

Giant acquired acral fibrokeratoma: A case report

Hend M. Al-Atif

Department of Internal Medicine,
College of Medicine, King Khalid
University, Abha, Saudi Arabia

Abstract

Acquired acral fibrokeratoma (AAF) is a rare benign fibrous tumor. Its size is usually small (*i.e.*, <0.5 cm). However, few cases with giant lesions (*i.e.*, >1 cm) have been reported. A 17-year-old Saudi male presented to the Dermatology Outpatient Clinic of Aseer Central Hospital, Aseer Region, Saudi Arabia, with a painless rounded skin-colored exophytic nodule arising from the dorsal surface of the right middle toe, 1.7 cm in diameter. The tumor was surgically excised. Histopathology examination revealed a giant polyploid lesion, composed of massive hyperkeratosis, acanthosis, a core of thick collagen bundles and vertically oriented small dermal blood vessels. The diagnosis was giant AAF. There was no evidence of recurrence after surgical excision. AAF is a rare benign skin tumor which should be differentiated from other similar skin lesions. Surgical excision is the first line for treatment.

Introduction

Acquired acral fibrokeratoma (AAF) is a rare benign fibrous tumor. It occurs as a solitary lesion, mainly in adults.¹ Since its most frequent locations are the fingers and toes, it was commonly termed *acquired digital fibrokeratoma* (ADFK), although it may also affect the palms and the heels.^{2,3} In cases with AAF, the size of the lesion is usually small (*i.e.*, <0.5 cm). However, few cases with giant lesions (*i.e.*, >1 cm) have been very rarely reported in the literature.⁴⁻⁸ The differential diagnosis for AAF includes *garlic-clove* fibroma, Bowen's disease, exostosis keloid, dermatofibrosarcoma, eccrine poroma, neurofibroma, corn (clavus), cutaneous horn, infantile digital fibromatosis, pyogenic granuloma, ungual and subungual fibroma, verruca, and supernumerary digit.⁹

ADFKs seem to have a slight male predominance. However, very few cases have been described to adequately assess the sig-

nificance of any sex predilection of this tumor type. Reported acquired digital fibrokeratoma cases have occurred in patients from 12 to 70 years of age, with most cases occurring in middle-aged adults.¹⁰ Most patients with acquired digital fibrokeratoma present with an asymptomatic protuberance that gradually increases in size over time.¹¹ Dupré *et al.*¹² described this tumor entity is slightly prominent, well-defined, surrounded by a hyperkeratotic collar, and protruding from the surface of the skin, much like a hernia. The pathophysiology of an acquired digital fibrokeratoma is unknown. Trauma has often been proposed as a predisposing factor for ADFKs, but case histories have not supported this hypothesis.^{13,14} It is presumed that trauma or local factors result in an epidermal interaction and the development of fibroepithelial tumors. The lesions are usually dome-shaped, although they may present as elongated finger-like projections, as in our case. Herein, we report a case of giant acquired acral fibrokeratoma in a Saudi adolescent male.

Case Report

In April 2015, a 17-year-old Saudi male presented to the Dermatology Outpatient Clinic of Aseer Central Hospital, Aseer Region, Saudi Arabia, with a painless rounded skin-colored lump at the dorsum of his right middle toe. The tumor started four months earlier as a very small lesion, but slowly increased in size until it became a source of social embarrassment and personal inconvenience during wearing his shoes. The patient denied exposure to any associated direct trauma to the toes, and he did not receive any treatment for the lesion. Moreover, there were no similar skin lesions in the patient's family. By clinical examination, there was a skin-colored exophytic rounded nodule arising from the dorsal surface of the right middle toe, 1.7 cm in diameter (Figure 1). The patient did not have any other similar lesions. There were no associated chronic diseases or infections.

The tumor was surgically excised. Histopathology examination revealed a giant polyploid section, composed of massive hyperkeratosis, acanthosis, with a core of thick collagen bundles and vertically oriented small dermal blood vessels (Figure 2). Therefore, based on clinical and histopathological findings, the patient was diagnosed as a case of giant acquired acral fibrokeratoma. There was no evidence of recurrence for three years after surgical excision.

