Polydactylous Photo-Onycholysis in a Patient of Breast Carcinoma

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Sir,

Photo-onycholysis is the detachment of the nail plate from the nail bed distally upon ultraviolet (UV) light exposure. When drug-induced, it can be an isolated phenomenon or accompanied by a cutaneous phototoxic reaction.

A 36-year-old woman was referred to the dermatology outpatient department with complaints of asymptomatic separation of the nail plate from the nail bed in all 20 nails for the past 2 months. The patient was a known case of triple-positive Estrogen receptor/Progesterone receptor/Human epidermal growth factor receptor 2 (ER/PR/HER-2) ductal carcinoma of the right breast (grade 2), for which she had received neoadjuvant chemotherapy (NACT)—doxorubicin, cyclophosphamide- paclitaxel, trastuzumab, pertuzumab regimen. Doxorubicin 60 mg/m^2, cyclophosphamide 600 mg/m^2 was given every 3 weeks for four cycles, followed by 12 cycles of paclitaxel 80 mg/m^2 weekly, along with trastuzumab and pertuzumab on day 1 of every 21-day cycle until the completion of 1 year followed by total mastectomy with axillary clearance [Figure 1]. She denied a history of intake of other medications. She did not report any sunburn reaction before the onset of the nail disease. A history of repetitive trauma such as manicure, pedicure, and chemical exposures was denied.

The patient had completed 12 cycles of injection paclitaxel 6 weeks ago. Around the same time, she noticed pigmentary changes followed by asymptomatic separation of all finger and toenails at distal end. An examination revealed polydactylous distal onycholysis. The proximal end of separation was half-moon-shaped with concavity paralleling the proximal nail fold [Figure 2]. A diagnosis of photo-onycholysis was ascertained based on the characteristic clinical presentation. The patient had received several chemotherapeutic agents [Figure 1] in the preceding months. Although doxorubicin alone as well as in combination with trastuzumab has been associated with onycholysis, photo-onycholysis is known to occur mainly with taxanes.[1,2] The clinically apparent photo-induced onycholysis led to the identification of paclitaxel as the most likely culprit.[1] Further, an onychoscopic examination revealed the distance from the proximal nail fold to the proximal part of onycholysis to be 5 mm [Figure 3]. As the

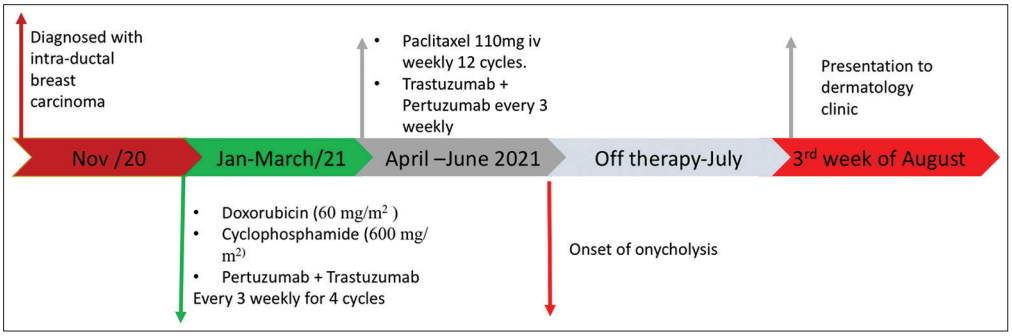

Figure 1: Timeline of the events in the index case

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Figure 2: Polydactylous photo-onycholysis: Well-defined, half-moon-shaped, distally concave proximal nail border at the separating part

normal rate of growth of the fingernail is nearly 3 mm per month, this indicated that the patient had not received the culprit drug in nearly 1.5 months, corroborating the history of cessation of the paclitaxel cycles, 6 weeks before the presentation. The patient was advised regular trimming of the nails, sun protection, and was reassured regarding the spontaneous resolution of onycholysis.

