

## A Case of Eruptive Collagenoma on the Left Calf

Min Hee Kang, M.D., Hyun Joon Kim, M.D., Young Ju Seo, M.D. Eun Ju Park, M.D.,  
Chul Woo Kim, M.D., Hee Jin Cho, M.D., Kwang Ho Kim, M.D., Kwang Joong Kim, M.D.

*Department of Dermatology, College of Medicine, Hallym University, Anyang, Korea*

Eruptive collagenoma is an acquired connective tissue nevus without family history. It is typically described as numerous small papules or nodules on the trunk and arms with histopathological features of decreased or degenerated elastic fibers. We report a case of a 16-year-old male who presented with multiple asymptomatic 2 to 5 mm sized yellowish grouped papules on the left calf. Histopathologically, the lesion showed thickened homogenized collagen fibers highlighted by Masson trichrome stain and decreased and fragmented elastic fibers stained by Verhoeff-van Gieson stain. The skin lesion was diagnosed as eruptive collagenoma and no treatment was provided.

(Ann Dermatol (Seoul) 20(3) 130~133, 2008)

*Key Word:* Eruptive collagenoma

### INTRODUCTION

Eruptive collagenoma is a rare acquired connective tissue hamartoma consisting predominantly of collagen without family history<sup>1</sup>. Eruptive collagenoma has been described as multiple small papules with areas of decreased or degenerated elastic fibers, usually on the trunk and arms<sup>1</sup>. We herein report a case of eruptive collagenoma which developed on the left calf in a 16-year-old boy.

### CASE REPORT

A 16-year-old boy presented with numerous asymptomatic papules on the left calf. The lesion first appeared at the age of 10 years and had been slowly increasing in number and size. He denied previous skin eruptions or trauma to the areas where the papules developed. He had no other

significant problems in health and there was no family history of similar disorders. Physical examination revealed multiple slightly raised, yellowish grouped papules on the left calf (Fig. 1). The papules measured 3 to 5 mm in diameter. The initial clinical diagnosis was sebaceous hyperplasia, xanthoma or collagen disorders. The histological examination revealed unremarkable epidermis and slightly homogenized condensed collagen and decreased elastic fibers in the dermis (Fig. 2A). Dense fascicular

