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Acrodermatitis continua of Hallopeau successfully treated only with infliximab: A case report

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Abstract

A 22-year-old man presented with a 2-month history of rapidly progressing pustular eruptions on the accrual regions of his fingers and toes with local arthralgia and severe nail destruction. A histological examination revealed parakeratosis, hyperkeratosis and elongation of the rete ridges of the epidermis with exocytosis of neutrophils forming spongiform pustules of Kogoj. Based on these findings, we diagnosed this case as acrodermatitis continua of Hallopeau (ACH). ACH, a variant of pustular psoriasis, is often resistant to various topical treatments, and the patient experienced prominent decline in his quality of life. Therefore, we decided to use infliximab in the present case. After the fourth administration of infliximab alone, the patient's digital arthralgia and pustular eruptions disappeared completely, and the long-term administration of infliximab drastically reduced all of the patient's symptoms of ACH, including the nail lesions without any adverse events or recurrence. Our findings suggest that ACH shares a disease spectrum with plaque-type and pustular psoriasis. In addition, biologic agents such as a tumor necrosis factor-α inhibitor are useful for treating patients with ACH just as those with psoriasis and may even be used alone.

KEYWORDS
acrodermatitis continua of Hallopeau, arthralgia, infliximab, pustular psoriasis, tumor necrosis factor-α inhibitor

1 | INTRODUCTION

Acrodermatitis continua of Hallopeau (ACH) (also known as dermatitis repens) is characterized by chronic and recurrent erythematous pustules on the acral regions of the hands and feet. ACH was first described in 1890 by Henri Hallopeau[1] and has been a rare variant of pustular psoriasis. ACH usually does not respond to topical treatments (phototherapy, corticosteroid, calcipotriol, etc.) and systemic therapy using cyclosporine, methotrexate, or prednisolone often fails or loses efficacy. If left untreated or with declining efficacy of treatment, progression of the disease results in sclerosis of the skin and osteolysis, as well as severe onychodystrophy and anonychia.

The effectiveness of tumor necrosis factor (TNF)-α inhibitors and other biologics in cases of recalcitrant ACH has been reported since 2004.[2] We herein report a Japanese patient with ACH who was successfully treated with infliximab (IFX) alone, showing a prompt and long-term effect against the skin eruptions as well as the arthralgia and nail involvement over a period of 1 year.

