Dermoscopy of Bowen's Disease in Brown Skin: A Case Report

Balachandra S. Ankad[1,*], Vijay D. Dombale[2], Vishnu M. Moodalgiri[1] and Saipriya Gourishetty[1]

[1]*Department of Dermatology, S. Nijalingappa Medical College, Bagalkot, Karnataka, India*

[2]*Department of Pathology, S. Nijalingappa Medical College, Bagalkot, Karnataka, India*

Abstract: Bowen's disease (BD) is a rare pre-malignant intraepithelial tumor affecting older adults and should be differentiated from other pigmented lesions including pigmented basal cell carcinoma, melanocytic nevus and melanoma. Therefore, distinction of BD is difficult clinically, requiring histopathology for confirmation. Since it is a pre-malignant condition, management highly depends on the accurate diagnosis. Hence, there is a need for diagnostic technique which can clinically diagnose BD. Authors evaluated dermoscopic patterns in BD and found specific patterns which are characteristic of BD and it would aid in the early detection of BD.

Keyword: Dermoscopy, Bowen's disease, patterns.

INTRODUCTION

Bowen's disease (BD) is a rare pre-malignant intraepithelial tumor affecting older adults. It presents clinically as a well-delineated asymptomatic pigmented plaque on the sun exposed areas. Slow growth, scaly plaque, pink color and flat surface are characteristic of BD. Histopathologically, it is characterized by atypical keratinocytes that involve the full thickness of the epidermis [1].

BD should be differentiated from other pigmented lesions like seborrheic keratosis, pigmented actinic keratosis, solar lentigo, pigmented basal cell carcinoma, melanocytic nevus, blue nevus and melanoma. Therefore, distinction of BD is difficult clinically requiring histopathology for confirmation [2]. Since it is pre-malignant condition, management highly depends on the accurate diagnosis. Hence, there is a need for diagnostic technique which can clinically diagnose BD.

Dermoscopy, an *in vivo* technique for the microscopic examination of pigmented skin lesions, has the potential to improve the diagnostic accuracy [3]. It can be utilized in this regard. Dermoscopic patterns in BD are described in the literature. However, there are no reports from the Indian subcontinent. In this report, dermoscopic findings of BD are evaluated in Indian patient.

*Address correspondence to this author at the Department of Dermatology, S. Nijalingappa Medical College, Navanagar, Bagalkot-587102, Karnataka, India; Tel: +91 9980410056; E-mail: drbsankad@gmail.com

CASE REPORT

Case 1

A 70 year old male presented with asymptomatic pigmented plaque on the left side of the abdomen since 9 months. Detailed examination revealed a well defined plaque measuring about 2cm x 1.5cm on the left hypochondrium. There was slight scaling and rough surface (Figure **1**). There was no history of trauma, medication, surgery in the past. Systemic examination was unremarkable. Blood analysis was within normal limits. Pigmented basal cell carcinoma, superficial spreading melanoma and Bowen's disease were in the list of provisional diagnosis. Dermoscopy revealed multicomponent patterns with sharp borders, regular and patchy arrangement of brown dots, scaly surface, dotted vessels at periphery, pigment network, peripheral radial streaks and gray homogenous pigmentation (Figures **2**, **3**). Biopsy was done to

Figure 1: Clinical image of Bowen's disease showing a well defined pigmented plaque with variegated surface and scaling.

E-ISSN: 2310-998X/15

confirm the diagnosis and it showed hyperkeratosis, parakeratosis and acanthosis. Atypical keratinocytes were observed at all levels of the epidermis and dilated capillary vessels in the dermis. Fontana Masson stain revealed melanin in the epidermis and melanophages in the dermis in a grouped pattern (Figure **4a**, **b**, **c**).

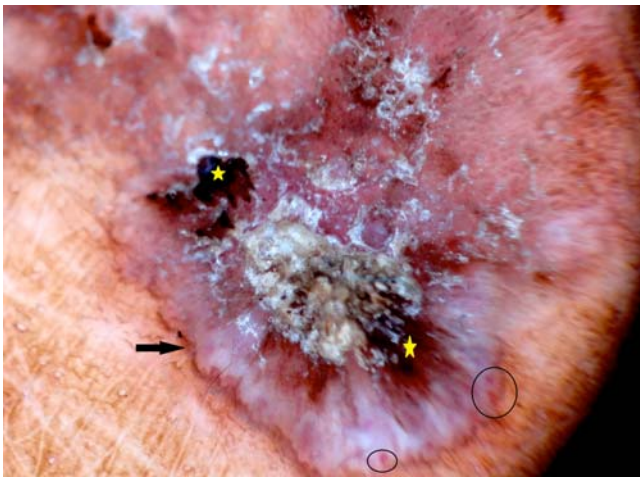

Figure 2: Dermoscopy showing scaly surface, brown globules (yellow stars), peripheral streaks, sharp borders (black arrow) and dotted and hair pin vessels (black circle).