Correspondence: Hend M. Al-Atif,
Department of Internal Medicine, College of
Medicine, King Khalid University, Abha,
Saudi Arabia.
Tel. +966555211366.
E-mail: hmsalatif@yahoo.com

Key words: Acquired acral fibrokeratoma;
Tumor; Skin lesion; Histopathology; Saudi
Arabia.

Conflict of interest: the author declares no
potential conflict of interest.

Funding: none.

Ethical statement: written informed consent
was obtained from the patient for publication
of this case report and accompanying images.

Received for publication: 21 June 2019.
Revision received: 30 September 2019.
Accepted for publication: 1 October 2019.

This work is licensed under a Creative
Commons Attribution-NonCommercial 4.0
International License (CC BY-NC 4.0).

©Copyright: the Author(s), 2019

Licensee PAGEPress, Italy
Dermatology Reports 2019; 11:8215
doi:10.4081/dr.2019.8215

Discussion

Our patient was a Saudi male adolescent, who presented with a spontaneous, painless, solitary tumor at the right middle toe that has been progressively growing for the past four months to reach a relatively large size (more than one cm). This presenting picture of AAF is by that reported by Baykal *et al.*,¹⁵ who stated that AAF is almost always solitary, mostly seen in adults, with a slight male predominance. Despite being not painful or tender, AAF in our patient was a cosmetic problem and became more annoying to him while wearing shoes as it increased in size. This is in accordance with that reported by Bron *et al.*⁵ who noted that AAF is more a cosmetically bothersome than a problematic lesion. However, patients with giant AAF on the dorsal surface of their foot may report some discomfort.

The patient denied any history of trauma to the toes associated with his tumor. Nevertheless, Jaiswal and Chatterjee¹⁶ noted that trauma seems to be a contributing factor to AAF. The diagnosis of our patient's lesion was based upon both clinical and histopathological findings. The



Figure 1. Light pink exophytic nodule arising from the dorsal surface of the right middle toe.

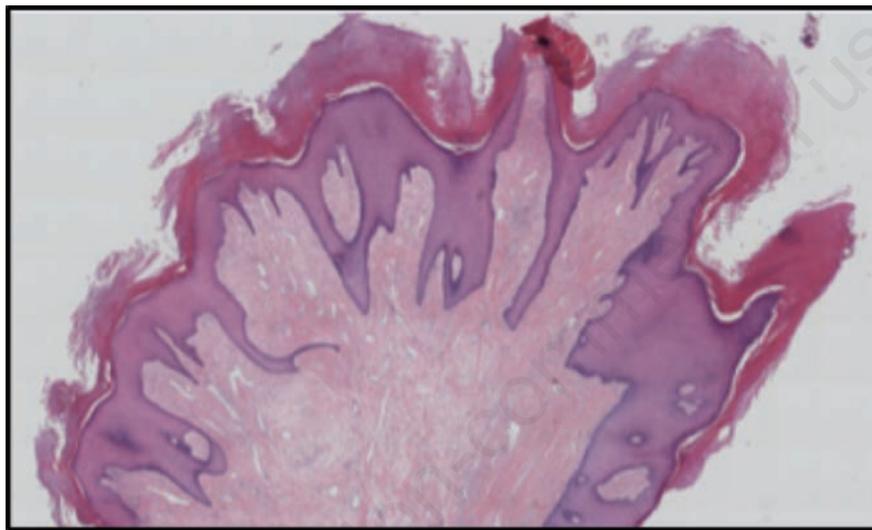


Figure 2. Histopathology of the skin lesion (Hematoxylin and Eosin, $\times 80$) showing a giant polyploid section composed of massive hyperkeratosis, acanthosis, core of thick collagen bundles and vertically oriented small dermal blood vessels.

lesion was treated by surgical excision, and no recurrence was observed within a follow-up period of three years.