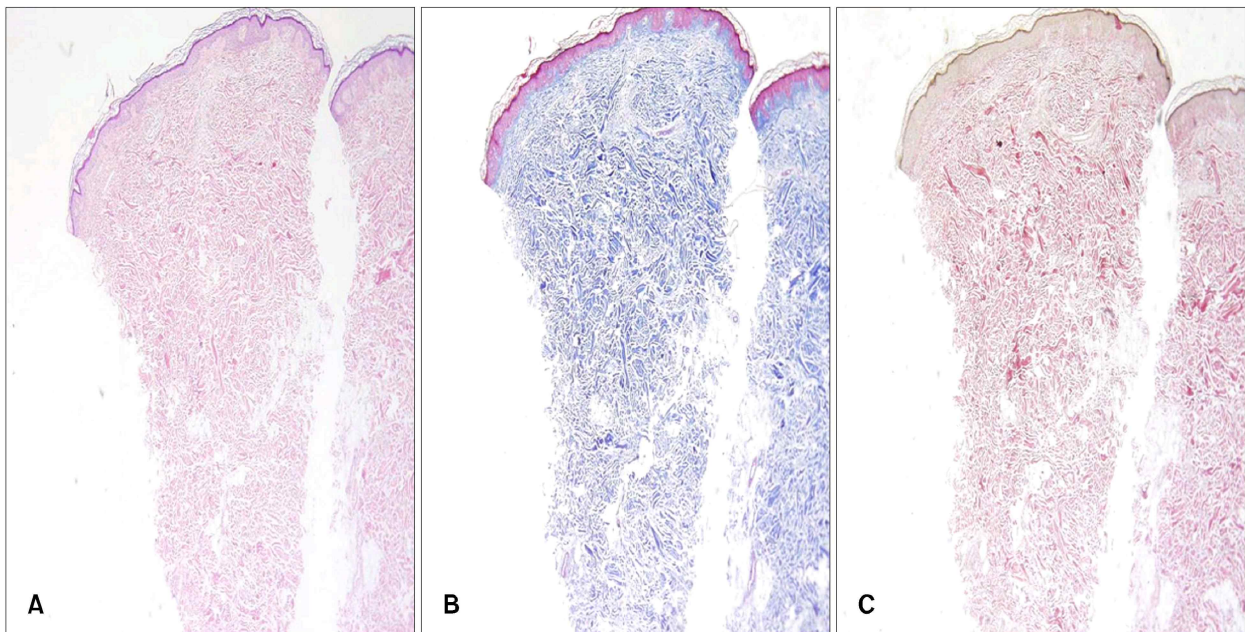


**Fig. 1.** Multiple 3 to 5 mm diameter sized slightly raised, yellowish grouped papules on the left calf.

Received February 28, 2007

Accepted for publication March 6, 2008

**Reprint request to:** Chul Woo Kim, M.D., Department of Dermatology, College of Medicine, Hallym University, 896, Pyeongchon-dong, Dongan-gu, Anyang 431-070, Korea. Tel: 82-31-380-3762, Fax: 82-31-386-3761, E-mail: 937121@hallym.or.kr



**Fig. 2.** (A) Skin biopsy from the left calf revealed slightly homogenized condensed collagen and decreased elastic fibers in the dermis (H&E,  $\times 40$ ). (B) Excessive accumulation of collagen in the dermis (Masson's trichrome stain,  $\times 40$ ). (C) Decreased and fragmented elastic fibers in the dermis (Verhoeff-van Gieson stain,  $\times 40$ ).

bundles of collagen were highlighted by Masson's trichrome (Fig. 2B) and decreased and fragmented elastic fibers were revealed by Verhoeff-van Gieson stain (Fig. 2C). Based on these features, the skin lesion on the left calf was diagnosed as eruptive collagenoma. No specific treatment was given.

## DISCUSSION

Connective tissue nevi of the skin are acquired hamartomatous lesions consisting predominantly of one of the components of the extracellular matrix, namely collagen, elastin, or glycosaminoglycans<sup>1,2</sup>. Among these, collagenomas are connective tissue nevi composed predominantly of collagen<sup>2</sup>. They have been classified as either inherited or acquired. Inherited collagenomas include familial cutaneous collagenoma and Shagreen patch of tuberous sclerosis<sup>2</sup>. Acquired collagenomas contain isolated collagenoma and eruptive collagenoma depending on the number of lesions but they cannot be differentiated clinically<sup>3</sup>.

Eruptive collagenoma appears in the first or second decades as raised, cutaneous nodules or scattered papules on the trunk and arms<sup>4</sup>. The

lesions present as asymptomatic, skin-colored dome-shaped papules as well as nodules of various size but usually less than 1 cm in diameter. And there is no established family history or associated systemic findings<sup>4</sup>.

Histopathologically the lesions are characterized by an excessive accumulation of dense, coarse collagen fibers in the dermis. Elastic fibers appear diminished in number, perhaps representing a dilution phenomenon due to excess collagen accumulation<sup>1,4</sup>.

Eruptive collagenoma should be differentiated from other diseases with focal absence of elastic fibers such as nevus anelasticus and papular elastorrhexis. Nevus anelasticus has been defined as acquired perifollicular papules with a paucity or lack of elastic tissue<sup>5</sup>. Papular elastorrhexis is a variant of nevus anelasticus and it occurs in the twenties as multiple asymptomatic small, white papules scattered over the trunk and extremities with no predilection for the perifollicular areas<sup>6</sup>. Nevus anelasticus and papular elastorrhexis show histologically focal area of decreased and fragmented elastic fibers<sup>6</sup> and most cases are sporadic but some familial occurrence has been described<sup>3</sup>. Some authors have mentioned these three entities represent a single

disease or disease spectrum because of similar clinical and histopathologic features<sup>7-9</sup>. They also have common features in terms of peak age of onset, distribution of lesion involving the trunk and upper extremities, and a lack of history of trauma, inflammation, family history, or extracutaneous manifestations<sup>7</sup>.

The pathogenesis of eruptive collagenoma is unknown. Uitto *et al.*<sup>10</sup> showed that collagenoma almost exclusively consists of type I collagen and the underlying defect seemed to be a reduced production of collagenase in that location, and therefore a decreased local degradation of collagen. And some reports that the growth of collagenoma was influenced during pregnancy or puberty imply that hormone may be involved in the pathogenesis of this disorder<sup>1,11</sup>.

No specific treatment is given in most cases<sup>11</sup>. Two cases of eruptive collagenomas were reported to be treated with intralesional steroids with transient flattening of the lesions<sup>7,9</sup>. Transient but exaggerated dermal atrophy after intralesional steroid injections may have resulted from the absence of elastic fibers in this disorder<sup>9</sup>.