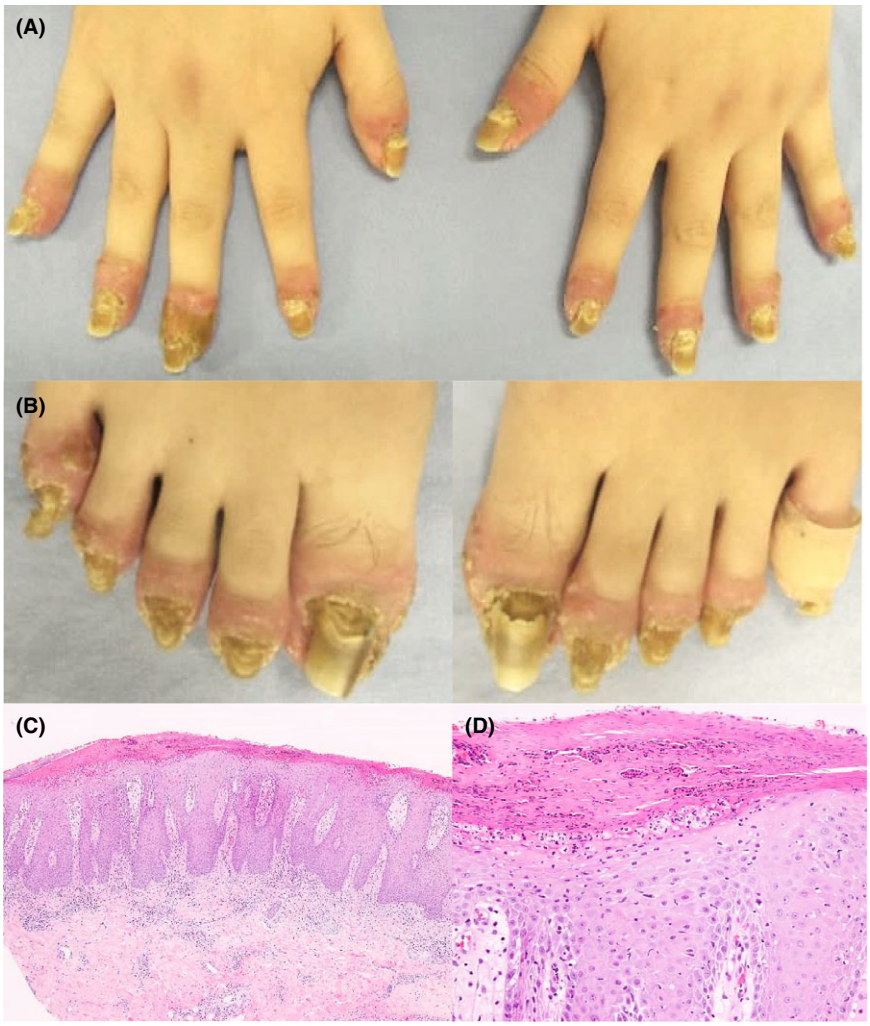

FIGURE 1 Clinical appearances and histopathologic findings. The hands (A) and feet (B) before the treatment with infliximab. Pustules, erythema, and desquamation and severe nail deformity (nail psoriasis severity index [NAPSI]; 8 on both hands and feet) were observed. The visual analogue score (VAS) for the right metacarpophalangeal joint pain was 6 of 10. Hyperkeratotic stratum corneum with parakeratosis and acanthosis with uniformly elongated rete ridges of the epidermis was observed with a dense infiltrate of inflammatory cells (C: ×100). Several aggregations of neutrophils in the corneal and upper epidermal layers forming intraepithelial spongiform pustules of Kogoj were noted. (D: ×400)

2 | CASE REPORT

A 22-year-old man presented with a 2-month history of rapidly progressing pustular eruptions on the acral regions of his fingers and toes with local arthralgia and severe nail abnormality. He had no personal or family history of psoriasis or other autoimmune diseases. In addition to the pustular eruptions of the fingers and toes, he complained of arthralgia at the right metacarpophalangeal joint and severe nail deformity with hypertrophy and yellowish-white discoloration of the nail plate (Figure 1A,B). Histological findings of a skin lesion from the left middle toe showed parakeratotic hyperkeratosis, and elongation of the rete ridges of the epidermis with exocytosis of neutrophils and lymphocytes extending to the epidermis. Several aggregations of neutrophils were noted in the corneal and upper epidermal layers forming intraepithelial spongiform pustules of Kogoj. A lymphohistiocytic infiltrate and focal edema of the upper dermis were also observed (Figure 1C,D). A diagnosis of ACH was made based on these findings, and the patient was started on treatment with topical corticosteroids; however, no efficacy whatsoever was noted for the skin and nail lesions even after several weeks.

As the patient still complained of severe digital arthralgia and involvement of acral areas of the skin, a fast-acting systemic therapy was needed. Therefore, we decided to use the TNF-α inhibitor IFX, and 5 mg/kg was given intravenously at weeks 0, 2, 6, and every 8 weeks thereafter according to our usual protocol in the treatment of plaque-type psoriasis and psoriatic arthritis. His arthralgia disappeared immediately after the first administration of IFX, and all of the pustules had cleared after the fourth administration. After 12 months, a substantial improvement in the lesions was observed, with only slight erythema remaining in the patient's fingers and toes, and nail deformity showed gradual improvement (Figure 2A,B). No adverse events or relapse was observed with long-term therapy over 1 and a half years.