Shih *et al.*¹⁷ stated that the diagnosis of AAF needs to be confirmed with an excisional biopsy since several conditions may clinically mimic AAF. Lee *et al.*¹⁸ added that the first line of treatment for AAF is surgical excision of the tumor, with very rare recurrence. To the best of our knowledge, this is the first reported case of acquired acral fibrokeratoma in Saudi

Arabia. Generally, this may be due to the rare incidence of AAF, and also possibly due to the lack of awareness of primary care physicians regarding the diagnosis AAF, which should be differentiated from other skin tumors, particularly, fibroma, cutaneous horn, Koehen's tumor and eccrine poroma.¹⁶ Vinson and Angeloni¹⁹ stated that an important differentiating clinical characteristic of AAF is the presence of a collarette of slightly raised skin around the tumor.

Conclusions

In conclusion, AAF is a rare benign skin tumor which should be differentiated from other similar skin lesions. Awareness of primary care and family physicians should be raised toward the recognition and referral of patients with this tumor. Surgical excision is the first-line treatment of this benign tumor.

References

1. Ali M, Mbah CA, Alwadiya A, et al. Giant fibrokeratoma, a rare soft tissue tumor presenting like an accessory digit, a case report and review of literature. *Int J Surg Case Rep* 2015;10:187-90.
2. Lu YY, Lu CC, Wu CH. Giant digital fibrokeratoma of the finger. *Int J Dermatol* 2013;53:205-7.
3. Boffeli TJ, Abben KW. Acral fibrokeratoma of the foot treated with excision trap door flap closure: a case report. *J Foot Ankle Surg* 2014;53:449-52.
4. Selmanowitz VJ. Acral fibrokeratoma. *Int J Dermatol* 1971;10:166.
5. Bron C, Noël B, Panizzon RG. Giant fibrokeratoma of the heel. *Dermatology* 2004;208:271-2.
6. Cho EA, Lee WS, Kim SY. A case of giant acquired digital fibrokeratoma resembling supernumerary digit. *Kor J Dermatol* 2007;45:319-20.
7. Lencastre A, Richert B. Flat-pan nail-wide acquired epiungual fibrokeratoma: report of 4 cases. *Skin Appendage Disord* 2019;5:111-3.
8. Choi JH. Giant acquired digital fibrokeratoma occurring on the left great toe. *Ann Dermatol* 2011;23:64-6.
9. Tower DE, Hammond JR. Acral fibrokeratoma a rare pedal soft-tissue mass. *J Am Podiatr Med Assoc* 2018;108:172-7.
10. Li S, Li X, Li F, Li B. Acquired digital fibrokeratoma: a case report and review of the literature. *J Surg Dermatol* 2017;2:75-9.
11. Frydman AF, Mercer SE, Kleinerman R, et al. Acquired fibrokeratoma presenting as multiple plantar nodules. *Dermatol Online J* 2010;16:5.
12. Dupré A, Christol B, Bories M. Acquired fibro-keratoma. Report of 8 cases. *Ann Dermatol Venerol* 1977;104:611-5.
13. Kakurai M, Yamada T, Kiyosawa T, et al. Giant acquired digital fibrokeratoma. *J Am Acad Dermatol* 2003;48:S67-8.

14. Kint A, Baran R, De Keyser H. Acquired (digital) fibrokeratoma. *J Am Acad Dermatol* 1985;12:816-21.
15. Baykal C, Buyukbabani N, Yazganoglu KD, et al. Acquired digital fibrokeratoma. *Cutis* 2007;79:129-32.
16. Jaiswal AK, Chatterjee M. Acquired (digital) fibrokeratoma. *Indian J Dermatol Venereol Leprol* 2002;68:179-80.
17. Shih S, Khachemoune A. Acquired digital fibrokeratoma: review of its clinical and dermoscopic features and differential diagnosis. *Int J Dermatol* 2019;58:151-8.
18. Lee CY, Lee KY, Kim KH, et al. Total excision of acquired periungual fibrokeratoma using bilateral proximal nail fold oblique incision for preserving nail matrix. *Dermatol Surg* 2010;36:139-41.
19. Vinson RP, Angeloni VL. Acquired digital fibrokeratoma. *Am Fam Physician* 1995;52:1365-7.

Non-commercial use only