
Fingernail psoriasis reconsidered: A case-control study

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Background: Literature concerning clinical signs and frequency of nail psoriasis is incomplete. Recent studies focus only on signs included in the Nail Psoriasis Severity Index (NAPSI).

Objective: We sought to describe clinical characteristics of fingernail psoriasis in comparison with healthy controls.

Methods: We collected data on 49 patients with fingernail psoriasis who visited our outpatient department and 49 control subjects, through questionnaires and clinical examination. The disease severity was measured by the NAPSI.

Results: Mean NAPSI score in patients and control subjects was 26.6 and 3.6, respectively. Most items included in the NAPSI were specific for nail psoriasis. Onycholysis and splinter hemorrhages were most frequently observed. Leukonychia was more frequent in control subjects. Longitudinal ridges and Beau lines are not included in the NAPSI but are significantly more frequently seen in patients than in control subjects.

Limitations: Limited sample size was a limitation.

Conclusion: The NAPSI was able to discriminate patients with fingernail psoriasis from healthy control subjects. Onycholysis and splinter hemorrhages were the most prevalent fingernail changes in psoriatic patients. Leukonychia was more frequently observed in control subjects, which raises the question of whether leukonychia should remain in the NAPSI. On the other hand, longitudinal ridges and Beau lines occurred more frequently in psoriasis but are not included in the NAPSI. (*J Am Acad Dermatol* 2013;69:245-52.)

Key words: Beau lines; epidemiology; leukonychia; nail psoriasis; Nail Psoriasis Severity Index; nails; onycholysis; psoriasis; splinter hemorrhages.

The prevalence of nail psoriasis varies between 10% and 79%.¹⁻⁶ It is reported that 80% to 90% of psoriatic patients develop nail psoriasis some time during their disease.^{1-4,6} However, psoriatic nail lesions rarely appear as the only clinical manifestation of psoriasis, as psoriasis limited to the nails occurs in only 1% to 10% of patients with psoriasis.^{1,3,4} It is mentioned that psoriatic arthritis (PsA) is associated with higher rates of nail psoriasis, and the severity of nail disease correlates with indicators of severity of joint disease.⁷

Abbreviations used:

NAPSI: Nail Psoriasis Severity Index
PASI: Psoriasis Area and Severity Index
PsA: psoriatic arthritis

Previous research states that nail psoriasis is associated with both longer duration and greater extent of skin disease.²

The clinical spectrum of nail psoriasis is heterogeneous, depending on the involvement of nail bed,

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nail matrix, or both. Widely accepted manifestations attributed to psoriatic inflammation of the nail matrix are pitting, red spots in the lunula, leukonychia, and nail plate crumbling. Nail bed manifestations are oil-drop discoloration, onycholysis, splinter hemorrhages, and subungual hyperkeratosis.^{5,6} Additional symptoms found in literature include Beau lines, onychomadesis, nailfold involvement, and longitudinal ridging.⁶ These are not included in the widely used Nail Psoriasis Severity Index (NAPSI) scoring system, which is limited to the first 8 mentioned nail changes. Using this instrument each quadrant of each fingernail is evaluated for presence or absence of nail bed or nail matrix disease. The sum of the scores for all the fingernails is the NAPSI score for the patient at that time (see Fig 1 for an example of calculation).⁸ In most recent studies concerning nail psoriasis only the total NAPSI score is used. Literature concerning the frequency of each specific clinical sign of nail psoriasis is limited.^{2,7,9-17}

The aim of this study was to describe the epidemiologic characteristics and the frequency of clinical signs of fingernail psoriasis and compare them with healthy controls.

METHODS

Study population

A total of 49 patients with fingernail psoriasis were recruited consecutively in this case-control study from the outpatient clinic at the Department of Dermatology of the Radboud University Nijmegen Medical Center, Nijmegen, The Netherlands. Patients were included from December 2009 through July 2012. Included patients were older than 18 years with clinically diagnosed fingernail psoriasis (NAPSI score ≥ 1). Patients who used artificial nails in the past 6 months or had presence of a skin disease (other than psoriasis), which is associated with nail manifestations, were excluded, as were patients with toenail involvement exclusively, because of the increased risk of coexistence of onychomycosis. To exclude patients with concomitant onychomycosis, clippings and subungual scrapings of affected fingernails were collected for direct microscopic examination (10% potassium hydroxide preparations) and fungal culture. Cultures were carried out on 2 different types of Sabouraud dextrose agar: 1 with

chloramphenicol and cycloheximide and 1 without cycloheximide. None of the patients tested positive.

In addition, a total of 49 age- and gender-matched control subjects were included. They were healthy individuals older than 18 years without (skin) diseases or medication associated with nail manifestations and were recruited from patients, visitors, and employees of the above-mentioned outpatient clinic.

CAPSULE SUMMARY

- The clinical spectrum of nail psoriasis is heterogeneous.
- We describe the clinical characteristics of fingernail psoriasis in comparison with healthy controls.
- Knowledge of the complete spectrum of clinical changes in nail psoriasis will help clinicians to recognize this disease.

Survey details

The survey of the psoriatic patients consisted of a questionnaire taken by interview and clinical examination conducted by the same investigator. The interview included items concerning demographic patient characteristics, general health, psoriasis-related data, and

specific nail psoriasis questions. Diagnosis of concomitant PsA was made through physical examination by a rheumatologist. Nail manifestations in both groups, ie, fingernail psoriasis and healthy control, were documented and photographed.

Severity of disease measurement

The severity of psoriasis was assessed by the Psoriasis Area and Severity Index (PASI) (range 0-72).¹⁸ Higher scores indicate more severe psoriasis of the skin. The body surface area represents the percentage of body surface affected and classifies the severity of the condition. The severity of fingernail psoriasis was assessed by the NAPSI score (Fig 1).⁸ Additional nail changes (eg, Beau lines, onychomadesis, longitudinal ridging, and nailfold involvement) were also assessed for each fingernail. The fingernails of the healthy control subjects were scored for the presence of the same manifestations of nail psoriasis and a NAPSI score was measured.

Statistical analysis

Data were entered in a Statistical Package for Social Sciences (SPSS 18.0, SPSS Inc, Chicago, IL) database and subsequently statistical analyses were performed. Descriptive statistics were provided using mean (SD) and median (range) for normally and nonparametric distributed numeric values, respectively. Frequencies and percentages were used for categorical variables. Missing values were not included to calculate percentages. Comparison of numeric variables were analyzed with the unpaired *t* tests or the Mann-Whitney U test and the χ^2 or Fisher exact test was used for differences between

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