Abstract
Desmoplastic melanoma (DM) is a type of spindle cell melanoma characterized by the absence of pigment. The clinical diagnosis of DM represents a challenge for the practitioner and the pathologists because it can mimic benign or malignant skin tumors and even inflammatory skin disorders. We here discuss a case of a patient presented with multiple nodular lesions of the lower extremity following electrocautery to a lesion in her sole which was misdiagnosed as planter wart. Our clinical diagnosis was Kaposi sarcoma, hypertrophic lichen, or extensive verruca vulgaris. However, histopathological examination showed spindle-shaped cells positive for Melan-A and S100 revealing the diagnosis of DM.

Key Words: Desmoplastic melanoma, malignant melanoma, melanoma

Introduction
Cutaneous melanoma represents a very aggressive type of cancer that has one of the fastest growing incidences worldwide, with over 150,000 new cases estimated in developing countries in 2010.[1] Desmoplastic melanoma (DM) is an uncommon variant of melanoma, representing <4% of all cutaneous melanomas.[2] It usually manifests as a firm papule, nodule, or plaque.[2] Although it usually appears in chronically sun-damaged skin, this type of melanoma can occur anywhere, including acral and mucosal sites.[3] Clinically, DM has different course from conventional melanoma. It shows a higher tendency for local recurrence and less common metastases to regional lymph nodes.[4] Early detection is a challenge for both physicians and pathologists. Clinically, more than 50% of lesions are amelanotic, and the clinical features may mimic slowly growing nonmelanocytic lesions.[5] Histologically, lesions may resemble benign or malignant spindle-cell proliferative lesions.[6]

In Egypt, skin cancer is uncommon malignancy compared to Western societies.[6] We report an unusual case of DM in an Egyptian patient. The patient signed an informed consent for her data and pictures to be used for scientific purposes.

Patients and Methods
A 70-year-old female presented with multiple unilateral nodules and plaques below the left knee, some of those lesions were hyperkeratosis, some were ulcerating while others were oozing. The patient had also multiple glistening, erythematous smooth-surfaced papules at shin of her tibia [Figure 1]. An ulcer at sole of the foot was noticed which had punched out edge and necrotic floor [Figure 2], the left foot showed pitting edema. The patient reported that these lesions started in her sole, which was diagnosed as a planter wart and was cauterized 4 months ago. A month later, multiple lesions appeared on shin of her tibia as well as the pitting edema. The site of the cautery did not heal and left an ulcer behind. Our initial differential diagnosis was Kaposi sarcoma, hypertrophic lichen planus, verruca vulgaris, and deep fungal infection.

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Two biopsies were taken from the nodules on the shin of tibia and were examined in the pathology department in Benisuef university hospital.

**Results**

Histopathological examination using hematoxylin and eosin (H and E) stain excluded fungal infection (no neutrophils, compact orthokeratosis, or hyphae within stratum corneum by [periodic acid-Schiff] PAS stain), hypertrophic lichen planus (no acanthosis, orthokeratosis, or band-like lymphocytic infiltrate in papillary dermis), and verruca vulgaris (no hyperkeratosis, acanthoses, or koilocytosis). Instead, there were dermal amelanotic spindle-shaped cells with cytologic atypia, retraction artifacts, and intervening desmoplastic stroma in which the collagen fibers extend between tumor cells separating them from one another, together with atypical melanocytic proliferation at dermal-epidermal junction [Figure 3a and b].

Examination revealed that tumor cells were strongly positive for Melan-A and S‑100 [Figure 3c and d] and negative for CD34 excluding Kaposi sarcoma. Histological and immunohistochemical findings were keeping with desmoplastic malignant melanoma. General examination and metastatic workup (brain as well as chest and abdomen magnetic resonance imaging) revealed no evidence of distant metastasis.

**Discussion**

The clinical appearance of DM can be highly variable and usually appears as indurated discoid papule, plaque, or nodule. Lesions are frequently nonpigmented although a lentigo or lentigo maligna-like discoloration adjacent to the lesion is not uncommon.[8]

Hence, the clinical presentation may resembles that of benign and malignant skin tumors, cysts, scars, seborrhic keratosis, hemangioma, lipoma, leiomyoma, and folliculitis.[8,9]

Microscopically, DM is characterized histologically by dermal and/or subcutaneous infiltrates of spindle-shaped cells arranged singly or in thin fascicles within a prominent collagenous or, less commonly, myxoid stroma.[4] The extent of desmoplasia in an invasive melanoma required for a diagnosis of DM varies considerably in the literature but should be prominent throughout the vast majority of the tumor. Moreover, DM may or may not be associated with in situ melanoma in the epidermis and/or follicular epithelium.[10]

Histopathologic differential diagnosis of DM includes both benign and malignant cutaneous proliferations composed of spindle-shaped cells.[6] Benign cutaneous proliferations that may be confused with DM include scar tissue, dermatofibroma, neurofibroma, schwannoma, piloleiomyoma, and desmoplastic Spitz nevus.[9] DM can also be histopathologically mistaken for malignant spindle cell neoplasms, such as squamous spindle cell carcinoma, spindle cell atypical fibroxanthoma, and leiomyosarcoma.[9] Thus, DM can be difficult to diagnose microscopically by conventional H and E staining.[4]

Immunohistochemical staining is often recommended as a valuable adjunct for the diagnosis. Immunophenotypically, DMs are usually positive for S‑100 protein. However, S100 is not a specific marker for melanocytes; it also stains neural tissue, chondrocytes, lipocytes, dendritic cells, some regenerating fibroblasts, and some histiocytes.[4]

In our case, the microscopic findings did not match with our clinical suspicion of hypertrophic lichen planus, verruca vulgaris, and no fungal threads could be detected by H and E or by PAS stain. Instead, the histopathological findings pointed to either melanoma or Kaposi sarcoma. Immunohistochemical was of great value revealing tumor cells strongly positive for S-100.
and Melan-A, but negative for CD34 excluding Kaposi sarcoma and revealing the diagnosis of DM.

**Conclusion**

We present a case of uncommon variant of melanoma known as DM. The case was initially misdiagnosed as warts. Our clinical diagnosis was Kaposi sarcoma, hypertrophic lichen planus, or verruca vulgaris. Histological examination aided by immunohistochemical staining revealed the diagnosis of DM.

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Nil.

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**Conflicts of interest**

There are no conflicts of interest.

**What is new?**

- Skin malignancy should be carefully excluded, particularly in high-risk patients, even in countries where skin malignancy is rare, e.g., Egypt
- Immunohistochemical staining is a valuable tool to confirm the diagnosis of desmoplastic malignant melanoma.

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