



Natural History of Nevus Depigmentosus: A Long-term Follow-up Study of 102 Cases

Jae Min Sung*, Jin Cheol Kim*, Jung Min Bae¹, Ji Young Yang, Hee Young Kang, Eun-So Lee, You Chan Kim

Department of Dermatology, Ajou University School of Medicine, Suwon, Korea; ¹Department of Dermatology, St. Vincent's Hospital, College of Medicine, The Catholic University of Korea, Suwon, Korea

Dear Editor:

Nevus depigmentosus (ND) is a common depigmented nevus which manifests as well-circumscribed hypopigmented patch. Though the pathogenesis of ND is not fully understood, the number of melanocytes and amount of melanin are decreased

in ND lesion compared to uninvolved normal skin¹. It is generally known to be stable in its relative size and distribution, though there is no long-term follow-up study yet. In the present study, therefore, we sought to reveal the natural history of ND with long-term follow-up.

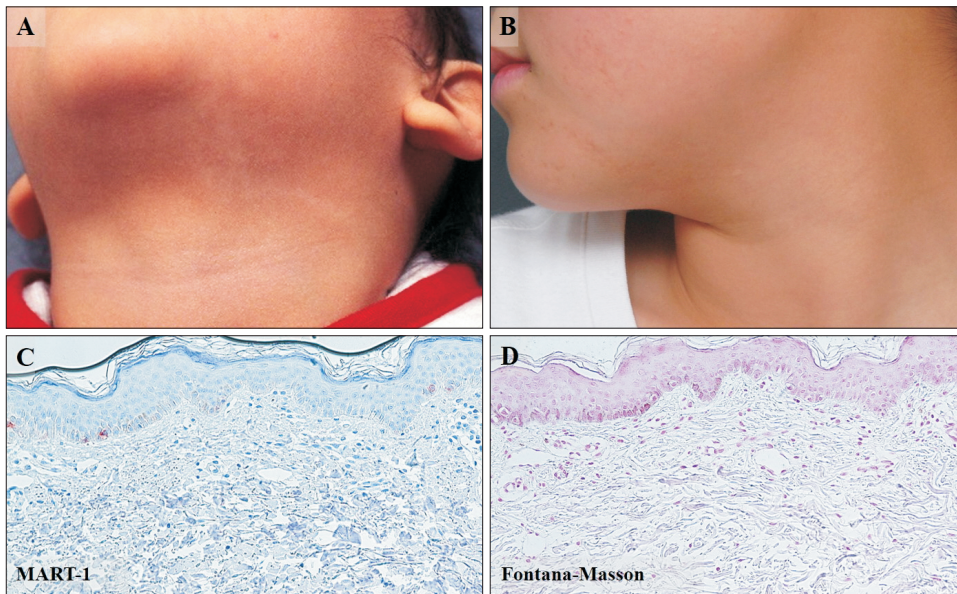


Fig. 1. Clinical changes in nevus depigmentosus (ND) after long-term follow-up and the histologic findings of the ND lesion. The ND lesion on her left neck (A) almost disappeared after 11 years (B) without any topical and systemic treatment. The histologic findings of the ND lesion showed slightly reduced melanocyte numbers (C) and decreased melanin pigments (D) in MART-1 and Fontana-Masson stain, respectively (original magnification 200×). We received the patient's consent form about publishing all photographic materials.

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Corresponding Author

You Chan Kim

Department of Dermatology, Ajou University School of Medicine, 164 WorldCup-ro, Yeongtong-gu, Suwon 16499, Korea

Tel: +82-31-219-5190, Fax: +82-31-219-5189, E-mail: maychan@ajou.ac.kr

<https://orcid.org/0000-0003-4840-594X>

*These authors have equally contributed to the article.

