Hemosiderotic Dermatofibroma in a Filipino Male

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ABSTRACT

Dermatofibroma (DF) is a common, benign fibrohistiocytic tumor with unknown pathogenesis. There are multiple uncommon histologic variants of DF reported in literature, one of which is hemosiderotic DF. It can variably present as a pigmented papule or nodule commonly located on the lower extremities. Hemosiderotic DF remains to be underreported in the Philippines despite the widely available dermatopathology services in the country.

Keywords: dermatofibroma, hemosiderotic, fibrohistiocytic tumors

INTRODUCTION

Dermatofibroma (DF), also called benign fibrous histiocytoma, is a common, benign fibrohistiocytic tumor with unknown pathogenesis although it sometimes occurs at sites of trauma such as insect bites. It commonly presents on the legs, arms, and trunk in young to middle-aged adults especially women.[1] There are multiple histologic variants of DF reported in literature. One atypical and rare variant is hemosiderotic fibrous histiocytoma, also known as hemosiderotic DF.[2] We report a case of hemosiderotic DF in a young Filipino male along with its distinct histopathological findings.

CASE REPORT

A 25-year-old Filipino male from the southern province of Luzon Island, Philippines presented with a one-year history of a slowly enlarging darkly pigmented papule on his left knee which he initially thought of as a form of skin cancer. He denied local trauma at the site of the lesion nor any insect bite prior to its onset. His review of systems was unremarkable. Past medical history revealed chronic hepatitis B infection with low infectivity. There were no other family members affected by similar lesion. Focused dermatologic examination revealed a nonulcerated, solitary, dome-shaped, violaceous papule measuring 0.6 x 0.6 x 0.3 cm on the lateral aspect of the right knee (Figure 1).

There was no fluctuance, surrounding erythema, or tenderness on palpation. Other areas of the body such as the face, trunk, upper extremities, palms, and soles were uninvolved. The primary working impression then was dermatofibroma, rule out blue nevus and melanoma. Excision biopsy of the lesion under local anesthesia was done on outpatient basis with no recurrence after a one-year follow-up.

Histopathology revealed a relatively well-circumscribed dermal proliferation of spindle cells arranged in a storiform and haphazard pattern consisting of fibroblasts and histiocytes

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with peripheral collagen trapping (Figure 2A). Scattered Touton giant cells with siderophages and small lakes of erythrocytes (Figure 2B, 2C) were also noted confirming the diagnosis of hemosiderotic DF. There is overlying compact orthokeratosis, irregular epidermal hyperplasia with basal cell layer hyperpigmentation (Figure 2A).

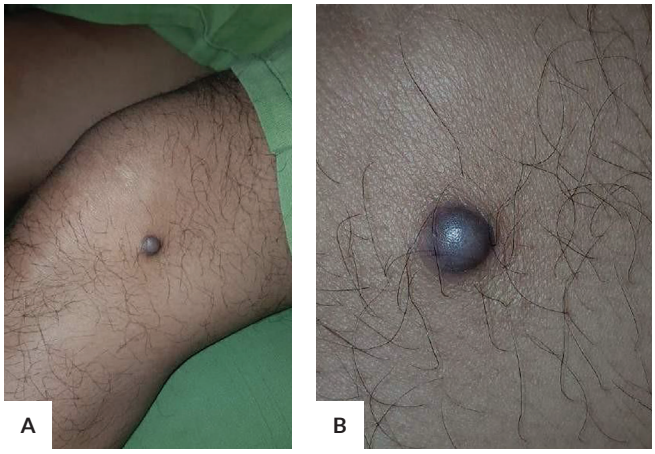

Figure 1. (A) Solitary, well-defined, dome-shaped, violaceous papule on the left knee. **(B)** Close-up view of the lesion.

DISCUSSION

A relatively uncommon mesenchymal tumor, hemosiderotic DF comprises less than six percent of all dermatofibromas.[2] Several other rare variants include cellular, epithelioid, aneurysmal, atypical, angiomatous, and plexiform fibrous histiocytoma.[3] Identifying these different variants of DF is crucial because some may mimic malignant neoplasms such as aneurysmal DF which can be confused histologically with Kaposi sarcoma and cellular DF with dermatofibrosarcoma protuberans (DFSP) and cutaneous leiomyosarcoma. The latter variant along with atypical fibrous histiocytoma, although rare, are capable of metastases.[1-3] Recognition of the variant can ultimately guide in the management (i.e., wide versus narrow excision margins or Mohs micrographic surgery) and helps determine prognosis as some variants have high risk for recurrence after surgery especially if the lesion is incompletely excised.[1]

Hemosiderotic DF was first described by Diss in 1938 as a skin tumor that clinically mimicked a malignant melanoma. It is considered by some dermatopathologists as a precursor lesion or a stage in the development of aneurysmal DF,[1-4] which may present as a variably pigmented papule or nodule, commonly found on the lower extremities.[3] Although findings are nonspecific, dermoscopy would show a multi-

