Study Letter

Dermoscopy of aggressive basal cell carcinomas

Sir,

The histological subtype of basal cell carcinoma (BCC) is the most important factor used to determine the best treatment modality. Although up to 26 histological subtypes of basal cell carcinoma have been identified, only three of these (nodular, superficial and aggressive) are relevant to determining the appropriate treatment choice.[1] Superficial and nodular basal cell carcinoma, both usually demonstrate an indolent growth pattern and have a low-risk for incomplete treatment and recurrence. The third, a high-risk subtype, includes all basal cell carcinomas that exhibit aggressive-growth such as infiltrative, morpheaform, micronodular and basal cell carcinoma with squamous differentiation.[2] The "aggressive-growth" subtypes are characterized by an infiltrative growth pattern that has poor circumscription and tendency for perineural and perivascular invasion leading to difficulty in surgical eradication and consequent high recurrence rates.[2]

Early diagnosis and accurate treatment are essential to reduce morbidity and prevent recurrence/metastasis. Dermoscopic examination, by providing additional morphological information, can aid the clinical diagnosis of basal cell carcinoma. However, the significance of dermoscopy in determining the aggressiveness of basal cell carcinoma remains to be elucidated.

The aim of the present study was to evaluate the dermoscopic patterns of aggressive basal cell carcinoma and to investigate the possible role of dermoscopy in identifying the aggressive nature of the tumor.

Seven histopathologically proven aggressive basal cell carcinomas (4 morpheaform and 3 infiltrative) were identified and closely analyzed, using DermLite FOTO Equipment at 10-fold magnification.[3] Each aggressive tumor was evaluated for the presence of various dermoscopic features relevant for the diagnosis of basal cell carcinoma. In mixed-type lesions, the superiority rule was applied according to the most unfavorable subtype: aggressive > nonaggressive. Almost all were primary tumors except one that was a recurrent basal cell carcinoma (infiltrative type).

Males were predominantly affected in both variants of aggressive tumors [Table 1]. Patients with infiltrative basal cell carcinoma were older (mean age 72 years; range 65–76 years) than patients with morpheaform basal cell carcinoma (mean age 66.5 years; range 51–78 years).

All tumors were located in the head/neck region. Morpheaform basal cell carcinomas were larger (mean diameter 4.07 cm; range, 1.8–7 cm) than infiltrative basal cell carcinoma (mean diameter 2.9 cm; range, 1.2–4.5 cm), with a longer history of

Table 1: Demographic, clinical and dermoscopic characteristic of aggressive basal cell carcinomas

Histological subtype of BCC	Age	Gender	Location	Size (cm)	Arborizing vessels	Arborizing microvessels	Large blue-gray ovoid nests	Spoke-wheel areas	Leaf- like areas	Multiple blue-gray globules	Ulceration	SFT	Multiple smallerosions	Milky-red background	Structureless hypopigmentation	Structureless hyperpigmentation	White shiny areas	White shiny lines	Multiple dots
Morpheaform/nodular	65	Female	Above the lip	1.8		+							+	+	+	+	+	+	
Morpheaform	72	Male	Temporal	3.4		+						+		+	+		+	+	
Morpheaform/nodular	78	Male	Lower eyelid/cheek/nose	4.1	+	+						+	+	+			+		
Morpheaform	51	Male	Mandible	7.0		+		+		+		+		+	+	+			+
Infiltrative	65	Female	Forehead	3.0	+		+	+		+			+			+	+		+
Infiltrative	76	Male	Preauricular	1.2		+							+	+			+		
Infiltrative/nodular	75	Male	Lower eyelid/cheek/nose	4.5	+	+				+	+		+			+	+	+	

BCC: Basal cell carcinoma, SFT: Short fine telangiectasias

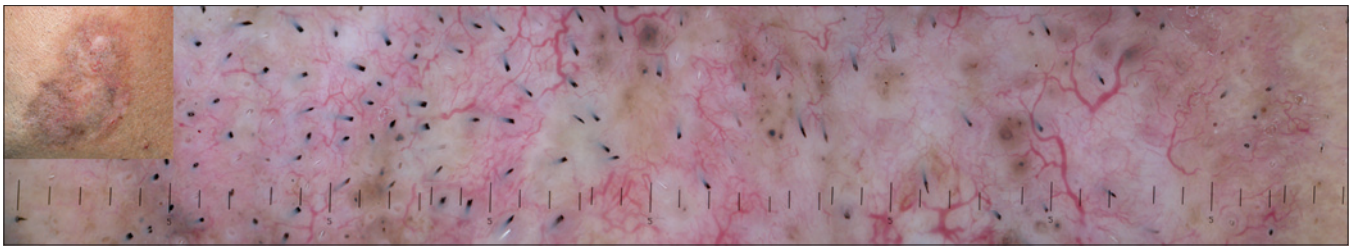

Figure 1: Morpheaform basal cell carcinoma. On dermoscopy, numerous arborizing telangiectatic vessels and areas of structureless hypo/hyperpigmentation are seen

duration (78 months, range = 36–120 months), compared to infiltrative basal cell carcinomas (8.7 months, range = 2–12 months) [Table 1].

