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Case Report

Brown lines on nails as melanonychia striata: a case report and review

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ABSTRACT

Melanonychia striata is caused by the deposition of melanin as a result of melanocyte hyperplasia or increased melanocyte activity. Melanonychia striata has a similar appearance to a malignant lesion, so a proper diagnosis should be made to ensure appropriate management. A 28-year-old man had complained of black discoloration in the middle of the right toenail since a month ago. Previously, the patient frequently experience pain in the nail and redness at the nail tip. The patient had often worn small-size shoes. Physical examination revealed a line of blackish-brown lesions from the proximal to the distal nail plate, with clear boundaries, yellowish on the distal of the nail, and a sign of subsided inflammation on the edges of the nail. Nail extraction with roserplasty-technique and biopsy was conducted. The histopathological result supported the diagnosis of melanonychia striata. Then, the patient was treated with oral analgesic and antibiotic and discharged with no complications. This melanonychia striata case is accompanied by rapid progression and is most likely due to the proliferation of melanocyte cells. The surgical procedure with a partial or total nail extraction should be considered performed to treat the lesion and collect the sample for further examination. Histological examination is a gold standard to differentiate benign and malignant subungual lesions. Periodic follow-up is also necessary to assess the recurrence and general condition of the patient.

Keywords: Melanonychia striata, Diagnosis, Management, Roserplasty

INTRODUCTION

Melanonychia striata is characterized by a longitudinal, brownish, or black line on the nail plate that extends from the proximal to the distal nail fold. This situation is caused by the disposition of melanin due to increased activity of melanocytes or melanocytic hyperplasia. Types of hyperplasia can be divided into benign and malignant types.[1-3]

The prevalence of melanonychia striata varies by region because this pathology is also influenced by race. In a study in China, the prevalence was found to be 0.8%. The prevalence for men is not different from that for women.[1] The prevalence in blacks is generally higher but tends to be physiological or benign, whereas in whites it is more often malignant. Nearly 100% of black people have 1 or more pigmented bands by the age of 50 years.[4] Another review of the literature has found a prevalence of between 11.4% and 23%. The largest population is in the age range of 21-26 years.[5]

Diagnosis of the disease includes clinical and supporting. Clinical examination is important to direct the type of malignant or benign.[4] Onychoscopy is also important to confirm clinical findings.[6] In lesions with suspicion of malignancy, a biopsy is necessary, which is the gold standard histopathological diagnosis for confirmation of melanoma.[4]

Treatment of melanonychia striata based on the underlying cause. Treatment of systemic or locoregional disease, discontinuation of drug, avoidance of trauma, treatment of infection, and correction of nutritional deficiencies may result in reduced pigmentation. Benign conditions do not

require treatment and can only be observed. Likewise, the prognosis varies according to the underlying cause.[4,5]

Based on this background, melanonychia striae is a pathology with a high prevalence. Distinguishing between benign and malignant lesions is a very important clinical skill because it will lead to the type of treatment to be carried out. Therefore, this case report will discuss melanonychia.

CASE REPORT

A 28-year-old man came with complaints of blackish toenail on his right big toe. The patient complained of black discoloration of the right thumb nail since about a month before. Black color right in the middle of the nail. Initially appears at the tip then extends to the base. Before this black color appears, patients often feel pain in the area around the nails and sometimes redness, especially at the edges. Patients often use shoes that are rather narrow. In addition, the tips of the nails are also yellowish. The patient had no previous medical history. Black spots on other bodies are also denied. The patient also had no history of previous routine medication. In family history, no family has a history of the same disease or a history of skin cancer.

Physical examination showed vital signs and generalized examination within normal limits. On the right big toenail, a blackish brown lesion appears, in the form of a line from the proximal to the distal nail bed, with firm boundaries, on the distal part of the nail it is yellowish, and on the edge of the nail there are signs of inflammation that have subsided (Figure 1). Discoloration of the skin around and on the nails of the other toes and hands is denied.

Initially the patient was diagnosed with a suspected subungual melanoma with a differential diagnosis of melanonychia striata and subungual nevus and paronychia. Afterwards, nail extraction was performed under local anesthesia followed by roserplasty (Figure 2). The biopsy results showed melanonychia striata. After the procedure, the patient was given oral medication paracetamol 650 mg four times daily and cefixime 200 mg twice daily. Follow-up results after nail extraction and roserplasty showed good results (Figure 3).

Figure 1: Clinical picture.

Figure 2: Nail extraction and roserplasty.

Figure 3: Follow up after nail extraction and roserplasty.

DISCUSSION

In this case, there is a longitudinal black striae in the middle of the first toenail of the right foot. Initially arising at the base then extends to the tip. Some of the causes of melanochia striata include black race, pregnancy, chronic local trauma, infection, drugs, dermatological disorders, endocrine disorders, alkaptonuria, hemochromatosis, porphyria, graft vs. host disease, Peutz-Jeghers syndrome, and Laugier syndrome. Some conditions of melanonychia striata associated with melanocytic hyperplasia are melanocytic nail matrix nevus, nail lentigo and nail/subungual in situ melanoma, and invasive melanoma.[1-3] In this case, based on the history there is a possibility that the melanochia arises in association with melanoma because of its rapid development. However, infection can also be a cause because the area around the stria appears signs of infection or due to a nevus because epidemiologically the most common cause is a nevus.[7]

The diagnosis of this disease is the same as other diseases, namely from the history, physical examination and support. A detailed anamnesis includes the patient's age, history of trauma/trigger factors, exposure to exogenous substances, work history, medical history, medical history and family history.[4] Meanwhile, important physical examination includes the number and location of nails involved (single/multiple), morphology, the location of melanonychia on the nail plate (above, inside or below). The pattern of melanonychia includes complete, longitudinal, or transverse melanonychia.[4] This case

includes longitudinal striae. On physical examination it is also important to look for the ABCDE rule to direct the possibility of malignancy. In this case, what is perhaps most significant is the change and involved digits, where changes are rapid and the striae on the thumb have a higher risk than the other fingers.[4,8]

The treatment in this case was by extracting the nails from the striae, then roserplasty was performed. In theory, the treatment of melanonychia striata based on the underlying cause. Benign conditions do not require treatment and only require follow-up. Specifically for melanoma, depending on the thickness and histopathological characteristics, subungual melanoma can be managed with functional surgical treatment (wide local excision) or finger amputation with or without sentinel lymph node biopsy.[4,5,9]

The prognosis of melanonichia based on the etiology and the benign or malignant nature of the disease. Benign lesions have a good prognosis even without surgery while melanoma has a poor prognosis. Melanoma of the nail usually has a poorer prognosis compared to melanoma of the skin because of the delay in diagnosis with an average delay of about 2 years.[10,11] In this case report, the outcome of the disease was good.

CONCLUSION

Melanonychia striata is accompanied by rapid progression and is most likely due to the proliferation of melanocyte cells. The surgical procedure with a partial or total nail extraction should be considered performed to treat the lesion and collect the sample for further examination. Histological examination is a gold standard to differentiate benign and malignant subungual lesions. Periodic follow-up is also necessary to assess the recurrence and general condition of the patient.

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