

Pigmented Kamino bodies: a little-known histological finding. Prevalence in 19 cases of Reed nevus*

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Abstract: The present study aimed to determine the prevalence of Kamino bodies in Reed nevus, since most studies to date show conflicting data on this issue. This was a retrospective observational study, in which the histopathology of 19 Reed nevus lesions were reviewed. The slides were stained by hematoxylin and eosin and periodic acid-Schiff, with a special focus placed on the identification of Kamino bodies. Some clinical data were also collected. The median patient age was 12 years (range of 2 to 58). The women to men ratio was 5:4. Lesions were located on different parts of the body. Kamino bodies were found in eleven lesions (57.89%). five showed pigmented Kamino bodies (26.31%), four non-pigmented Kamino bodies (21,05%), and 2 (10.52%) had both. Kamino bodies, pigmented or not, are a common histological finding in Reed nevus and may well represent a good marker to differentiate these from malignant melanomas.

Keywords: Histology; Nevus, spindle cell; Nevus, pigmented

INTRODUCTION

The Reed nevus, or pigmented spindle-cell nevus, was first described in 1975, and is a benign melanocytic lesion. Some authors consider it to be a pigmented variation of the Spitz nevus, owing to its histopathological similarity.¹⁻³

Its diagnosis is more common in the third decade of life, and women are more commonly affected. In most cases, this lesion is located in the extremities of the limbs. Clinically speaking, it appears as an intensely pigmented, well-circumscribed, and homogeneous lesion of dark brown or black color, which can present quick growth.^{4,5} Upon performing a dermoscopy of the Reed nevus, three different patterns can be found: stellar explosion, globular explosion, or an atypical pattern.⁶⁻⁸

Histologically, the Reed nevus presents pigmented spindle cell proliferation, arranged in perpendicular and elongated nests, generally limited to the epidermis. Pagetoid dissemination may be present, usually confined to the lower epidermis. One can also find Kamino bodies (KB), which are pinkish, round globules with irregular edges and stained with PAS, also known as eosinophilic globules, generally located above the papillary dermis. These are comprised of basal membrane, especially laminin and collagens IV and VII.^{9,10} KBs were originally described in Spitz nevi; however, there are reports of its presence in other lesions, such as Reed nevus, "spitzoid" tumor, and malignant melanoma (MM).¹¹⁻¹³

Studies show a variable prevalence of KBs in Reed nevus. Witsuba *et al.*, studying 10 cases of Reed nevus, found an 80% prevalence of KBs that were non-pigmented.¹ Later, in studies from Bar *et al.* (15 Reed nevi) and Berlinger Ramos *et al.* (7 Reed nevi), no KB was found.^{14,15} The prevalence of KBs in the Spitz nevus is also variable (16% to 86%); however, they seem to be more common than in the Reed nevus.^{11,14-18}

KBs were first described in MM in 1979, but they tested negative for PAS, which may well indicate that they were not authentic. Later, Arbuckle and Weedon described a prevalence of 12% of KBs in MM, which tested negative for PAS in half of the cases, while in the Spitz nevus, they were positive in 93%. Nonetheless, the images were not published. Moreover, in one quote from Arbuckle, one image shown as a KB may have actually been a dyskeratotic cell in the dermoepidermal junction.^{11,18} Hence, the presence of KBs in MM is uncertain, but they appear to be rare or absent.

The Reed nevus is not rare, it presents clinical and histological characteristics that can mimic MM, and the presence of KBs can aid in differentiating these two lesions characteristics.

The present study evaluates the presence of KBs in the Reed nevus, with a special focus on the identification of its pigmented variation, given that the wide range of studies to date show inconsistent data regarding the prevalence of this histological finding in

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Reed nevus. In this light, we pose the question of whether or not this finding receives little recognition from pathologists.

METHODS

This is a retrospective observational study. We searched, in our data base system, all of the cases with the histological diagnosis of Reed nevus in our hospital between June 2007 and March 2015. We found 19 lesions in 18 patients. All of the lesions had their slides (stained with HE and PAS) histologically reviewed, with a special focus placed on the identification of KBs. The clinical data from each case were also reviewed, including the age at the moment of diagnosis, the location of the lesions, and the first diagnostic hypothesis. In two cases an immunohistochemical study was available, using a monoclonal antibody against collagen IV, melan A, HMB-45, and cytokeratins AE-1 and AE-3.

