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CASE REPORT

Successful Treatment of Recalcitrant Primary Follicular Mucinosis with Indomethacin and Low-dose Intralesional Interferon Alpha

Kyu Ri Kim, M.D., Ji Yeoun Lee, M.D., Mi Kyeong Kim, M.D.[1], Tae Young Yoon, M.D.

Departments of Dermatology and [1]Internal Medicine, School of Medicine and Medical Research Institute, Chungbuk National University, Cheongju, Korea

Follicular mucinosis (FM) is an epithelial reaction pattern that is characterized by the accumulation of mucinous material in the epithelial hair follicle sheath and the sebaceous glands. Although various pharmacological agents have been employed in an attempt to treat FM, effective therapeutic options have remained elusive. We experienced a recalcitrant form of primary FM that we successfully treated with indomethacin and low-dose intralesional interferon alpha (IFN α), respectively. To the best of our knowledge, the primary type of FM that responded to indomethacin and low-dose IFN α, respectively, in a single case has not been reported in the English medical literature. **(Ann Dermatol 21(3) 285～287, 2009)**

-Keywords-
Follicular mucinosis, Indomethacin, Interferon alpha

INTRODUCTION

Pinkus[1] in 1957 first described the term "alopecia mucinosa" for 6 cases of localized alopecia that were histopathologically characterized by mucin deposition within the hair follicles. Follicular mucinosis (FM) was later suggested as a better term since the clinical features are variable and alopecia is not always observed[2]. Corticosteroids, dapsone, minocycline, superficial X-ray, indomethacin, and interferons have been used with various results in individual cases[1,3-7]. However, effective therapeutic options for FM have remained elusive. Herein, we report on a case of the complete remission of a recalcitrant form of primary FM, and this was treated with indomethacin and low-dose intralesional interferon alpha (IFN α), respectively.

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Reprint request to: Tae Young Yoon, M.D., Department of Dermatology, School of Medicine & Medical Research Institute, Chungbuk National University, 410, Seongbong-ro, Heungdeok-gu, Cheongju 361-763, Korea. Tel: 82-43-269-6369, Fax: 82-43-266-1698, E-mail: tyyoon@chungbuk.ac.kr

CASE REPORT

A 52-year-old Korean woman presented with a 3-month history of asymptomatic and edematous plaques on both cheeks. She complained that the lesions had gradually enlarged in size. The physical examination revealed slightly indurated, edematous, and erythematous to brownish plaque on the right cheek (Fig. 1A). The lesion of the left cheek was not prominent and no other parts of the body were affected. The patient was otherwise healthy. The routine hematologic and biochemical tests were within the normal limits. Histopathological examination of a biopsy from the right cheek lesion revealed reticular epithelial degeneration and areas of cavitation within the pilosebaceous units. Lymphocytes, histiocytes and many eosinophils infiltrated around and into the hair follicles and the sebaceous glands (Fig. 2A, B). No atypical lymphocytic infiltrate was observed. Alcian blue pH 2.5 staining revealed the accumulation of acid mucopolysaccharide in the degenerated areas (Fig. 2C). These clinicopathological findings were considered diagnostic of primary FM.

The patient was initially treated with minocycline, dapsone and topical steroids, but the lesions did not improve. We switched the treatment to methotrexate and intralesional steroids. However, the effect was incomplete

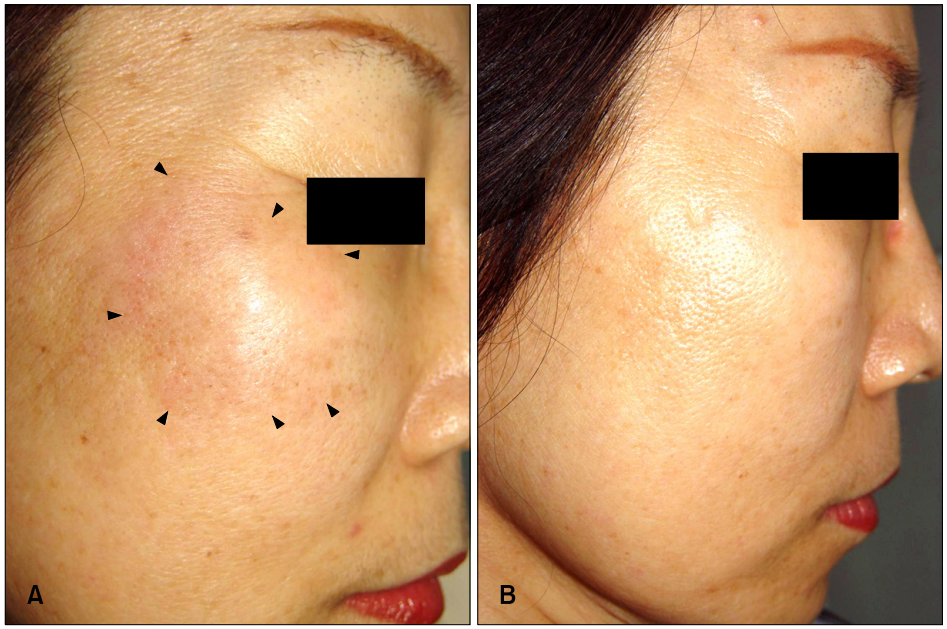

Fig. 1. (A) A slightly indurated, edematous, and erythematous to brownish plaque on the right cheek. (B) Complete healing after indomethacin and IFN α treatment.

