Arborizing vessels in a targetoid hemosiderotic hemangioma: mistaken dermoscopic diagnosis of basal cell carcinoma

María L. Enei¹, Francisco M. Paschoal², Rodrigo Valdes³

¹Dermatology, Brazilian Society of Dermatology, Iquique, Chile, ²Dermatology, ABC School of Medicine, FMABC, São Paulo (SP), Brazil ³Institute of Histopathology, Histonor, Antofagasta, Chile

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ABSTRACT Targetoid hemosiderotic hemangioma (THH) or hobnail hemangioma (HH) is a benign vascular lesion that presents with the classical clinical presentation of a ring-shaped tumor having a targetoid appearance, with a central purple-brown papule surrounded by a thin pale area and an ecchymotic ring on the outside. Dermoscopic features and patterns of HH have been documented and have proven to be sufficient to establish a clinical diagnosis in many cases.

We present a facial lesion in which both the clinical presentation and dermoscopy were atypical. The presence of arborizing vessels in the dermoscopic pattern, never before described for this lesion, led us to the diagnosis of basocellular carcinoma (BCC). We also report the changes in this pattern experienced over 12 months of progression and their correlation with the histopathologic findings.

Introduction

Targetoid hemosiderotic hemangioma (THH) or hobnail hemangioma (HH) is a benign vascular lesion, which mainly affects young people with a prevalence in men.

The classical clinical presentation is a ring-shaped vascular lesion having a targetoid appearance, with a central purple-brown papule surrounded by a thin pale area and an ecchymotic ring on the outside [1,2]. However, HH tends to undergo cyclical changes and, therefore, the clinical presentation can vary. Thus, depending on the staging, the differential diagnosis considered should include lesions such as hemangioma, angiokeratoma, Kaposi’s sarcoma, dermatofibroma, insect-bite reactions, melanocytic nevus and melanoma.

Dermoscopy is a non-invasive diagnostic technique useful for diagnosing both melanocytic and non-melanocytic pigmented lesions, as well as vascular skin lesions. Dermoscopic features and patterns of HH have been increasingly documented and have proven to be sufficient to make a clinical diagnosis in many cases. Here, we present a facial lesion in which both the clinical presentation and dermoscopy were atypical. The presence of arborizing vessels in the dermo-
The histopathogenesis of HH is not yet clear. It is accepted that a local precipitating factor (trauma or hormonal influence) leads to the development of microshunts between the lymphatic and blood vessels in the dermis. The capillary pressure of the latter would cause erythrocytes to pass into the lymphatic spaces forming aneurysmal structures. In older lesions, the emerging lymph
for skin lesions. The first reference to
epiluminescence microscopy for HH
dates back to 1998 and describes well-
demarcated red lagoons in the papular
region of the lesion [6]. Since then, no
more than 12 reports based on this tech-
nique have been published, covering
a total of 48 lesions studied (Table 1;
[5-16]).

We highlight the series of 35 cases
recently published by Zaballos et al [7]
in which the authors were able to estab-
lish that the unequivocal dermoscopic
pattern for HHT is only present in 52%
of lesions and is represented by the pres-
ence of lagoons in the center, a yellowish
circular intermediate area, and a purple
or ecchymotic ring on the periphery.

In this series, the most common pat-
tern (71.2%) consisted of central lagoons
and a homogeneous area on the periph-
ery, which can also be observed in other
vascular tumors and 22.8% of the lesions
were fully occupied by a reddish purple
or reddish brown homogeneous area.