The data were stored, organized, and tabulated in Excel and

were submitted to a descriptive analysis, in which only the frequency distribution was used.

RESULTS

Of the evaluated patients, 10 were women and eight were men, with a woman to man ratio of 5:4. One patient (#2) had two lesions at different moments. The median age upon diagnosis was of 12 years (2 to 58 years).

The lesions were located in different parts of the body, including the head (n = 1), trunk (n = 5), upper limbs (n = 8), and lower limbs (n = 5). Reed nevus was considered as the first diagnosis for 12 lesions (63.15%), and MM was considered as a possible diagnosis for eight lesions (42.1%). For two lesions, we were unable to find the initial diagnostic hypotheses. The clinical findings are summarized in table 1. Some clinical photos and dermatoscopies are shown in Figures 1 and 2.

TABLE 1: Clinical findings

Patient	Sex	Age	Location	Initial Diagnosis
Patient #1	M	12	Trunk	Reed nevus
Patient #2	F	15	Trunk	Reed nevus
	F	18	Trunk	Reed nevus
Patient #3	M	27	Upper limb	-
Patient #4	F	17	Upper limb	Reed nevus vs melanoma
Patient #5	M	19	Upper limb	Spitz nevus vs Reed nevus
Patient #6	F	6	Upper limb	Reed nevus
Patient #7	F	5	Lower limb	Melanoma vs nevus
Patient #8	F	10	Face	Reed nevus vs Melanocytic nevus
Patient #9	M	2	Upper limb	Reed nevus
Patient #10	F	29	Trunk	Melanocytic nevus vs melanoma
Patient #11	M	43	Upper limb	Blue nevus
Patient #12	F	36	Lower limb	Melanoma
Patient #13	M	6	Upper limb	Reed nevus vs melanoma vs atypical nevus
Patient #14	M	9	Trunk	-
Patient #15	M	8	Lower limb	Reed nevus
Patient #16	F	58	Upper limb	Reed nevus vs melanoma
Patient #17	F	5	Lower limb	Reed nevus vs melanoma
Patient #18	F	8	Lower limb	Melanocytic nevus vs melanoma



FIGURE 1: Reed's Nevus, clinical photos

TABLE 2: Kamino bodies

Patient	Non-pigmented KB	Pigmented KB
Patient #1	absent	present
Patient #2	absent	present
Patient #3	absent	absent
Patient #4	absent	absent
Patient #5	present	present
Patient #6	absent	absent
Patient #7	absent	absent
Patient #8	present	absent
Patient #9	absent	present
Patient #10	present	absent
Patient #11	present	present
Patient #12	present	absent
Patient #13	absent	present
Patient #14	absent	absent
Patient #15	absent	present
Patient #16	absent	absent
Patient #17	absent	absent
Patient #18	present	absent

KBs were found in 11 of the evaluated lesions (57.89%); five contained only pigmented KBs, four contained only non-pigmented KBs, and two contained both pigmented and non-pigmented KBs (Table 2). Some images of the histology are shown in Figure 3.

DISCUSSION

In the present study, the prevalence was discretely greater in women (woman to man ratio of 5:4). The main location of the lesions was the limbs (68.48%), especially the upper limbs (42.1%). The lesions were more frequent in young adults and children, with a median age of 12 years. Only three patients were over 30 years of age. The epidemiological data are similar to those found in the literature, except for the age, given that the literature shows that the lesions are more common in the third decade of life.⁴

The Reed nevus can grow quickly and sometimes be confused with MM.⁴ In our study, the MM was considered as the initial