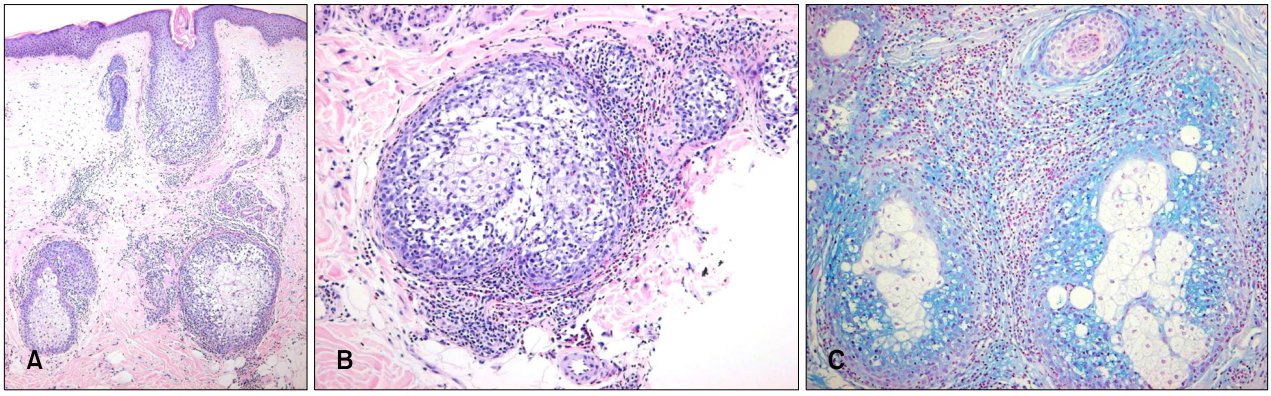

Fig. 2. (A) Degeneration of the pilosebaceous unit with formation of cystic spaces and inflammation (H&E stain, ×100). (B) An inflammatory infiltrate composed of lymphocytes, histiocytes, and many eosinophils is present around and within the sebaceous gland epithelium (H&E stain, ×200). (C) Positive staining with alcian blue pH 2.5 (original magnification ×200).

and new lesions appeared. Therefore, methotrexate was discontinued and indomethacin was administered at a dose of 25 mg twice daily together with intralesional steroids. Remarkable improvement was observed 3 months after the start of this treatment. Thus, the intralesional steroid injections were stopped and indomethacin was continued at a half dose for a further 4 months, and complete remission of the skin lesions was maintained. At that time, indomethacin was not available because the production of this drug was stopped in Korea. The lesions recurred a month after indomethacin discontinuation. We administered intralesional IFN α-2a 3×10^6 IU biweekly, and dramatic improvement was observed after 5 injections. The interval between successive IFN α-2a administrations was progressively increased up to every 4 weeks. Complete remission was achieved after 6 months of treatment with IFN α. The IFN α treatment was well tolerated with only pain during the injection. Furthermore, no signs of any recurrence were observed 4 months after the end of treatment (Fig. 1B).

DISCUSSION

FM is an epithelial reaction pattern that is characterized by the accumulation of mucinous material in the epithelial hair follicle sheaths and the sebaceous glands[8]. This disorder is divided into two types. The primary type of FM occurs when there is no underlying associated skin disease. The secondary type is associated with a number of inflammatory disorders and malignant conditions,

including mycosis fungoides and other lymphomas[3]. We consider that our case is the primary type of FM based upon the absence of an atypical lymphocytic infiltrate in the skin lesion and the complete remission after treatment with indomethacin or IFN α.

The infiltrate mainly consisted of lymphocytes, but there were variable numbers of histiocytes and eosinophils[1,3]. It has been suggested that the keratinocytes that form the affected follicles produce intracellular mucin and they eventually degenerate, which is induced by the T lymphocytes of the infiltrate[9]. On the basis of this postulation, we used various anti-inflammatory agents such as steroids, minocycline, and dapsone, but these drugs failed to control the eruption.

The exact mechanism of the effect of indomethacin and IFN α on FM is not well established. Indomethacin is an inhibitor of cyclooxygenase activity that reduces the synthesis of eosinophil chemotactic factor and lymphokine, resulting in the inhibition of the chemataxis of eosinophils and the inhibited activation of lymphocytes and macrophages[10,11]. IFN α has imunomodulatory effects, which include enhancement of suppressor T cells and inhibition of the helper T cell function, and a stimulating effect on the phagocytic and metabolic activities of macrophages[12,13]. The actions of IFN α on the eosinophils are inhibition of chemotaxis and the decreased production of hydrogen peroxide and peroxidase in response to stimuli[14]. In addition, IFN α inhibits the release of cytotoxic proteins such as eosinophil cationic protein and eosinophil-derived neurotoxin, as well as the molecules involved in eosinophil differentiation and activation such as IL-5[15]. Based upon the findings of the infiltrate of many eosinophils in the skin lesion and the complete response to agents that inhibit the eosinophil functions, we suggest that various inflammatory mediators released by eosinophils might play an important role in the mucin production and in the degeneration of the follicular and sebaceous glandular epithelium.

There have been some reports showing indomethacin or IFNs are effective to treat the primary type of FM[5,7]. To the best of our knowledge, the primary type of FM responding to indomethacin and low-dose IFN α, respectively, in a single case has not been reported in the English literature. In the present report, we describe the complete remission of the primary type of FM that was treated with indomethacin and low-dose IFN α, respectively. Further studies are warranted to determine the role of eosinophils in the pathogenesis of FM.

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