

A Case of Proliferative Fasciitis in the Finger

Jeong Hoon Park, M.D.¹, Mi Seon Kang, M.D.², Seon Wook Hwang, M.D.¹,
Sang Seok Lee, MD.³, Sung Wook Park, M.D.¹

Department of ¹Dermatology and ²Pathology, Inje University School of Medicine, Busan, Korea;
³Kang Nam Dermatology Clinic, Ulsan, Korea

Proliferative fasciitis is a rare reactive condition that presents with pseudosarcomatous lesions in subcutaneous tissues. Clinically, most patients present with firm, rapidly growing subcutaneous nodule and two thirds of patients complained of pain and tenderness. Most of lesions occur in the extremities, with the upper extremity (especially the forearm) affected more commonly than the lower extremity. Microscopically, proliferative fasciitis is composed of spindle cells that are deposited in a variably myxoid and collagenous stroma. It is characterized by the presence of large basophilic cells with one or two vesicular nuclei. Proliferative fasciitis could be confused with sarcomas because of intense cellularity, high mitotic index, and rapid growth.

A 26-year-old woman complained of a painful nodule on her right second finger. Its size was gradually increased and pain was worsened. Histopathological examination revealed that the lesion consisted predominantly of spindle-shaped cells intermingled with a few gangliocyte-like giant cells.

We herein report a rare case of proliferative fasciitis in the finger in a 26-year-old woman. (*Ann Dermatol (Seoul)* 19(1) 25~27, 2007)

Key Words: Finger, Proliferative fasciitis

INTRODUCTION

Proliferative fasciitis is a rare condition that presents as pseudosarcomatous lesions in subcutaneous tissues, and commonly occurs in the extremities. The lesion can grow 1.0-5.0 cm in diameter in 2-6 weeks, and two thirds of patients complain of pain and tenderness to the nodules. Microscopically, it is composed of spindle cells and several basophilic gangliocyte-like giant cells in a variably myxoid or collagenous stroma. Proliferative fasciitis should be carefully diagnosed, as intense cellularity, high mitotic index, and rapid growth could frequently be confused with sarcomas.

CASE REPORT

A 26-year-old woman presented with a painful subcutaneous nodule on her finger (Fig. 1). Approximately three weeks ago, an asymptomatic solitary nodule occurred on her finger, and it was gradually increased and was accompanied by pain and tenderness. Physical examination revealed a flesh-colored firm subcutaneous nodule, measured about 1.0 cm in diameter was palpable on her right second finger. It was not firmly attached to the underlying tissue, but its mobility was restricted. She had no history of trauma or infection at the site of the lesion. Her past history was unremarkable and routine laboratory evaluations showed no abnormalities. An excisional biopsy was performed under local anesthesia.

Grossly it was well-circumscribed, elongated mass which extended subcutaneous tissue. Histologic section showed a high cellularity with proliferation of spindle cell and numerous thin walled blood vessels. Gangliocyte-like giant cells, with basophilic cytoplasm and prominent nucleoli

Received December 15, 2005

Accepted for publication June 7, 2006

Reprint request to: Seon Wook Hwang, M.D., Department of Dermatology, Busan Paik Hospital, College of Medicine, Inje University, 633-165 Kaegum-dong, Busan jin-gu, Busan 614-735, Korea. Tel: 82-51-890-6135, Fax: 82-51-897-6391, E-mail: der7611@hanmail.net



Fig. 1. A 1.0 × 1.0 cm sized, flesh-colored solitary nodule in the right second finger.

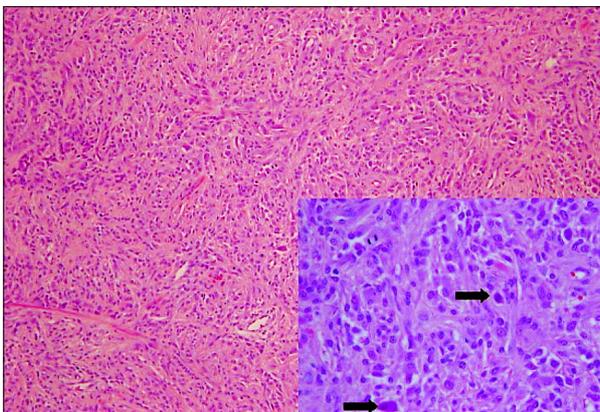


Fig. 2. Proliferative fasciitis was composed of a mixture of spindle cells and gangliocyte-like giant cells (H & E, ×100). Inlet: Close-up (H & E, ×400, arrow: gangliocyte-like giant cell).

were also seen among the spindle cells (Fig. 2). Although spindle cells were stained positively for vimentin and CD68, they were stained negatively for smooth muscle actin (Fig. 3A, 3B). The interstitium was stained positively for alcian blue (PH2.5).