Table 1. The basic characteristics of 102 patients with ND

	Value
Sex	
Male	47 (46.1)
Female	55 (53.9)
Age of the first recognition of ND (yr)	
At birth	38 (37.3)
<1	24 (23.5)
1~3	21 (20.6)
>3	19 (18.6)
Mean age at the last follow-up (yr)	8.25
Patterns of distribution	
Localized type	50 (49.0)
Segmental type	48 (47.1)
Generalized type	4 (3.9)
Laterality	
Right	46 (45.1)
Left	45 (44.1)
Bilateral	11 (10.8)
Numbers of lesions	
1	58 (56.9)
2~5	31 (30.4)
6~10	10 (9.8)
11~20	3 (2.9)
Affected body site	
Face	19 (12.2)
Neck	30 (19.2)
Chest	13 (8.3)
Back	24 (15.4)
Abdomen	12 (7.7)
Upper arm	16 (10.2)
Lower arm	9 (5.8)
Hand	7 (4.5)
Thigh	14 (9.0)
Lower leg	10 (6.4)
Foot	2 (1.3)
Involved body surface area (%)	0.6 (0.1~16.0)

Values are presented as number (%) or median (range). ND: nevus depigmentosus.

One-hundred two patients histologically diagnosed with ND from March 1998 to July 2018 at our clinics were included. Histologic findings of all the lesions showed normal or slightly

reduced melanocyte numbers with decreased melanin pigments. All patients had no prior inflammation or erythema on the lesions and were followed up at least one year. Their medical charts and photographs were retrospectively reviewed and a clinical survey was done. The change in the proportion of the lesion site in the total affected body area was checked by comparing photographs. The study was approved by the Institutional Review Board of the Ajou University Hospital (IRB no. AJIRB-MED-SUR-15-413). The informed consent was waived.

The most common site of ND was neck (19.2%), followed by back (15.4%) and face (12.2%) (Table 1). Although the most case of ND appeared in the first year of birth (37.3%), in 18.6% of our patients, it appeared even after 3-year-old age. The most common type was localized type (49.0%) followed by segmental (47.1%) and generalized type (3.9%) which are characterized by systemized, with multiple whorls or streaks^{1,2}. There was no tendency in laterality and the median percentage of affected body surface area was 0.6%.

We compared the most recent and the initial photographs and the change of lesion was categorized by two independent dermatologists into four categories: no change, expansion, shrinkage, and disappearance. Ninety seven out of 102 patients (95.09%) showed no change. Two patients (1.96%) showed shrinkage and one patient (0.98%) showed disappearance of ND which has been previously reported in 2012 (Fig. 1)³. Expansion of lesion was observed in two patients (1.96%). The median follow-up duration was 4.2 years from the onset and the mean age at the last follow up was 8.25 years old. In this study, we demonstrated stable course of the disease with relatively long term follow up duration which is consistent with findings from previous articles^{4,5}. However, the most interesting finding was the change in lesion observed in five patients (about 5%). Unlike a simple nevus, ND showed expansion or shrinkage in some cases and this observation can contribute to our new insights into the pathogenesis of ND.

Our study has limitations. Multiple variables including sun-exposure, usage of immune modulatory medications for other medical conditions, and growth of the patients have not been controlled due to the retrospective design of study. Therefore, these factors could influence the nature course of ND. However, the diagnosis of ND in all patients was histologically confirmed and the change in size of each lesion was checked by comparing photographs.

In conclusion, we can expect spontaneous regression or expansion of ND in few cases though the natural course of ND

is generally stable. The expansion or shrinkage of lesion is interesting finding, which suggests that ND is not just a simple nevus, but a kind of nevoid abnormality which can change. Further clinical trials are necessary to confirm our result.

CONFLICTS OF INTEREST

The authors have nothing to disclose.

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ORCID

Jae Min Sung, <https://orcid.org/0000-0002-5658-8320>

Jin Cheol Kim, <https://orcid.org/0000-0003-3820-8811>

Jung Min Bae, <https://orcid.org/0000-0001-5975-8519>

Ji Young Yang, <https://orcid.org/0000-0002-2929-0908>

Hee Young Kang, <https://orcid.org/0000-0001-8697-4292>

Eun-So Lee, <https://orcid.org/0000-0003-0232-7704>

You Chan Kim, <https://orcid.org/0000-0003-4840-594X>

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