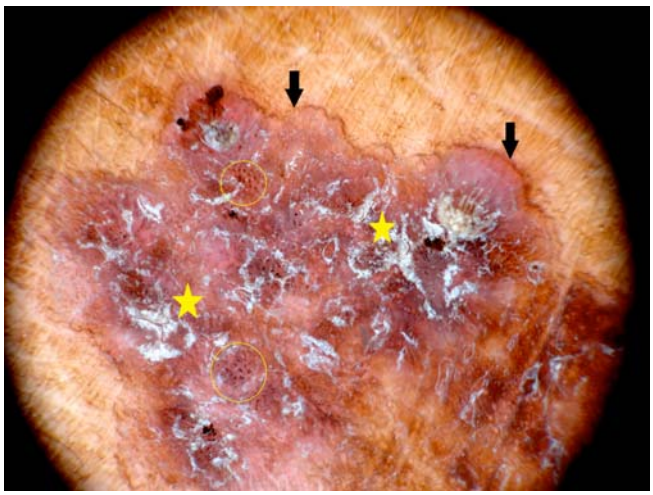

Figure 3: Dermoscopy showing scaly surface (yellow stars), sharp borders (black arrows), patchy distribution of brown dots (yellow circles).

DISCUSSION

Dermoscopy is a non-invasive method that has greatly improved the diagnostic clinical accuracy on pigmented as well as non-pigmented lesions when performed by experienced observers [3]. Bugatti *et al.* described multicomponent or variegated patterns, pseudo and pigment network, scaly surface, atypical vessels, irregular dots and globules as dermoscopic patterns in BD and concluded these patterns are not specific for BD [4]. However, in another report by Zalaudek *et al.,* glomerular vessels, scaly surface, small brown globules in a patchy distribution and a gray homogenous pigmentation as well as pigment network and streaks were described as specific for BD [5]. This report contradicted the previous findings. Identical dermoscopic features were found by authors with dotted or coiled vessels in a linear arrangement rather than glomerular vessels [6]. In our study also, dermoscopy demonstrated similar findings including scaly surface, brown globules, 'hair-pin' vessels or dotted vessels at the periphery. Vascular patterns are distinctive for certain tumors and can be used to discriminate between different skin lesions. In psoriasis, vessels appear as dotted and arranged regularly in a wide spread fashion [7]. Seborrheic keratosis demonstrates 'hairpin-like' vessels situated at the periphery [8]. In lichen sclerosis et atrophicus, they are arranged in a 'net-like' pattern [9]. BD demonstrates dotted or coiled vessels and glomerular vessels which larger than dotted vessels and arranged regularly in clusters.

Amorphous brownish and grayish pigmentation along with brown dots in a regular arrangement at the periphery of the lesion were explained as most sensitive dermoscopic criteria for BD [6]. Brown and gray pigmentation represent melanin pigment in epidermis and dermis respectively. Brown dots and globules were arranged in patchy pattern and gray homogenous pigmentation was not prominent suggesting lesser dermal pigment in our patients. Finger print patterns and comedo-like openings were described by the authors [1]. These patterns are identical to the dermoscopic patterns of seborrheic keratosis [8]. However, other features like telengiectasia, moth eaten borders are characteristic of seborrheic keratosis. Such findings were not observed in this study.

Scaly surface or whitish areas in a strucureless pattern suggest hyperkeratosis and acanthosis in histopathology [9]. In lichen planus, scaly surface appears as pearly white 'starburst' pattern which corresponds to Wickham striae [7]. In pigmented basal cell carcinoma, it covers entire lesion diffusely in a 'veil-like' pattern [10]. Hence, pattern of whitish areas can give clue to the diagnosis of a condition. Although, scaly surface does not follow any pattern in BD, whitish-pink background was observed. Peripheral streaks, which indicate elongation of rete ridges in histopathology, were also noted. This pattern was not described by in previous studies.