The most frequently detected features in morpheaform basal cell carcinoma were milky-red background and arborizing microvessels (4/4, 100%), followed by short fine telangiectasias (SFT), white areas and structureless hypopigmentation (3/4, 75%). Structureless hyperpigmentation, white lines and multiple erosions were rarer findings (2/4, 50%) [Figures 1 and 2].[3]

All three infiltrative basal cell carcinomas demonstrated multiple erosions and white areas (3/3, 100%). Arborizing vessels/microvessels, multiple blue-gray globules and structureless hyperpigmentation were found in 2 of 3 (66.7%) infiltrative basal cell carcinomas [Figure 3a and b]. [3]

Pyne *et al.*, established that aggressive basal cell carcinoma tends to have no or less pink within the tumor area and absent or few vessels in the central tumor area compared to other subtypes.[4] A recent study that investigated correlation of dermoscopic findings with different histopathologic variants of basal cell carcinoma showed that dermoscopy had a low sensitivity to detect risk of recurrence.[5] Arborizing vessels was found to be the main dermoscopic finding in infiltrative basal cell carcinoma and truncated vessels and globules in micronodular basal cell carcinoma.[5]

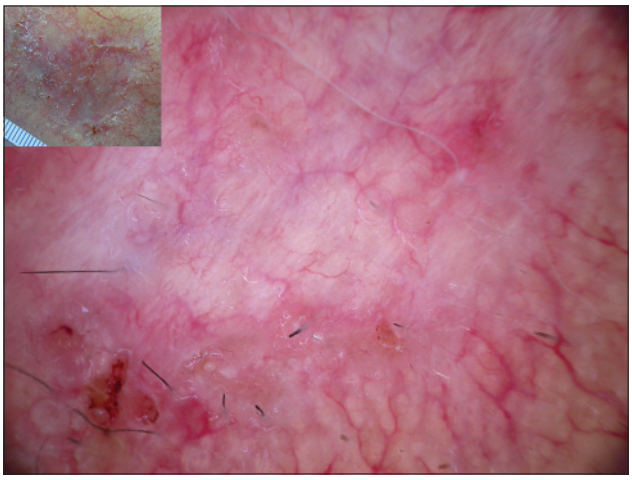

Figure 2: Morpheaform basal cell carcinoma. On dermoscopy, a milky-red background, with arborizing telangiectatic vessels, short fine telangiectatic vessels, white lines, structureless hypopigmentation and multiple small erosions are seen

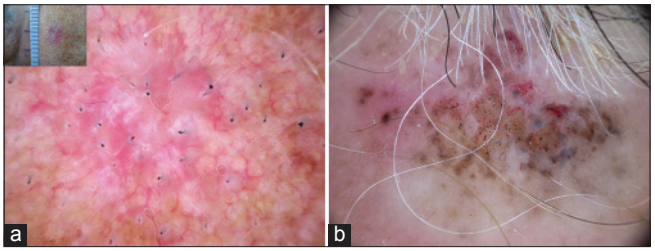

Figure 3: Infiltrative basal cell carcinomas. (a) Flat clinical presentation with typical dermoscopic features in thin tumors (milky-red background, short fine telangiectatic vessels) in combination with white structures. (b) Nodular clinical presentation: Numerous pigmented features with structureless hypo/hyperpigmentation are identified

This article confirms that dermoscopy is useful in the detection of basal cell carcinoma with limited impact in discriminating aggressive basal cell carcinomas from the non-aggressive ones. Detailed dermoscopic analysis did not reveal any distinct feature that would point to the aggressive nature of tumors. In the infiltrative basal cell carcinomas that were evaluated, the presence of dermoscopic features correlated with tumor thickness. In the clinically thicker parts of infiltrative basal cell carcinomas, multiple erosions and pigmented features were identified, whereas in the thin parts of tumors white areas were frequently found.

Similar dermoscopic features were also seen in morpheaform basal cell carcinomas with one important difference, the flat parts of tumors had well developed, branched arborizing vessels, in contrast to the domination of short fine telangiectasias in flat, superficial basal cell carcinoma. This could be explained by deeper infiltration of tumor cells and consequently increasing vascular needs of the tumor

tissue. Furthermore, white areas/lines were a striking feature, also localized to the flat parts of lesions. This probably correlates with prominent collagen in the tumor stroma of morpheaform basal cell carcinoma.

In conclusion, dermoscopy appears to be of limited diagnostic value to determine the aggressive histological nature of basal cell carcinoma, though larger comparative studies are required to ascertain its value.

Financial support and sponsorship

Nil.

Conflicts of interest

There are no conflicts of interest.

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Access this article online	
Quick Response Code:	Website: www.ijdvl.com
	DOI: 10.4103/0378-6323.168343

How to cite this article: Popadic M. Dermoscopy of aggressive basal cell carcinomas. Indian J Dermatol Venereol Leprol 2015;81:608-10.

Received: September, 2014. **Accepted:** April, 2015.