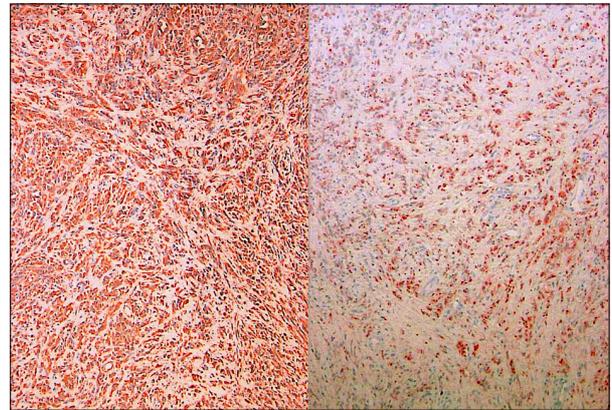


Fig. 3. Spindle cells were stained positively for vimentin and CD 68 (A: vimentin stain, ×100, B: CD 68 stain, ×100).

DISCUSSION

Proliferative fasciitis is a rapidly growing benign proliferative disorder arising in the septum of subcutaneous tissue or fascia^{1,2,4}. Although proliferative fasciitis was initially used to refer to subtype of nodular fasciitis⁵, in 1975, Chung et al.⁴ established proliferative fasciitis as a disorder distinct from nodular fasciitis in that poor circumscription and presence of large ganlion-like, basophilic giant cell. The precise cause of proliferative fasciitis is unknown, but it is believed that trauma or localized inflammation triggers the proliferation of fibroblast and myofibroblast^{1,3}. It is most common in adults being 40-70 years of age (mean 54 years). There is no gender or race predilection, and most of the lesions occur on the extremities, with upper extremity affected more commonly than lower extremities. It also occurs on the trunk and rarely on the head and neck²⁻⁴. The lesion grew to 1.0-5.0 cm in diameter in 2-6 weeks, and two thirds of patients complained of pain and tenderness^{1,4}.

In this case, the patient had a solitary nodule on her finger that rapidly grew to 1.0 cm in diameter and accompanied by pain and tenderness.

The diagnosis is usually made on histological examination of excised tissue. The characteristic microscopic findings are the proliferation of spindle cells and several basophilic, gangliocyte-like cells in a myxoid stroma or collagenous matrix^{3,11}. There are two hypotheses on the origin of the proliferating spindle cells. Ushigome et al.⁶ asserted

the spindle cells may derived from fibroblasts while Craver et al.⁷ argued myofibroblasts may be the origin of the spindle cells.

In this case, the spindle cells were immunohistochemically positive for vimentin, CD 68 and negative for smooth-muscle actin. Thus we could assume that spindle cells may be derived from fibroblasts.

Dahl et al.⁸ proposed that nodular fasciitis, proliferative fasciitis and proliferative myositis should be under the general designation of "pseudosarcomatous proliferative lesion of the soft tissue". However, the age predilection and histopathologic findings differentiate nodular fasciitis from proliferative fasciitis and proliferative myositis. Though proliferative myositis and proliferative fasciitis are similar both clinically and pathologically, the site of lesion is intramuscular for the former and the latter affects in fascia or subcutaneous tissue^{1,3}.

Proliferative fasciitis should be carefully diagnosed because of the intense cellularity, high mitotic index rapid growth which frequently lead to confusion with sarcomas^{1,2,4,9}.

Treatment of proliferative fasciitis is total excision, and chance of recurrence is rare. Usually there is no need to perform a radical surgery for the treatment^{1,2,10}.

Proliferative fasciitis rarely occurs in the fingers. After Richards et al.¹⁰ first reported a case in 1990, to our knowledge, this is the second case report of a proliferative fasciitis which occurred in the finger.

REFERENCES

1. Honda Y, Oh-i T, Koga M, Serizawa H. A case of proliferative fasciitis in the abdominal region. *J Dermatol* 2001;28:753-758.
2. Lorenc ZP, Brouman S, Imbriglia JE. Proliferative fasciitis of the hand in a child. *J Hand Surg [Am]* 1987;12:1066-1070.
3. Weiss SW, Goldblum JR. Benign fibrous tissue tumors. Marc Strauss: Enzinger and Weiss's Soft tissue tumors. 4th Ed. The Mosby Inc, St. Louis, 2001:247-307.
4. Chung EB, Enzinger FM. Proliferative fasciitis. *Cancer* 1975;36:1450-1458.
5. Soule EH. Proliferative nodular fasciitis. *Arch Pathol* 1962;73:437-444.
6. Ushigome S, Takakuwa T, Takagi M, Koizumi H, Morikubo M. Proliferative myositis and fasciitis. Report of five cases with an ultrastructural and immunohistochemical study. *Acta Pathol Jpn* 1986;36:963-971.
7. Craver JL, McDivitt RW. Proliferative fasciitis: ultrastructural study of two cases. *Arch Pathol Lab Med* 1981;105:542-545.
8. Dahl I, Angervall L. Pseudosarcomatous proliferative lesions of soft tissue with or without bone formations. *Acta Pathol Microbiol Scand [A]* 1977;85:577-589.
9. Schechter WP, Wong D, Kilgore ES, Newmeyer WL, Howes EL, Clark G. Peripartum pseudomalignant myositis ossificans of the finger. *J Hand Surg [Am]* 1982;7:43-46.
10. Richards RH, Evans G, Fitzgerald JA, Millward-sadler GH. Proliferative fasciitis of a finger: A case report. *J Hand Surg [Br]* 1990;15:501-502.
11. Lee MW, Choi JH, Sung KJ, Moon KC, Koh JK. Nodular fasciitis, review of 16 cases. *Kor J Dermatol* 2001;39:1-6.