This variety of dermoscopic patterns
correlates with the different stages of
tumor progression. Thus, the prolifera-
tion of dilated vessels in the superficial
dermis correlates with the lagoon struc-
tures; the hemorrhagic phenomena are
reflected in the ecchymotic ring, and
fibrosis of older lesions gives rise to
whitish homogeneous structures. In our
case, neither of the two dermoscopic
evaluations showed the structures or
patterns described to date for HH. Thus,
vessels become clogged, causing the dis-
appearance of these ectatic vessels in the
papillary dermis. Additionally, there is
increased deposition of hemosiderin and
subsequent fibrosis [3]. Thus, the histol-
ogy shows a vascular lesion confined to
the dermis, with a biphasic pattern. The
upper portion has dilated and irregular
vascular spaces with thin walls delin-
eated by endothelial cells display a “hob-
nail” aspect, i.e., round, with little cyto-
plasm and a large nucleus that protrudes
into the vascular lumen. In the lower por-
tion, thinner vascular spaces appear to
cut their way through the collagen
bundles. Local deposits of hemosiderin
or siderophages are common, secondary
to a local hemorrhagic processes.

Although studies based upon immu-
nohistochemistry lead to recognition of
the lymphatic origin of HH [4], recent
observation of these markers suggests
also a biphasic histological behavior for
these lesions. Takayama, et al [5],
found not only positivity for CD31 and
D2-40 in the upper portion of the hob-
nail, confirming the lymphatic nature
of the lesion, but also positivity for
CD31, CD34-factor VIII, and α-SMA,
suggesting an endothelial origin of the
lower portion. As far as diagnosis is con-
cerned, this is often difficult, especially
if the lesion lacks the typical targetoid
appearance.

Dermoscopy is a noninvasive imag-
ing technique that allowed us to signifi-
cantly increase the diagnostic precision
we highlight that, as far as we know, this
is the first time these arborizing vessels
have been mentioned for this lesion. This
finding, in conjunction with the
blue, round structure, was the pattern
that led us to posit the diagnosis of BCC.

However, several lesions have been
reported to predominantly feature
arborizing vascular structures, making
it impossible to discard the diagnosis
of BCC. Some examples are hidradenoma,
trichoblastoma, trichoepithelioma, cyl-
indroma, hydrocystoma, and poroma.

Other vascular structures, such as
points or polymorphous irregular ves-
sels, have been described in HH in the
central portion of the lesion, which have
been linked to deeper vessels in the der-
mis [7].

On the other hand, we believe that
the round, blue structure and brown
points, in addition to the diffuse brown
pigmentation of the first image (Figure
1), corresponded as a set to an ecchy-
motic point and initial deposition of
hemosiderin and siderophages in the
middle dermis, respectively; this phe-
nomenon increased until becoming a
dense network in the center of the lesion
after 12 months of progression, covering
the globalar structure and brown points.

It was interesting to compare the
two dermoscopic studies and observe the
collapse of the central portion of the ves-
sels with the persistence of extreme fine
vessels and telangiectasias. The emer-
gence of two round, yellowish brown
structures in the middle of the pigmented area is also reported (Figure 2), which could correspond to ectatic vessels in the superficial dermis described in the histopathology report, similar to the structures observed in the lymphangiomas. In neither of the two stages did we observe homogenous areas, lagoons, thin pigmented networks, or whitish structures, such as the ones described in published cases of HH.

In conclusion, arborizing vessels and blue clods are not unique to BCC and have been described for other tumors. However, this is the first time that they are described in a lesion of HH. We highlight this case because of its unusual dermoscopic presentation. Therefore, we add BCC to the differential diagnosis of HH and highlight the fact that when the clinical presentation is uncharacteristic, histopathology continues to be the gold standard for diagnosing this lesion.

References

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A: Central red and dark peripheral circular lacunae and reddish-violaceous homogeneous area / violaceous nuclei surrounded by a pale halo / well-defined network of circular blebs.

B: Red lacunae located at the center, an intermediate yellow circular homogeneous area, and a violaceous or ecchymotic homogeneous ring on the periphery. C: Homogeneous area.

D: Red, roundish lagoon-like areas in the focus of the injury, with a fine pigment network at the periphery. E: Slight peripheral pigment network surrounding an extensive reddish, structureless area with chrysalis-like structures. HP: Histopathology. DC: Dermoscopy.

TABLE 1. Published Dermoscopic Descriptions of Hobnail Hemangioma


