


Case Report

Distinctive nail pattern following androgen replacement therapy

Ippei Miyata¹  and Atsushi Nagai²

¹Department of Pediatrics ²Kawasaki Medical School Hospital, Okayama, Japan

Abbreviations & Acronyms

ART = androgen replacement therapy
LOH = Late onset hypogonadism

Correspondence: Ippei Miyata, M.D., Ph.D. Department of Pediatrics, Kawasaki Medical School, 577 Matsushima, Kurashiki City, Okayama 701-0192, Japan.
Email: miyata.kkcl@gmail.com

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Introduction: A distinctive nail pattern in a patient undergoing androgen replacement therapy is presented hereby.

Case presentation: A 47-year-old male patient noticed a peculiar “washboard-like” pattern on his fingernails. He had been undergoing androgen replacement therapy for late onset hypogonadism syndrome. The patient realized his nails were growing faster after his therapy was altered from a tri-weekly basis to a bi-weekly basis.

Conclusion: This phenomenon is likely to be attributed to the androgen replacement therapy, as the spacing between the ridges were widening in concordance with the strengthening of the therapy.

Key words: androgen, hormone replacement therapy, late onset hypogonadism syndrome, nails.

Keynote message

Androgen replacement therapy promotes nail growth in late onset hypogonadism syndrome patients. This is another observable physical manifestation of the positive effects of androgen replacement therapy.

Introduction

Late onset hypogonadism (LOH) syndrome compromises the quality of middle-aged men’s lives. Due to its creeping nature, many patients may not realize they are suffering from LOH syndrome. Patients may also be misdiagnosed, as the symptoms resemble other conditions. Presented herein is an interesting manifestation observed in the fingernails of an LOH patient who had several doses of androgen replacement therapy (ART).

Case

A 47-year-old patient consulted our outpatient clinic, concerned that he might be suffering from LOH syndrome. Although he had been aware of his depressive mood, loss in interest, altered appetite, difficulty in reducing body weight, and sleep disturbance, he attributed these symptoms to his busy daily workload. His wife pointed out that his symptoms resembled an LOH case presented in a TV show and strongly encouraged him to seek medical consultation. On first consultation, his free testosterone level was 11.7 pg/mg (borderline case), and ART (testosterone enanthate 250 mg/dose, injected intramuscularly) was initiated. His subjective symptoms apparently relieved after ART. ART was first carried out on a tri-weekly basis, further strengthened to a bi-weekly basis. One day, the patient noticed a distinctive washboard-like pattern on his fingernails, as presented in the Figure 1. He was also aware his nails were growing faster than before. Following further ART courses, the patient’s nail thickness became uniform.

Discussions

Although nail deformation due to growth suppression is commonly known, such as in cases of viral infections^{1,2} and antineoplastic medications,³ factors that promote nail growth are seldom documented. Furthermore, no similar cases could be found in the past literature. Still, the deformation presented herein is likely to be attributable to dose-dependent nail growth acceleration caused by ART, as the spacing between the ridges are in correspondence with the ART intervals. The authors hypothesize that testosterone, converted to estrogen by aromatase, elevated

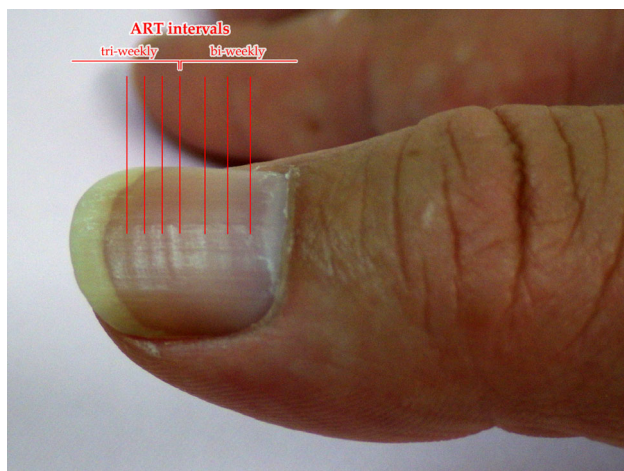


Fig. 1 Right thumb fingernail with washboard-like ridges. The spacing between the ridges apparently widened after ART was strengthened to a bi-weekly interval.

nitric oxide levels in the endothelium, leading to improved peripheral circulation in the nail matrix, caused this growth acceleration of nails. Such a mechanism is reported in the literature in circulatory and cardiovascular contexts.^{4,5} The mechanism by which this phenomenon is transient, the nail finally reaching a uniform thickness, is assumed as follows: as a result of continued ART, the trough testosterone level had been elevated to a level at which no further improvement of peripheral circulation occurred. Unfortunately, the management of this case was based on subjective complaints of the patient, lacking objective blood tests and scorings. The authors admit that this lack of objective evidence is a limitation of this case report. Further case observations and objective data collection, especially the time course of trough testosterone levels, is warranted to overcome this limitation and prove the aforementioned hypothesis. Still, despite the aforementioned limitation, we believe it to be worth reporting this interesting phenomenon encountered during ART for LOH syndrome.

In conclusion, we hereby presented another objective symptom reflecting the positive effect of ART in its early stage, as well as the hypothesized mechanism by which this phenomenon is caused.

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Author contributions

Ippei Miyata: Conceptualization; resources; visualization; writing – original draft; writing – review and editing. Atsushi NAGAI: Supervision; writing – review and editing.

Conflict of interest

The authors declare no conflict of interest.

Approval of the research protocol by an Institutional Reviewer Board

Not applicable.

Informed consent

The patient provided consent for publication of this case report.

Registry and the Registration No. of the study/trial

Not applicable.

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