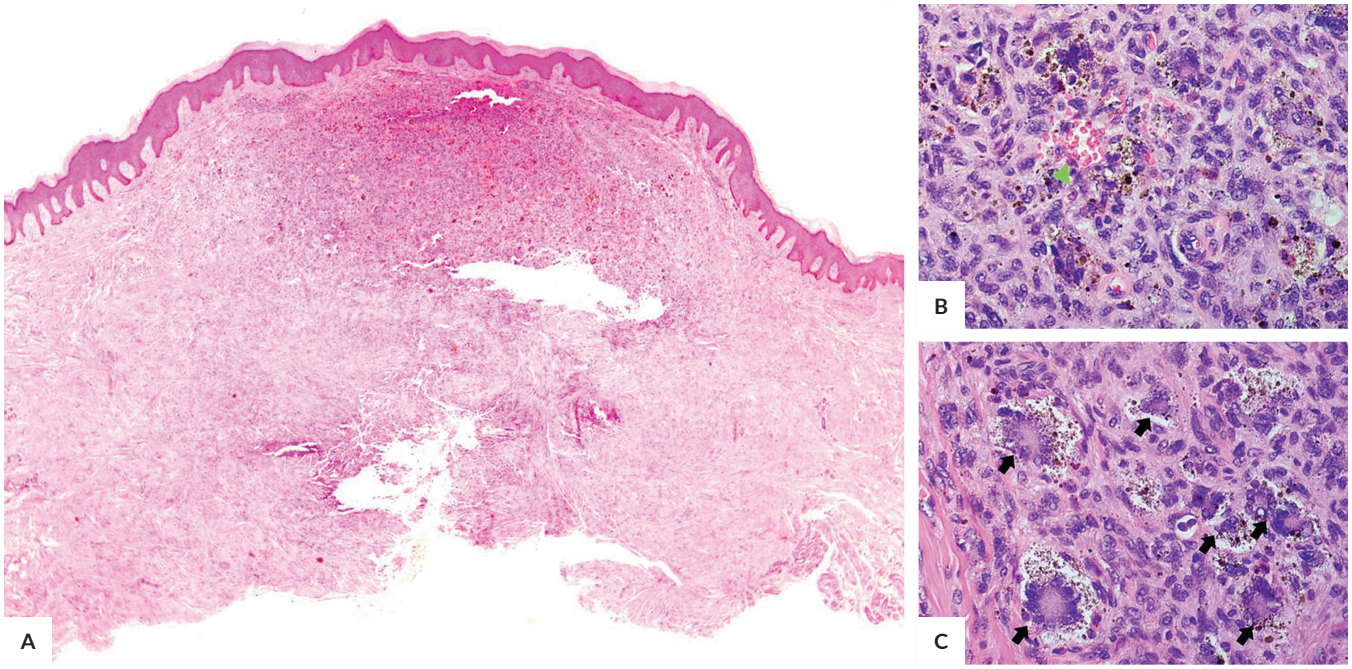

Figure 2. ***Histopathology of the solitary papule.*** **(A)** Section shows a relatively well-circumscribed proliferation in the dermis, with small irregular cleft-like spaces. There is irregular hyperplasia of the overlying epidermis *(H&E, x10)*. **(B)** Close-up view of the cellular proliferation with scattered hemosiderin deposits; a distinct small cystic space with erythrocytes *(green arrowhead)* is seen *(H&E, x40)*. **(C)** Touton giant cells *(black arrows)* are pathognomonic for hemosiderotic dermatofibroma *(H&E, x40)*.

H&E – hematoxylin and eosin. All photographs taken using Olympus BX5110-header microscope (Olympus Corporation, Tokyo) with Olympus DP27 5-megapixel microscope digital camera (Olympus Corporation, Tokyo).

component pattern ranging from a homogenous blue-grey area with or without white structures, pigment network or vascular structures. It can mimic melanocytic neoplasms such as melanoma and blue nevus, and nonmelanocytic lesions such as vascular tumors and tumor of the appendages.[4,5] Hence, histopathologic examination is warranted to confirm the diagnosis.

Histologically, apart from the classic features of a common benign DF, hemosiderotic DF presents with numerous small blood vessels, extravasated red blood cells (RBCs) with hemosiderin deposition due to interstitial hemorrhage.[3] It is also distinguished from other DFs by its depth similar to the aneurysmal variant, with cases involving the subcutis.[2] Peripheral collagen entrapment characteristic of DF is likewise observed.[1]

Due to the benign nature of DF, surgical excision may not be warranted although it is curative. Recurrence of atypical variants such as aneurysmal DFs is relatively common after traditional surgical excision. Successful treatment with Mohs micrographic surgery has been reported.[6]

To date, no local report focusing on the atypical variants of DF, particularly on hemosiderotic or aneurysmal DF, has been published despite the widely available dermatopathology services in the Philippines. A total of 1,554 local cases of DF were recorded from 2012-2022.[7]

Despite a relatively high number of DF cases, the atypical variants remain underreported. As of writing, only two cases of hemosiderotic DF and no cases of aneurysmal DF has been recorded in the Philippines.[7] Clinching the specific histologic diagnosis can be challenging,[3] hence, there is a tendency to lump these variants into just DF or common fibrous histiocytoma. Also, because majority of patients with DF are asymptomatic, most of them never seek consult for their lesions.[8]

CONCLUSION

Hemosiderotic DF is an uncommon variant of DF which can present as a solitary pigmented papule or nodule. Distinct histologic features include presence of numerous small blood vessels and extravasated RBCs with hemosiderin deposition. There is a lack of knowledge as to the prevalence and incidence of dermatofibromas, let alone hemosiderotic DF or any of the atypical variants, in the Philippines.

Statement of Authorship

All authors certified fulfillment of ICMJE authorship criteria.

Author Disclosure

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