallas *et al*.,2014 Br J Dermatol[13]	Italy	143	Mean= 77.0±11.9 years M-106 F-37	Head & neck= 108 Trunk=11 Extremities= 24	Flat-50 Elevated-54 Nodular-39	***Poorly differentiated:*** Red predominant colour; linear irregular vessels of small caliber; white structure-less area at periphery. ***Moderately differentiated***: Yellow predominant colour; keratin with blood spots, moderate vessels density; white structure-less area at periphery ***Well-differentiated****:* White predominant colour, scales, keratin with blood spots; white perifollicular circles & white perivascular halos
4	Manfredini *et al*., 2017 J Eur Acad Dermatol venereal[14]	Italy	121	Mean age-78.79	Head/neck-74 Extremities-36 Trunk-11	Not reported	***Invasive SCC :*** White structure-less areas and dotted or glomerular & Polymorphic vessels. ***Poorly differentiated:***Red areas and the presence of erosion/ulceration. ***Well- differentiated or moderately differentiated*** *:* White areas
5	Masdemont B et at.,2018 J Eur Acad Dermatol Venereol[]15]	Spain	3	Range 72-95(81) M-1 F-2	Nose-1 Cheek-1 Hand-1	Not reported	***Vascular:*** Glomerular vessel ***Pigment****:* Red pseudonetwork ***Other:***Keratin mass, ulceration, structure less brown areas, scales
6	Corneli *et al*., 2019 Dermatol Pract Concept[16]	Italy	1	77/M	Chest	Pigmented nodule with central ulceration	***Vascular***: White, polymorphous vessels; surrounding a central hyper keratotic area. ***Pigment*****:** Blue areas at periphery
7	Papageorgiou *et al*.,2020 J Am Acad Dermatol[17]	Greece	104	Mean age:76.2 M-116 F-49	Head/neck	Not reported	***Vascular:*** Hairpin, linear and dotted vessels ***Pigment****:* White halos surrounding vessels, blood spot, bleeding***Others:*** Scale and keratin

b. Asia

Sr. No.	*Author, Year*	*Country*	*n*	*Age/Sex*	*Site*	*Clinical Morphology*	*Dermoscopic Findings*
1	Akay *et al*., 2016. Dermatol Pract Concept[18]	Turkey	1	44/M	Abdomen	Erythematous hyperkeratotic, crusted, and ulcerated plaque	***Vascular:*** Coiled vessels ***Pigment:*** Linear arrangement of gray dots and without prominent white circles and ulceration ***Others:*** Red and white structureless areas
2	Omori *et al*., 2016. J dermatol[19]	Japan	1	67/F	Left auricle	Hard, reddish gray nodule with a yellowish brown crust on the anterior surface of the left auricle	***Vascular:*** Dotted/glomerular vessels, linear irregular vessels ***Others:*** White structureless areas, yellow to light brown opaque scales, diffuse/discrete scales and microerosions/ulcerations
3	Kogame *et al*., 2017. J Dermatol[20]	Japan	1	79F	Right breast	Ulcerated, brown-red nodule in the center of a sharply demarcated, tan brown, elevated plaque	***Vascular:*** Polymorphous vessels on the central nodule ***Others***: Fissures/ridges without dotted vessels on the peripheral plaque, and ulceration.

c. Rest of the world

Sr. No.	*Author, Year*	*Country*	*n*	*Age/Sex*	*Site*	*Clinical Morphology*	*Dermoscopic Findings*
1	Felder *et al*., 2006. Dermatologic surgery[21]	USA	1	71/M	Back	Scaly red plaque	***Vascular:*** Glomerular vessels ***Others:*** Fine scales
2	Lin *et al*.,2014. Dermatol Pract Concept[22]	Australia	50	53-103yrs(79) M=30 F=20	Head and neck=17 Trunk=4 Upper extremity=13 Lower extremity=16	Not reported	***Vascular:*** Polymorphic, glomerular, linear irregular, atypical and hairpin vessels ***Others:***White structureless areas, white circles and white keratin pearls
3	Chung *et al*., 2015. J Am Acad Dermatol[23]	USA	1	70/F	Back	Brown, scaly plaque with irregular borders	***Pigment:*** Scattered brown dots ***Others:*** Focal streaks at the periphery and within the borders of the lesion.

especially at older ages, and rates increase with age.[10] Although the majority of SCCs are successfully eradicated by surgical excision, a subset is associated with a higher likelihood of recurrence, metastasis, and death. Early identification of these aggressive tumours with various modalities like dermoscopy/ histopathological examination can guide proper management, prevent mortality and improve prognosis.

Various studies have been done from Europe, Asia and rest of world on clinico-dermoscopic appearance of SCC. A study of 143 case by Lallas *et al.* reported a red predominant colour and numerous linear irregular vessels of small calibre and a white structureless area at periphery in poorly differentiated cases; Yellow predominant colour, keratin with blood spots, a moderate vessels density and a white structureless area at the periphery in moderately differentiated and scales, keratin, blood spots and the characteristic white perifollicular circles and white perivascular halos in well differentiated SCC. Other studies reporting clinico-dermoscopic features are summarised. In this case there were unusual clinico-morphological, dermoscopic features. The unusual feature was de novo development of SCC on shin with no prior history of injury/ trauma; the dermoscopic findings too were not typical of SCC. Therefore, a high index of suspicion must be kept in lesions with keratinocyte proliferation particularly in older age group.

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