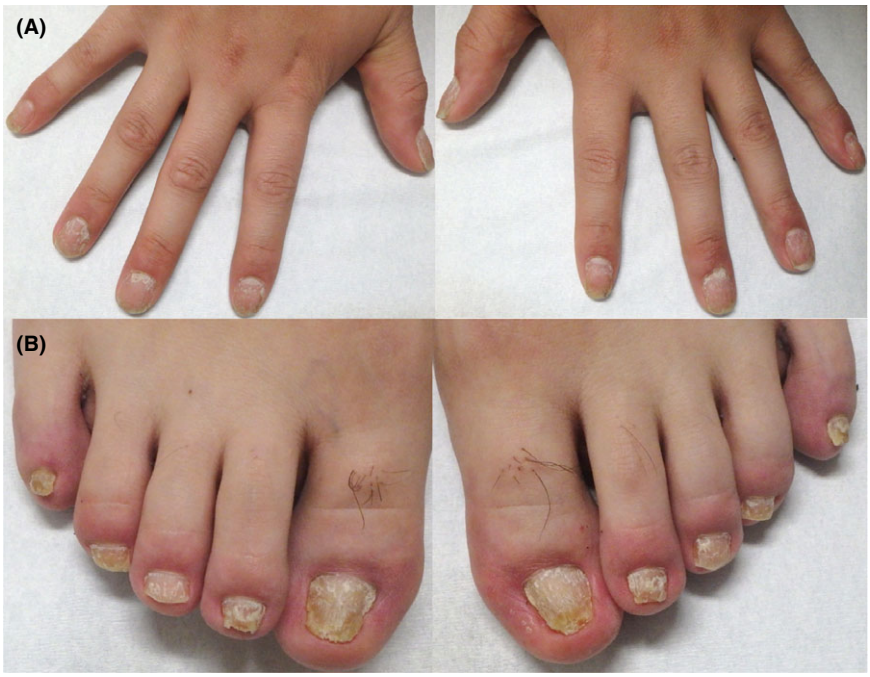

FIGURE 2 The clinical presentation of the fingers and toes after 8 applications of infliximab. Complete regression of the pustules and desquamation and improvement of the nail deformity of the fingers (A: NAPSI; 2) and toes (B: NAPSI; 4) were noted, with slight residual periungual erythema. The VAS for the arthralgia of the finger decreased to 0/10

TABLE 1 Cases in which infliximab was used to treat acrodermatitis continua of Hallopeau

	Authors	Age (y)/Sex	Disease duration (mo)	Concomitant medications	Previous treatments	Response
1	Mang et al	58/M	48	CyA	Corticosteroid, calsipotriol, antibiotics ointment, acitretin, CyA	Good
2	Ahmad et al	78/F	84	None	PUVA, UVB, acitretin, CyA, MTX	Good
3	Rubio et al	60/F	180	Acitretin, CyA	Corticosteroid ointment, CyA, MTX, acitretin, corticosteroid, AZ, ETN, efalizumab	Good
4	Thielen et al	64/M	480	None	PUVA, acitretin, etretinate, colchicine, thalidomide, CyA, MTX	No response
5	Kamili et al	n.d.	n.d.	MTX	Unknown	No response
6	Tobin & Kirby	54/F	4	CyA	CyA, MTX, corticosteroid	Good
7	Ryan et al	72/F	12	None	Topical agents (n.d. in detail), UVA	Good
8	Georgakopoulos et al	68/M	36	Apremilast	CyA	Good
9	Saunier et al	53/M	12	MTX	Acitretin, CyA, MTX, UVB, ADA, ETN	No response
10	Okuno et al	29/M	48	MTX, SASP	Corticosteroid ointment, CyA	Good
11	Okuno et al	55/F	3	MTX, SASP	Tacrolimus ointment, SASP	Good
12	Ito et al	61/F	360	Etretinate	Corticosteroid, vitamin D3 ointment, CyA	Good
13	Kurihara et al	64/M	n.d.	n.d.	CyA	No response
14	Our case	22/F	2	None	Corticosteroid ointment	Good

ADA, adalimumab; AZ, azathioprine; CyA, cyclosporin; ETN, etanercept; MTX, methotrexate; n.d., not described; PUVA, psoralen plus UVA; SASP, salazosulfapyridine; UVB, ultraviolet.

3 | DISCUSSION

In the treatment of ACH, no controlled studies have been reported in the literature because of its rarity, and no clinical guideline of ACH has been established. Topical therapies, phototherapy, and systemic therapies may be effective in some cases of ACH; however, we often experience patients who are refractory to those treatments and who have severe skin/nail lesions or

are complicated with extracutaneous symptoms, such as bone and joint involvement.

TNF-α as well as IL-12/23 and IL-17 has been recognized as the key molecules in the pathogenesis of psoriasis. IFX is a chimeric human-murine monoclonal antibody that specifically and drastically inhibits TNF-α and has recently been used as a fast-acting treatment for patients with severe plaque-type psoriasis, psoriatic arthritis, erythrodermic psoriasis, and pustular psoriasis in the field of dermatology. Given the immunological and histopathological similarities between ACH and pustular psoriasis, TNF-α inhibitors and other biologics have been used for ACH patients who are unresponsive to the available therapies, including cyclosporine and etretinate.[2–5]

To our knowledge, 49 cases of ACH have been reported to be treated with biologics (14 with IFX, 13 with adalimumab, 12 with etanercept, 4 with ustekinumab, 3 with secukinumab, and 3 with efalizumab). Table 1 summarizes the 14 reported cases of ACH treated with IFX.[2,3,6–15] Among them, 8 cases were successfully treated with IFX; however, some reports described the failure of IFX to treat ACH. Four cases of ACH were treated with IFX alone, 3 of which showed a satisfactory effect of IFX against the disease. Although treatment using anti-TNF-α agents for ACH remains controversial,[6,14,16] in the present case, the efficacy of this agent for treating both the skin and nail lesions was clinically noted, and pain reduction in the finger joint was complete at 12 months after starting IFX.

In conclusion, we report a case of a good long-term therapeutic outcome with IFX and propose that IFX and other TNF-α inhibitors be considered in the treatment of refractory patients with severe ACH.

CONFLICT OF INTEREST

The authors declare no conflict of interest.

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