Photo-onycholysis Following Two Weeks of Doxycycline

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ABSTRACT

Photo-onycholysis is a form of phototoxic reaction characterized by spontaneous separation of the nail plate from the nail bed. It usually follows drug intake and tetracycline is a well-known culprit. We present a case of 19 years gentleman who developed this rare side effect following two weeks of ingestion of doxycycline.

Keywords: Doxycycline; photo-onycholysis; tetracycline.

INTRODUCTION

Onycholysis refers to a phenomenon of spontaneous separation of the nail plate form the nail bed, usually beginning at the distal end and progressing proximally.[1] Less often it starts proximally or at the lateral nail folds. The causes of this disorder may be classified as primary (idiopathic) or secondary. Secondary onycholysis may result following trauma(physical or chemical), infections (bacterial, viral, fungal), psoriasis, lichen planus, eczema, atopic dermatitis, drugs and systemic causes as thyroid disorders, pregnancy, pellagra, porphyria and syphilis.[2]

Photo-onycholysis - a form of phototoxic reaction - usually occurs in the background of any photosensitive disorder or following the use of a photosensitizing agent.[3] Spontaneous photo-onycholysis is very rare. Tetracycline, psoaralen and fluoroquinolone are the usual implicated agents.

CASE REPORT

A 19 years man was prescribed oral doxycycline at a dose of 100 mg daily along with topical clindamycin for grade III acne vulgaris. After two weeks of treatment he returned with a complaint of painful splitting of all his hand nails at its free margin. However his toe nails were normal. Patient initially developed pain at the tips of fingers of hands at the junction of nail plate and nail bed after 10 days of start of therapy. There was no discharge, bleeding or alteration in color of the nail. The patient had no other difficulties. He had no history of any photosensitive events or other dermatological disease in the past. The patient had significant history

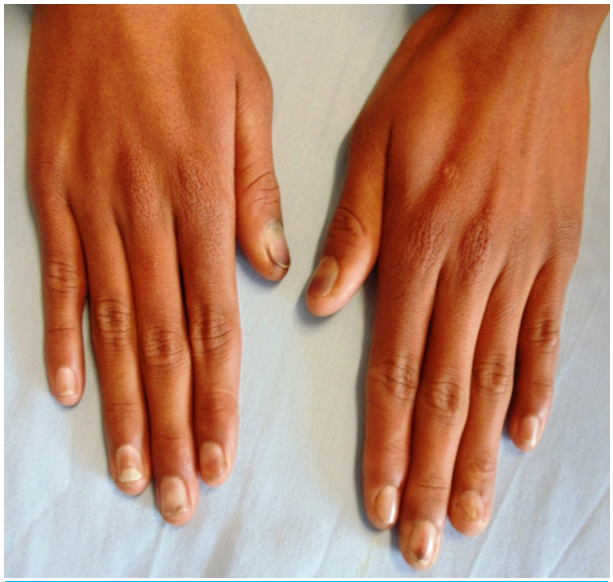

Figure 1. Photo-onycholysis following two weeks of start of doxycycline.

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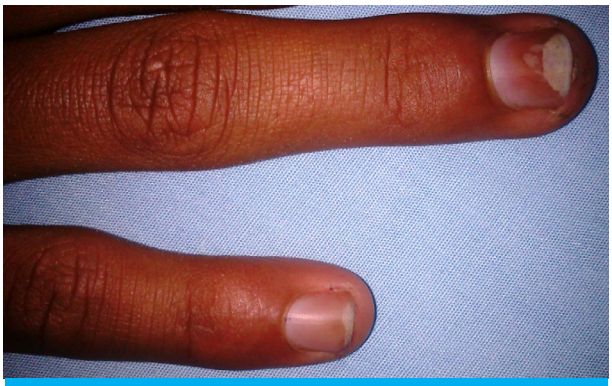

Figure 2. Photo-onycholysis involving the distal one third of nail plate (grade II onycholysis).