Clinically, our patient's lesion could have been confused with sebaceous hyperplasia, xanthoma and collagen disorder. However, typical elastic fibers supported the diagnosis of collagenoma. In addition to its clinical features, the facts that it was acquired without a family history and associated disorders, were in favor of the diagnosis of eruptive collagenoma. Our case has a different characteristic from the previously reported cases. Nine cases<sup>4,9,11-17</sup>, in the English literature and two cases<sup>18,19</sup> in Korean literature have been reported to date. Most patients developed eruptive collagenoma mainly on the trunk, abdomen and upper extremities, whereas one patient developed lesions localized on the left back<sup>16</sup>. To our knowledge, this is the first report of the eruptive collagenoma localized characteristically on the left calf. But the cause of distribution was not known.

In conclusion, we describe a case of eruptive collagenoma that occurred on the left calf, an area which is seldom affected in isolation.

## REFERENCES

1. Uitto J, Santa Cruz DJ, Eisen AZ. Connective tissue nevi of the skin. *J Am Acad Dermatol* 1980;2:441-261.
2. Pierarad GE, Lapiere CM. Nevi of connective tissue. A reappraisal of their classification. *Am J Dermatopathol* 1985;7:325-333.
3. James WD, Berger TG, Elston DM. *Andrew's diseases of the skin*. 10th ed. Philadelphia: WB Saunders, 2006:608.
4. Smith LR, Bernstein BD. Eruptive collagenoma. *Arch Dermatol* 1978;114:1710-1711.
5. Staricco RG, Mehregan AH. Nevus elasticus and nevus elasticus vascularis. *Arch Dermatol* 1961;84:943-947.
6. Sears JK, Stone MS, Argenyi Z. Papular elastorrhexis: a variant of connective tissue nevus. *Am Acad Dermatol* 1988;29:409-414.
7. Ryder HF, Antaya RJ. Nevus anelasticus, papular elastorrhexis, and eruptive collagenoma. Clinically similar entities with focal absence of elastic fibers in childhood. *Pediatric Dermatology* 2005;22:153-157.
8. Bordas X, Ferrandiz C, Ribera M, Galofre E. Papular elastorrhexis: a variety of nevus anelasticus? *Arch Dermatol* 1987;123:433-434.
9. Lee SH, Park SH, Song KY, Yoon TJ, Kim TH. Papular elastorrhexis in childhood improved by intralesional injections of triamcinolone. *J Dermatol* 2001;28:569-571.
10. Uitto J, Bauer EA, Santa Cruz D, Holtmann B, Eisen AZ. Decreased collagenase production by regional fibroblasts cultured from skin of a patient with connective tissue nevi of the collagen type. *J Invest Dermatol* 1982;78:136-140.
11. McClung AA, Blumberg MA, Huttenbach Y, Colome-Grimmer MI, Raimer SS. Development of collagenomas during pregnancy. *J Am Acad Dermatol* 2005;53(Suppl):150-153.
12. Amaya M, Okubo Y, Koga M. A case of eruptive collagenoma localized on the neck and shoulder. *J Dermatol* 2002;29:79-85.
13. Berberian BB, Wood C. Asymptomatic nodules on the back and abdomen. *Arch Dermatol* 1987;123:811-812.
14. Betti R, Inselvini E, Pazzini C, Moneghini L, Crosti C. Symmetrical, papular, eruptive auricular collagenomas. *J Am Acad Dermatol* 1998;39:363-364.
15. Verrit JL, Leclech C, Trotte N, Hadet M, Francois H. Eruptive collagenoma, apropos of a case with ultrastructural study. *Ann Dermatol Venereol* 1989;116:103-108.

1. Uitto J, Santa Cruz DJ, Eisen AZ. Connective

16. Depadova-Elder S, Mols-Kowalczewski BL, Lambert WC. Multiple connective tissue nevi. *Cutis* 1988; 42:222-224.
  17. Downs AM, Lear JT, Condon CA, Porter H, Kennedt CT. Collagenomas of the skin. *Pediatric Dermatology* 1998;15:269-270.
  18. Lee SH, Cho MY, Lee ES, Myung KB. A case of eruptive collagenoma. *Korean J Dermatol* 1988;26: 729-733.
  19. Kim JE, Park HJ, Lee JY, Cho BK. A case of eruptive collagenoma. *Korean J Dermatol* 2006;44:617-619.
-