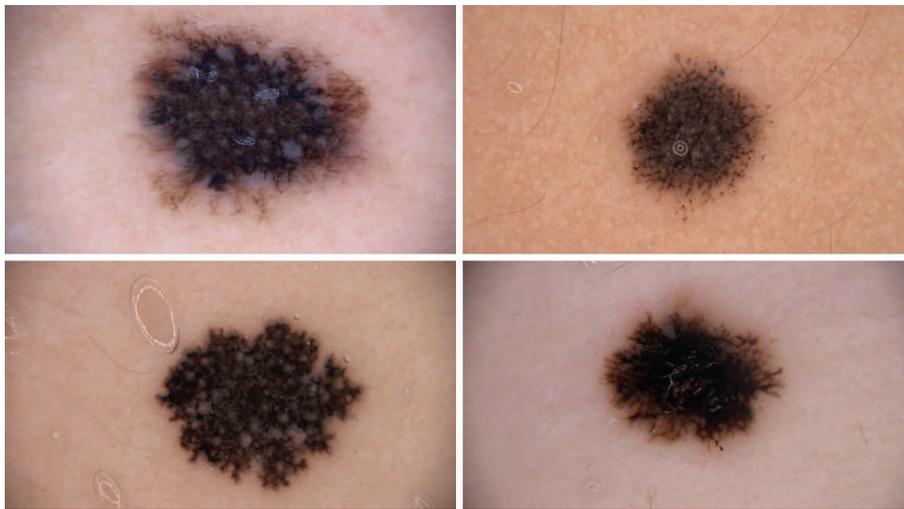


FIGURE 2: Reed nevus — dermatoscopic photos

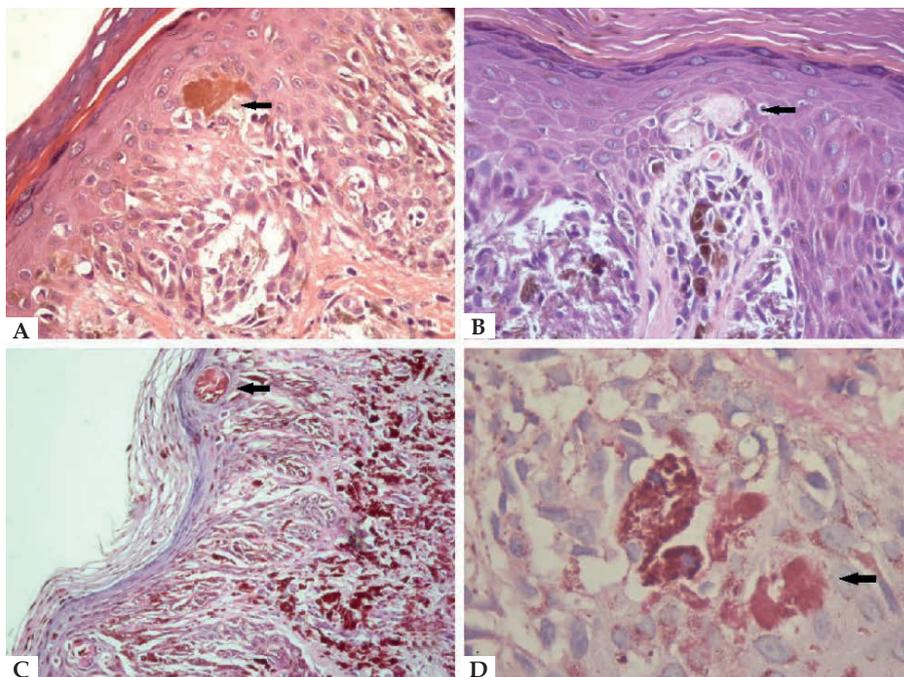


FIGURE 3: A: pigmented KB (Hematoxylin & eosin, 400x); B: lightly pigmented KB (Hematoxylin & eosin, 400x); C: pigmented KB (PAS, 200x); D: pigmented KB (PAS, 1.000x)

diagnostic hypothesis in eight cases (42.1%), showing that it is an important differential diagnosis of this lesion.

In the histological review, KBs were found in 11 lesions. In the literature, the prevalence of these structures in the Reed nevus varies from zero to 80%. The presence of pigmented KB was referred by Weedon; however, studies showing its prevalence were

never conducted.¹⁹ Pigmented KBs were found in five lesions. These structures can be difficult to find if the pathologists does not actively search for them.

In this light, we conclude that KBs, pigmented or non-pigmented, are a common histological finding in both the Reed nevus and the Spitz nevus, and can be a good marker to aid in their differentiation from MM. □

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