Pigmented Primary Carcinoma of the Breast in a Man: A Dermoscopic Challenge

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Introduction

Primary mammary carcinomas involving the nipple rarely may exhibit features such as pigmented skin lesions mimicking melanoma clinically, histopathologically, and dermoscopically because of the presence of melanin pigment and melanophages. We describe a rare case of invasive ductal carcinoma that presented as a pigmented tumoral lesion involving the nipple of a man.

Case Presentation

A 61-year-old man presented with a pigmented itchy skin lesion on his right nipple that had been growing slowly for 7 months; in recent months the lesion had been bleeding easily. A physical examination revealed a well-demarcated, 15- × 10-mm, grayish black ulcerated plaque with induration on the right nipple (Figure 1A). Dermoscopic findings are shown in Figure 1, B and C. Histopathological and immunohistochemical examination of the skin biopsy showed a diagnosis of grade II infiltrative ductal carcinoma infiltrating the areola and nipple (Figure 2). The patient had modified radical mastectomy and axillary lymph node dissection.

Conclusions

Male breast cancer is a rare neoplasm that accounts for 1.2% to 2% of all cancers among men and 1% of the total cases of breast cancer. Unlike more reported cutaneous metastatic pigmented carcinoma of the breast, primary pigmented carcinoma of the breast is extremely rare.

In the present case, dermoscopy showed a chaotic pattern including central white structureless area, white lines, ulceration, circumferential blue-gray structureless areas, peppering, and polymorphic vessels. These dermoscopic features confirm the difficulty of making a correct presurgical diagnosis with dermoscopy since differential diagnoses included mainly melanoma and basal cell carcinoma but also pigmented Paget disease and metastatic breast carcinoma. In the reported cases of primary pigmented breast carcinoma, it has been hypothesized that the proliferation of melanocytes might be stimulated by a carcinoma located in close prox-
iminity to the epidermis or alternatively melanocytes in the epidermis might have migrated to the tumor nest as a result of a chemoattractant released by the tumor cells [1]. Another hypothesis was that the disturbance of the basal layer could cause melanocyte migration into tumor nests and transfer melanin to tumor cells, leading to the dermoscopic large brown clods and blue-white clods that arranged randomly, similar to basal cell carcinoma in a case of pigmented invasive ductal carcinoma [2]. The dermoscopic circumferential blue-gray structureless areas in our case could be...
the result of ulceration and basal vac- 
ular degeneration leading to melanin incontinence with numerous melano- 
phages and melanin in the papillary 

dermis. In contrast to some reported 
cases of pigmented breast cancer, there 
was no melanin inside carcinoma cells 
but it was dispersed along the papillary 
dermis. In those cases, one hypothe- 
sis for the presence of melanin inside 
carcinoma cells was that melanocytes 
may inject melanin into carcinoma cells 
through their dendrites and neoplastic 
cells may phagocytose the terminal parts 
of dendritic processes of melanocytes 
with subsequent dispersal of the melaa- 
nin granules contained therein.

In summary, pigmented lesions on 
special sites can be challenging and der- 
moscopy has limitations in discrimi- 
nation of melanoma from nonmelano- 
cytic neoplasms. Clinical, dermoscopic, 
and histopathological examination 
including immunohistochemical analy- 
ses are necessary to achieve the correct 
diagnosis for suspicious cases.

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