Onycholysis is clinically characterized by the whitish appearance of transparent nail plate due to the reflection of light. The major cause of both fingernail and toenail onycholysis is physical trauma. Other causes include psoriasis, lichen planus, onychomycosis, drug-induced. Photo onycholysis as a toxic or allergic reaction can occur in the presence or absence of a photosensitizer. The predilection of the nail to photodamage could be explained by the shape of the nail (acting as a convex lens), sparse melanin, scanty horny cells, absent stratum granulosum in the nail bed, and absence of the sebaceous gland in the subungual area.[3] Many drugs have been implicated to act as photosensitizers like tetracyclines and their derivatives, psoralens, Non-steroidal anti-inflammatory drugs (NSAIDs), griseofulvin, capecitabine, 5-fluorouracil, and taxanes.[1,3,4]

Photo-onycholysis can be differentiated by its unique character where the proximal border of onycholysis is parallel to the proximal nail fold indicating the exogenous origin of the inciting factor. Onycholysis due to physical trauma starts at the lateral edge from where it extends proximally, mostly secondary to manipulations with irregular proximal borders. Onycholysis in patients with plaque psoriasis is generally associated with other features like pitting, subungual hyperkeratosis, leukonychia, salmon spots, and red lunula. Larger lakes of pus under the nail with larger surface defects called elkonyxis are seen in palmoplantar pustular psoriasis.[5]

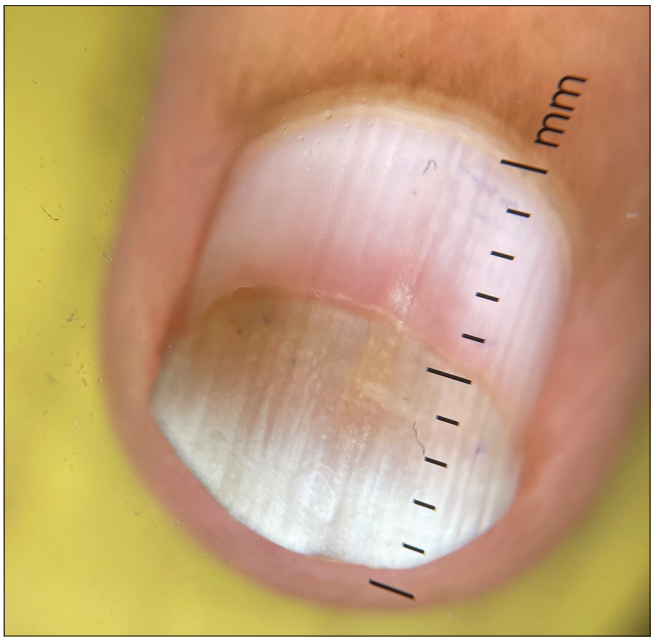

Figure 3: Onychoscopy demonstrating distal onycholysis. The concave proximal border of onycholysis is precisely parallel to the proximal nail fold. The proximal 5 mm of the nail is normal corroborating the history of cessation of paclitaxel 6 weeks prior (DermLite DL4, 10X, polarized)

Photo-onycholysis is reversible on discontinuation of the culprit drug. The nails should be kept short by clipping the detached portions, the nail bed should be maintained dry to prevent microbial colonization. Additionally, photoprotection is essential.

In conclusion, we report a case of photo-onycholysis secondary to paclitaxel chemotherapy, highlighting the importance of clinical examination in the ascertainment of accurate etiology of the nail findings.

Declaration of patient consent

The authors certify that they have obtained all appropriate patient consent forms. In the form, the patient(s) has/have given his/her/their consent for his/her/their images and other clinical information to be reported in the journal. The patients understand that their names and initials will not be published and due efforts will be made to conceal their identity, but anonymity cannot be guaranteed.

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Nil.

Conflicts of interest

There are no conflicts of interest.

References

1. Hussain S, Anderson DN, Salvatti ME, Adamson B, McManus M, Braverman AS. Onycholysis as a complication of systemic chemotherapy: Report of five cases associated with prolonged weekly paclitaxel therapy and review of the literature.

Cancer 2000;88:2367-71.
2. Sonthalia S, Arora R, Abhishek A. Trastuzumab-docetaxel combination chemotherapy induced severe onychopathy. Indian Dermatol Online J 2017;8:222-3.
3. Baran R, Mascaro JM, Aguilera P. Photoonycholysis: New findings. J Eur Acad Dermatol Venereol 2019;33:56-62.
4. Bishnoi A, Vinay K. Butterfly rash, dental staining and painful nails in a child. Indian J Med Res 2019;150:103-4.
5. Perera E, Sinclair R. Diagnosis using the nail bed and hyponychium. Dermatol Clin 2015;33:257-63.