

## Blue Lunula Due to a Combination Chemotherapy Not Reported Before

A dermatology consultation was sought for a 32-year-old lady admitted to the medical oncology ward. She was a known case of acute myeloid leukemia (AML) on chemotherapy.

The cutaneous examination revealed blue pigmentation of the lunulae of all her fingernails, bilateral great toenails, and two adjacent toenails [Figures 1 and 2]. The oral cavity and other mucosae were within normal limits. The present nail changes occurred around 20 days ago, 10 days after she underwent bone marrow transplantation. These nail changes had been appearing 10 to 15 days after each chemotherapy cycle and would resolve partially until the next chemotherapy cycle [Figure 3a and 3b]. She had received five such cycles, comprising fludarabine, cytarabine, granulocyte colony-stimulating factor, idarubicin (FLAG IDA) regimen and azacytidine plus sorafenib.

Blue lunula can be caused by multiple chemotherapeutic drugs including hydroxyurea,<sup>[1,2]</sup> docetaxel, and combination chemotherapy (cyclophosphamide, vincristine, doxorubicin; 5-fluorouracil, doxorubicin, cyclophosphamide; vinblastine, dactinomycin, bleomycin).<sup>[3]</sup> The drugs implicated in our case have not been reported before. It is, however, difficult to ascribe it to a particular drug(s) in our patient. The mechanism by which this pigmentation occurs is not very clear; it is, however, postulated to be due to the toxic effect on the distal nail matrix basal cells or the pigment deposition in the nail matrix, or due to focal stimulation of melanocytes to produce melanin.<sup>[2,4]</sup> Apart from chemotherapeutic drugs, blue lunula can also be caused by zidovudine, phenolphthalein, and silver. It can also occur in Wilson's disease, and as a normal finding in black races.<sup>[1,3]</sup>

This is an open access journal, and articles are distributed under the terms of the Creative Commons Attribution-NonCommercial-ShareAlike 4.0 License, which allows others to remix, tweak, and build upon the work non-commercially, as long as appropriate credit is given and the new creations are licensed under the identical terms.

For reprints contact: WKHLRPMedknow\_reprints@wolterskluwer.com



Figure 1: Blue pigmentation of the lunula of all fingernails



Figure 2: Blue pigmentation of the lunula of bilateral great toenails and two adjacent toenails



Figure 3: After 6 weeks, (a) near-complete resolution of the blue pigmentation of fingernails. (b) partial resolution of the pigmentation of toenails

This case adds another chemotherapy combination as a cause of blue lunula.

### 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.

### Financial support and sponsorship

Nil.

**How to cite this article:** Pangti R, Gupta S. Blue lunula due to a combination chemotherapy not reported before. *Indian Dermatol Online J* 2022;13:546-7.

**Received:** 16-Dec-2020. **Revised:** 23-Dec-2020.

**Accepted:** 28-Dec-2020. **Published:** 21-Aug-2021.

**Rashi Pangti,  
Somesh Gupta**

*Department of Dermatology and Venereology, All India Institute of Medical Sciences, New Delhi, India*

### Address for correspondence:

*Dr. Somesh Gupta,  
Professor, Department of Dermatology and Venereology, All India Institute of Medical Science, New Delhi - 110 029, India.*

*E-mail: someshgupta@hotmail.com*

### Access this article online

**Website:** www.idoj.in

**DOI:** 10.4103/idoj.IDOJ\_927\_20

### Quick Response Code:



### *Conflicts of interest*

There are no conflicts of interest.

### **References**

1. Jeevankumar B, Thappa DM. Blue lunula due to hydroxyurea. J Dermatol 2003;30:628-30.
2. UskudarTeke H, Erden A. Blue lunula related with hydroxyurea. Turk J Haematol 2013;30:100-1.
3. Cohen PR. The color of skin: Blue diseases of the skin, nails, and mucosa. Clin Dermatol 2019;37:468-86.
4. Casamiquela KM, Cohen PR. Chemotherapy-associated tongue hyperpigmentation and blue lunula. J Drugs Dermatol 2013; 12:223-6.