Longitudinal melanonychia (LM) is caused by activation or hyperplasia of the nail matrix melanocytes, a nail matrix nevus, or a nail matrix melanoma. The differential diagnosis is broad [1]:

- Physiologic causes, such as African race and pregnancy
- Systemic disorders, particularly human immunodeficiency virus (HIV) infection and Addison’s disease
- Drugs, e.g., chemotherapeutic agents (hydroxyurea) [2]
- Dermatologic diseases such as psoriasis
- Local causes, such as trauma and manicures.

Awareness on the part of the clinician is paramount since longitudinal melanonychia of a single nail often requires biopsy to detect matrix nevus or melanoma. LM is frequently observed in patients infected with HIV, particularly in the late stage of AIDS. The mechanism of nail melanocyte activation is not fully known, but is attributed to over-expression of alpha-melanocyte-stimulating hormone (α-MSH) and adrenocorticotropic hormone activity [3,4], as well as to ultraviolet light [3].

A retrospective study of 267 HIV-positive patients and 273 HIV-negative volunteers was undertaken to seek an association between HIV, skin pigmentation, antiretroviral therapy (zidovudine and/or stavudine) and LM. The authors found that melanonychia was more likely to occur among participants with darker skin coloration (56.7% of African-Americans as compared to 4.5% of Caucasians). It was also found that 49.1% of HIV-positive patients had LM compared to only 21.8% of HIV-negative persons. Participants with HIV and melanonychia were more likely to belong to groups with the darkest skin coloration compared to the lightest (odds ratio 14.6). Zidovudine, but not stavudine treatment further increased the likelihood to develop melanonychia among HIV patients (odds ratio 2.6) [3]. This finding was in accordance with a previous study reporting that after zidovudine therapy the rate of LM can be as high as 40% [4].

Due to the high incidence of melanonychia among HIV patients, this dermatologic sign was suggested as a possible marker for HIV positivity in previously untested patients with a relevant history and other physical signs [3].

**BACK TO THE PATIENT**

Biopsy of fingernails was not performed in our patient due to a combination of clinical and epidemiological factors: the high rate of melanonychia among Africans, as high as 77% in young adults [5], as well as involvement of multiple digits and newly diagnosed AIDS in this patient. The patient returned to his homeland to...
receive antiretroviral therapy and was lost to follow-up.

Correspondence
Dr. S. Sherman
Dept. of Internal Medicine T, Tel Aviv Sourasky Medical Center, Tel Aviv 64239, Israel
Fax: (972-3) 941-9304
email: shanyshnush@walla.co.il

References

Methyl-C binding may explain Rett late onset

Girls with Rett syndrome develop normally for the first 1 or 2 years of life before suffering from progressive neurological problems, perhaps due to mutations in methyl-CpG-binding protein 2 (MeCP2). Chen et al. analyzed the binding of MeCP2 to genomic DNA in the mouse brain and found that before birth MeCP2 binds predominantly to methylated CG sequences. After birth, there is an increase in the genome of methylated C in a non-CG context (mCH). MeCP2 binds to many of these mCH sites, which are enriched in genes with neuronal functions. MeCP2 binding modulates the transcription of these genes, some of which are implicated in Rett syndrome, potentially explaining the late onset of the disease.

Proc Natl Acad Sci USA 2015; doi/10.1073/pnas.1505909112
Eitan Israeli

Extra dividends from measles vaccine

Vaccination against measles has many benefits, not only lifelong protection against this potentially serious virus. Mina and collaborators analyzed data collected since mass vaccination began in high income countries when measles was common. Measles vaccination is associated with less mortality from other childhood infections. Measles is known to cause transient immunosuppression, but close inspection of the mortality data suggests that it disables immune memory for 2 to 3 years. Vaccination thus does more than safeguard children against measles; it also stops other infections taking advantage of measles-induced immune damage.

Science 2015; 348: 694
Eitan Israeli

Early T cells keep autoimmunity at bay

A major challenge faced by the immune system is to react to foreign substances, such as microbes, while simultaneously tolerating the self. Upsetting this balance leads to autoimmunity. Regulatory T cells (Tregs) are a subset of immune cells that help to maintain this balance. Yang and team found that murine Treg cells generated very early in life are distinct from those generated in older animals and play an especially important role in keeping autoimmunity in. These changes are due to differences in the way Tregs develop in the thymus in newborn versus adult mice.

Science 2015; 348: 589
Eitan Israeli

“Never bear more than one trouble at a time. Some people bear three kinds – all they have had, all they have now, and all they expect to have”

Edward Everett Hale (1822-1909), American author, historian and Unitarian minister

“Truth does not change according to our ability to stomach it”

Flannery O’Connor (1925-1964), American writer and essayist. A Southern writer who often wrote in a Southern Gothic style and relied heavily on regional settings and grotesque characters, her writing also reflected her own Roman Catholic faith and frequently examined questions of morality and ethics.