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Diagnostic Imaging

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“Ruin appearance” in nail free margin dermoscopy - a diagnostic clue for onychomycosis

“Aspecto em ruína” na dermatoscopia da borda livre ungueal - uma pista diagnóstica para onicomicose

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ABSTRACT

Onychomycosis is the nail disease responsible for 50% of onychopathies. The most common clinical form is distal and lateral onychomycosis. The dermoscopic finding of subungual hyperkeratosis in “ruin appearance” in the nail free margin is a relevant diagnostic clue and, when present, suggests the diagnosis of onychomycosis.

Keywords: Dermoscopy; Nail diseases; Onychomycosis

RESUMO

A onicomicose é a doença ungueal responsável por 50% das onicopatias. A forma clínica mais comum é a onicomicose distal e lateral. O achado dermatoscópico de hiperqueratose subungueal em “ruína” na borda livre ungueal é pista diagnóstica relevante e, quando presente, sugere o diagnóstico de onicomicose.

Palavras-Chave: Dermoscopia; Doenças da unha; Onicomicose

Nail dermoscopy or onychoscopy is a fundamental tool for better visualization of clinical findings and may be a key to the diagnosis of some nail pathologies. Nail free margin dermoscopy is complementary to plate examination, providing information on nail thickness, presence and pattern of subungual hyperkeratosis, and characteristic findings of nail pathologies.

Onychomycosis is the prevalent nail disease, and it is responsible for approximately 50% of onychopathies.¹ The similarity between some onychopathies tends to make it challenging to obtain a definitive clinical diagnosis. Direct mycological examinations and fungal culture or nail plate biopsy (periodic Schiff staining [PAS] staining) should confirm the diagnosis. However, these tests may show false-negative results in more than 35% of cases.¹ The most common clinical form is distal and lateral onychomycosis, representing over 85% of cases.² In this clinical form, the fungal invasion occurs from the infected skin, passing through the hyponychium or lateral fold, reaching the nail bed and, finally, the ventral surface of the nail plate. As a consequence, subungual hyperkeratosis and onycholysis occur. When examining the free margins with the dermoscope, keratotic debris creates a unique appearance under the free edge of the nail that De Crignis *et al.* called a “ruin appearance” (Figure

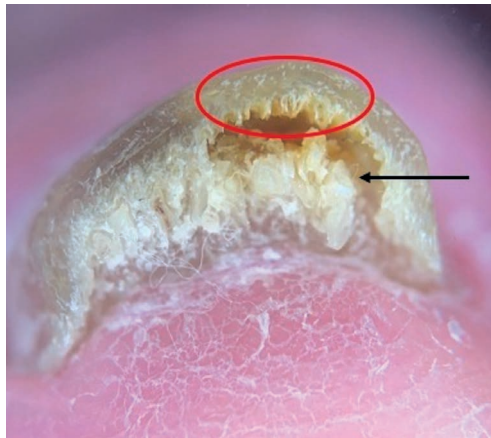


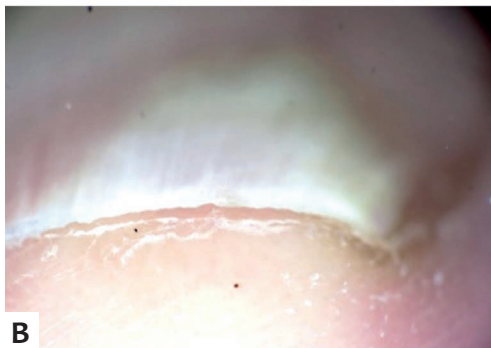
FIGURE 1: Nail free margin dermoscopy of onychomycosis. Arrow: "ruin appearance" of subungual keratosis. Circle: irregular indented shape of the ventral region of the nail plate (x10)



FIGURE 3: Dermoscopy of the onychomycosis plate: onycholysis proximal edge "jagged" and "indented" (dotted); longitudinal striations (arrow) and visualization of the "ruin appearance" of subungual keratosis (circle) (x10)



A



B

FIGURE 2: Comparison between nail free margin dermoscopy of onychomycosis (A) and traumatic onycholysis (B) (x10)

1).³ The formation of this type of subungual hyperkeratosis is due to the exacerbation of the irregular indented shape of the ventral region of the nail plate (Figure 1) associated with the accumulation of debris resulting from fungal invasion. This finding can also be observed in total dystrophic onychomycosis. The absence of the "ruin appearance" in dermoscopy, common in traumatic onycholysis (Figure 2), does not necessarily exclude the diagnosis of onychomycosis. However, its presence strongly indicates the diagnosis, mainly when associated with dermoscopic findings in the nail plate (Figure 3).² For definitive diagnosis, direct mycological examinations, nail plate culture or histology (nail clipping) should be performed.¹ Nail free margin dermoscopy is a noninvasive exam that should be routinely used to assess suspected cases of onychomycosis. The dermoscopic finding of subungual hyperkeratosis showing a "ruin" pattern is a relevant detection and, when present, suggests the diagnosis of onychomycosis.●

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