Symbiosis

ISSN Online: 2378-1726
www.symbiosisonlinepublishing.com

Case Report | Clinical Research in Dermatology: Open Access | Open Access

Nails Involvement in Winiwarter-Buerger Disease

Starace M[1], Alessandrini A[*1], Tosti A[2], Piraccini BM[1]

[1]Dermatology- IRCCS, Policlinico Sant'Orsola, Department of Specialized, Experimental and Diagnostic Medicine, Alma Mater Studiorum, University of Bologna, Bologna, Italy.

[2]Fredric Brandt Endowed Professor of Dermatology, Dr. Phillip Frost Department of Dermatology and Cutaneous Surgery, University of Miami, Miller School of Medicine, Miami, FL, USA.

Received: April 21, 2021; Accepted: April 28, 2021; Published: May 04, 2021

***Corresponding author:** Aurora Alessandrini, MD, Dermatology- IRCCS, Policlinico Sant'Orsola, Department of Specialized, Experimental and Diagnostic Medicine, Alma Mater Studiorum, University of Bologna, Bologna, Italy, E-mail: aurora.alessandrini3@unibo.it*

Abstract

Buerger disease, or thromboangioiitis obliterans, is an inflammatory and occlusive process involving small and medium size arteries and veins, which generally affects the lower limbs of young adult male with the habit of smoking.

Signs and symptoms are secondary to the inflammatory process and arterial occlusion which result in severe ischemia. Involvement of nails is not common but we found different clinical features which have not been previously reported in the Burger's disease literature.

Keywords: Winiwarter-Buerger Disease; Nail; Paronychia; Leukonychia; Erosion Nail Bed; Vascular Damage; Smoke.

Introduction

Buerger disease is an inflammatory and occlusive process involving small and medium size arteries and veins, which generally affects the lower limbs of young adult male with the habit of smoking. Also called thromboangioiitis obliterans, this non-atherosclerotic, segmental, inflammatory and occlusive process often results in severe disability and digital amputation [1]. Involvement of nails is not common as the first clinical sign and its differentiation from other causes of nail lesions is difficult. This paper reports two patient who developed nail lesions as the first sign of Bueger disease

Case report 1

A 46 years old Caucasian man was referred to our Department with a suspicion of onychomycosis involving the second and third fingernail. Clinical examination [Figure. 1A] revealed a paronychia in both fingers and a proximal leukonychia and hemorrhagic lesion at the fingertip of the third finger. The affected fingers were cold to the touch. The history revealed that the nail lesions had been present for 6 months and were associated with paresthesia and pain and the touch are cold. The patient also developed tender to smoke 20 cigarettes a day for many years and suffered from several episodes of left ilium pain while walking. Radiological examination of his right hand was normal. Vascular examination showed bilateral anterior and posterior tibial pulses and the left popliteal pulse was not palpable. A vascular murmur was present in superficial and common femoral arteries. Laboratory analysis demonstrated an increased VES and fibrinogen. Arterial Dopplers of his right upper limb showed a decreased flow in the arterial palmar arch, and a very decreased flow in the first, third and fourth interdigital arteries, as well as an absent flow in the second interdigital artery. All digital arteries showed absent flow.

Figure 1(A): The affected nails at the first clinical examination, showing chronic paronychia in both fingers, proximal leukonychia and a hemorrhagic lesion at the fingertip of the third finger (the hole in the third nail finger is artificially made).
(B) The affected nails at the second clinical examination 2 months later, showing onychomadesis and nail bed ulceration.

The patient was finally transferred to the Angiology Department with the diagnosis of Buerger disease in accord to Shionoya's criteria [2]. Treatment with Prostavasin (60mcg a day) for 11 days and Endoprost (0.05 mg a day) for 4 days did not produce significant improvement of pain and symptoms. Examination after 2 months [Figure 1B] revealed onychomadesis and nail bed ulceration. The patient reduced, but did not stop smoking.

Case report 2

A 65 years old Caucasian man was referred to our Department with a suspicion of malignant nail tumor involving the third fingernail. Clinical examination [Figure. 2]revealed onycholysis with erosion of the nail bed, presence of purulent exudate, with marked chronic paronychia in this fingernail, with a similar process also in the second fingernail, which presented onycholysis and exudation. Touching them, the fingers were cold. He declared that the lesion was present in the last 10 months. Medical history also confirms that the patient had been a smoker for many years. Radiological examination was normal. Vascular examination with Dopplers and angiography confirmed our suspicion of Buerger disease. He moved to another city, so unfortunately, we don't have data about the follow-up.

Figure 2: A 65 years old Caucasian man with onycholysis, erosion of the nail bed, presence of purulent exudate and marked chronic paronychia of the third fingernail

Discussion

Thromboangioiitis obliterans is an uncommon, but not extremely rare vasculitis, which occurs more often in Asian countries and in young adult men smokers [3].

Its specific etiology remains obscure, but there are secondary etiologic factors which predisposes to the disease, one such as young age, male sex, oriental race, hereditary factors [4], autoimmune process [5], muscular occupation, changes in blood, drugs and poisons [6-8] and especially smoking. Burger's disease has rarely been reported in non-smokers and frequently improve associated factor. Perhaps a genetically controlled hypersensitivity to tobacco, due to a particular HLA phenotype, along with an impairment of sympathoadrenal function and an altered peripheral adrenergic response to cigarette smoking [9] are the trigger elements of this disease. This is then accelerated by various internal and external factors.

Signs and symptoms are secondary to the inflammatory process and arterial occlusion which result in severe ischemia. While the most frequent [10-12] are present in the lower extremely and visceral, our report underscores the importance of clinical manifestations in the nail [13-15]. We found two clinical signs, chronic paronychia and proximal leukonychia, which have not been previously reported in the Burger's disease literature. Commonly, in the first stage of the disease severe ischemia causes delay in nail growth and a distortion of the nail plate, which becomes thick, rough and transversally or longitudinally ridged. Darkening of the nail plate hides the nail bed, which characteristically presents as splinter hemorrhages. This abnormal nail growth may lead to claw nails (onychogryphosis), but an improvement of blood supply would allow the nail to return to normal. As the process advances, nail plates may show Beau's lines, shedding, loosening and permanent distortion [8]. When healing takes place, the nail usually remains distorted or may be completely lost and replaced by scar tissue [16]

In our cases, the first signs of thromboangioiitis obliterans appeared at fingernails, with chronic paronychia and leukonychia in the first case, onycholysis and nail bed erosion in the second one. In our opinion, chronic paronychia and erosion could be a consequence of digital ischemia and inflammation producing trophic lesion in periungual tissues and nail bed and leukonychia could be consequence of abnormalities in keratinization due to nail matrix damage.

We would like to stress the nails should he examined in patients affected by vascular disease, because their changes may represent the first sign of blond supply impairment.

Dermatologist can make an early diagnosis, increasing the success of pharmacologic treatment and endovascular revascularization, reducing the risk of minor and major amputation [17,18]

In particular, the association between chronic paronychia, leukonychia, nail bed erosion and cold fingers should but the physician to the possibility of a peripheral vascular disease learning further studies [19,20]

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