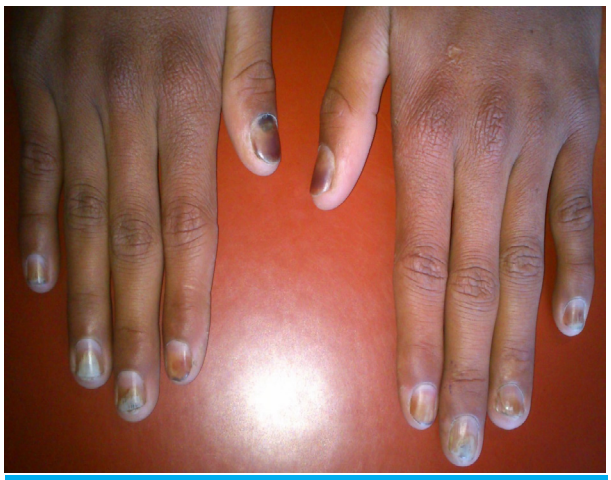

Figure 3. Stationary photo-onycholysis and pigmentation at 2 weeks follow up.

of exposure to sunlight as he was playing in a football tournament.

Examination revealed separation of his distal nail plate with an evidence of whitish crescent in the distal nail plate (Figure 1). There was separation of the distal one third of the nail plate – Grade II onycholysis (Figure 2). The nails were tender to touch. There were no other nail findings. Dermoscopic examination of the nail folds and nail bed was normal. He had no evidence of any other cutaneous disease. Potassium hydroxide mount of his nail clippings were negative for fungal elements. Serum tested for anti-nuclear antibody was within normal limit. Doxycycline was stopped and patient was managed with pain killers and topical clindamycin for acne. Patient followed up at 2 weeks with slowdown of nail separation, marked improvement in pain and development of hyperpigmentation at the nail bed(Figure 3).

DISCUSSION

Photo-onycholysis has been reported frequently following the use of tetracycline. Psoralen and quinolones are the other common offenders. However it may occur following the use of retinoids, cancer chemotherapy, acriflavine, non-steroidal anti-inflammatory drugs, captopril, chlorpromazine, quinine, oral contraceptives, antipsychotics, 5-fluorouracil and thiazides.[3-5]The major trigger here is ultraviolet B and less possibly also by ultraviolet A.

The exact prevalence of drug induced photo-onycholysis is not known. The disease affects almost all nails after exposure to intense sunlight. The disorder may be a part of Segal's triad characterized by photosensitivity, discolouration of nails and onycholysis.[3] However it can occur without the absence of photosensitivity. In some cases sparing of the thumb has been reported.[6] The authors had also hypothesized that absence of melanin, sebum and stratum granulosum provide inadequate protection against ultraviolet irradiation. The lateral margins of the nails are never involved in drug induced photo-onycholysis.[7] Also the nails are tender and painful in tetracycline or psoralen-induced photo-onycholysis.

Onycholysis may be clinically graded according to the following system.[1]

Stage I – early, initial separation of 1-2 mm of the distal nail plate from the hyponychium.

Stage II – separation of the distal one-third of the nail plate.

Stage III – separation of one to two-thirds of the nail plate.

Stage IV – onycholysis extending from the proximal nail fold(onychomadesis) to the distal end of the nail.

Stage V – disappearing nail bed

The incidence of phototoxic cutaneous manifestation following doxycycline occurs in <5% of cases. Much of it appears to be dose related and occurs predominantly in skin types I and II.[8] The time between the onset of photo-onycholysis and an exaggerated phototoxic reaction usually varies from 3 to 6 weeks.[3]Similarly, photo-onycholysis after near 3 weeks of start of doxycycline has also been reported.[9] Hence we intended to report a case of onychodynia at 10 days followed by photo-onycholysis at 14 days of start of low dose (100mg) doxycycline.

The management remains to be supportive. Spontaneous

recovery ensues following withdraw of the offending agent.

CONCLUSIONS

Phototoxic reaction including photo-onycholysis is not an uncommon side effect of tetracycline. It was found to appear as soon as 10 days. Hence we should be aware of this possible side effect of doxycycline.

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