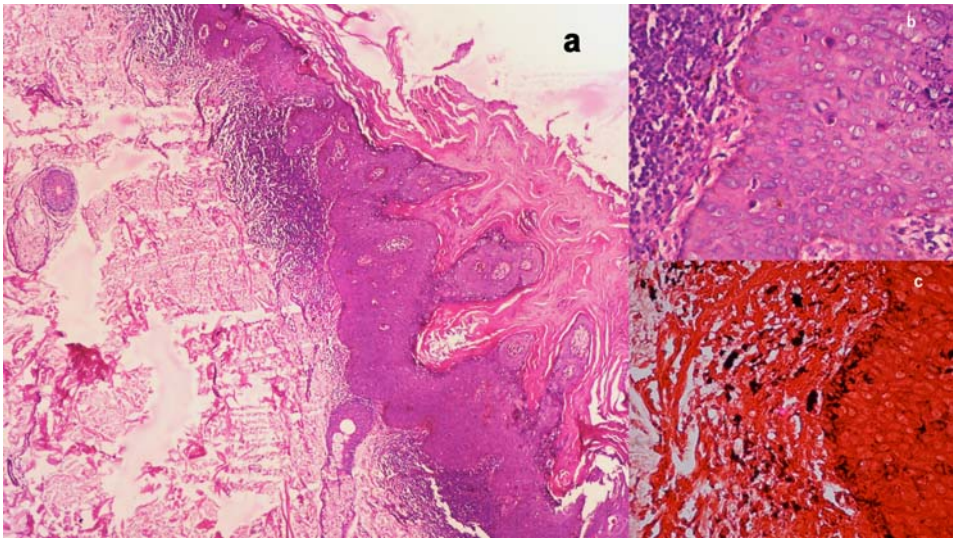

Figure 4: Histopathology of Bowen's disease shows hyperkeratosis, parakeratosis and acanthosis (**a**) [H&E,10x], atypical keratinocytes in epidermis and dilated capillaries in dermis (**b**) [H&E,40x] and Fontana Masson stain revealed melanin pigment in epidermis and in dermis (**c**) [H&E,40x].

In a report, development of squamous cell carcinoma in BD was detected by dermoscopy. This emphasizes the importance of dermoscopy in BD [11]. Hence, dermoscopy plays a vital role in the diagnosis as well as in the observation of new growths within lesions of pigmented conditions including BD.

CONCLUSION

Dermoscopy of BD in patients with brown skin demonstrates specific patterns such as scaly surface, patchy brown dots, irregular pigment network, streaks and peripherally arranged dotted and linear vessels with well defined borders. Gray pigmentation was subtle. Hence, authors recommend usage of dermoscopy in BD to make diagnosis and to detect neoplastic growths early in BD.

REFERENCES

[1] Mota ANCM, Piñeiro-Maceira J, Alves MFGS, Tarazona MJM, Barcaui CB. Pigmented Bowen's disease. An Bras Dermatol 2014; 89(5): 825-7. http://dx.doi.org/10.1590/abd1806-4841.20142725

[2] Krishnan R, Lewis A, Orengo IF, Rosen T. Pigmented Bowen's disease (squamous cell carcinoma in situ): A mimic of malignant melanoma. Dermatologic Surgery 2001; 27: 673-74. http://dx.doi.org/10.1046/j.1524-4725.2001.01021.x

[3] Zalaudek I, Citarella L, Soyer HP, Hofmann-Wellenhof R, and Argenziano G. Dermoscopy features of pigmented squamous cell carcinoma: a case report. Dermatologic Surgery 2004; 30: 539-40. http://dx.doi.org/10.1097/00042728-200404000-00017

[4] Bugatti L, Filosa G, De Angelis R. Dermoscopic observation of Bowen's disease. J Eur Acad Dermatol Venerol 2004; 18: 572-74. http://dx.doi.org/10.1111/j.1468-3083.2004.01008.x

[5] Zalaudek I, Argenziano G, Leinweber B, Citarella L, Hofmann-Wellenhof R, Malvehy J, *et al.* Dermoscopy of Bowen's disease. Br J Dermatol 2004; 150(6): 1112-6. http://dx.doi.org/10.1111/j.1365-2133.2004.05924.x

[6] Cameron A, Rosendahl C, Tschandl P, Riedl E, Kittler H. Dermatoscopy of pigmented Bowen`s disease. J Am Acad Dermatol 2010; 62: 597-604. http://dx.doi.org/10.1016/j.jaad.2009.06.008

[7] Lallas A, Kyrgidis A, Tzellos TG, Apalla Z, Karakyriou E, Karatolias A, *et al*. Accuracy of Dermoscopic Criteria for the Diagnosis of Psoriasis, Dermatitis, Lichen Planus and Pityriasis Rosea. Br Journal Dermatol 2012; 166: 1198-205. http://dx.doi.org/10.1111/j.1365-2133.2012.10868.x

[8] Bowling J. Introduction to dermoscopy. In: Bowling's, Diagnostic dermoscopy- The illustrated guide. 1st edn. West Sussex: Wiley-Blackwell 2012; pp. 2-14.

[9] Ankad BS, Beergouder SL. Dermoscopic patterns in lichen sclerosus: A report of three cases. Indian Dermatol Online J. 2015; 6: 237-40. http://dx.doi.org/10.4103/2229-5178.156450

[10] Menzies SW. Dermoscopy of pigmented basal cell carcinoma. Clin Dermatol 2002; 20: 268-9. http://dx.doi.org/10.1016/S0738-081X(02)00229-8

[11] Cauthen A, Thareja S, Cohen G. Pigmented Bowen Disease in a Black Patient: Novel Dermoscopic Findings. Cutis 2013; 91: 258-259.

Received on 15-12-2015 Accepted on 28-12-2015 Published on 15-01-2016

DOI: http://dx.doi.org/10.12970/2310-998X.2015.03.02.3