

UC Davis

Dermatology Online Journal

Title

A pedunculated lesion on the foot: acquired fibrokeratoma

Permalink

<https://escholarship.org/uc/item/1q19p8vx>

Journal

Dermatology Online Journal, 23(9)

Authors

Xavier, Marcus Henrique
Sathler Pires, Amalia
Passos Simões, Júlia
et al.

Publication Date

2017

DOI

10.5070/D3239036496

Copyright Information

Copyright 2017 by the author(s). This work is made available under the terms of a Creative Commons Attribution-NonCommercial-NoDerivatives License, available at <https://creativecommons.org/licenses/by-nc-nd/4.0/>

Peer reviewed

A pedunculated lesion on the foot: acquired fibrokeratoma

Marcus Henrique Xavier¹, Amália Sathler Pires¹, Júlia Passos Simões¹, Stéfani Bertolucci Ferreira¹, Cíntia Barros Queiroz¹, Isabel Cristina Gomes², Maurício Buzelin Nunes³

Affiliations: ¹Fundação Hospitalar do estado de Minas Gerais – FHEMIG; Belo Horizonte, MG, Brazil ²Faculdade Ciências Médicas de Minas Gerais – CMMG; Belo Horizonte, MG, Brazil ³Instituto Moacir Junqueira; Belo Horizonte, MG, Brazil

Corresponding Author: Marcus H. Xavier, MD, MsC, 465 Mangabeira Street, Suite 601, Belo Horizonte, MG 30350-170, Brazil, Email: marcus_hx@hotmail.com

Abstract

Acquired fibrokeratomas are benign and uncommon lesions consisting of collagenous papules and nodules covered by hyperkeratotic epidermis. These tumors occur mainly on the fingers and toes and infrequently on the palms and soles. They may possibly be triggered by a reaction to trauma and presents as small and solitary dome-shaped lesions with a collarete of slightly raised skin at the base. Several case reports have been published of this rare lesion, with only a few investigators describing lesions of the feet.

Keywords: acral fibrokeratoma, acquired digital, fibrokeratoma, periungual fibroma

Introduction

The term acquired digital fibrokeratoma (ADF) was first used in 1968 by Bart et al. to describe a set of benign lesions most often located on the digits [1]. Since not all such lesions are on the digits the term acquired fibrokeratoma is suggested as appropriate [2]. Several case reports have been published of this rare lesion, with only a few investigators describing lesions of the feet [3-8].

Case Synopsis

A 34-year-old woman presented with a 3-year history of an asymptomatic pedunculated nodule on the left plantar foot region. The growth had slowly enlarged over the years. The patient reported previous local trauma.

On physical examination, the patient presented a 20

x 10 x 8 mm non-tender, skin colored, pedunculated firm nodule that protruded from her left plantar foot (Figures 1, 2). At the base of the nodule there was a ring of yellow keratin. The clinical impression was cutaneous horn or fibrokeratoma. An excisional biopsy was performed and the specimen was submitted for histopathologic study. Microscopic examination revealed a polypoid lesion with epidermal hyperplasia and focal spongiosis. The bulk of the tumor consisted of collagen fibers perpendicularly arranged, accompanied by chronic inflammatory changes (Figures 3, 4).

The diagnosis of acquired fibrokeratoma was confirmed. The patient had no recurrence six months after the surgical procedure.

Case Discussion

ADF typically presents as a small, solitary, skin-colored papule on the finger or toe. It is often surrounded by a collarette of slightly raised skin called a “moat,” and is usually asymptomatic [1, 2]. Although the term “digital” is used to describe ADF, there have been multiple cases noted in the literature of ADF lesions that presented on the palm, sole, heel, proximal nail fold, dorsum of hand, dorsum of wrist, ankle, and prepatellar region [1-3]. Thus, the term acquired fibrokeratoma is suggested as appropriate [2] and based on the uncommon site and the pedunculated shape, we agree that the name acquired fibrokeratoma or acral fibrokeratoma would be more appropriate than acquired digital fibrokeratoma.



Figure 1, 2. Pedunculated firm nodule that protruded from her left plantar foot.

In most cases, fibrokeratoma occurs in adults, usually located on the digits, following local trauma; there is generally no tendency to involution [9]. It is a benign tumor and almost always solitary, although there are rare reports of multiple plantar lesions [10, 11].

Histologically, fibrokeratomas are benign fibroepithelial tumors marked by a hyperkeratotic

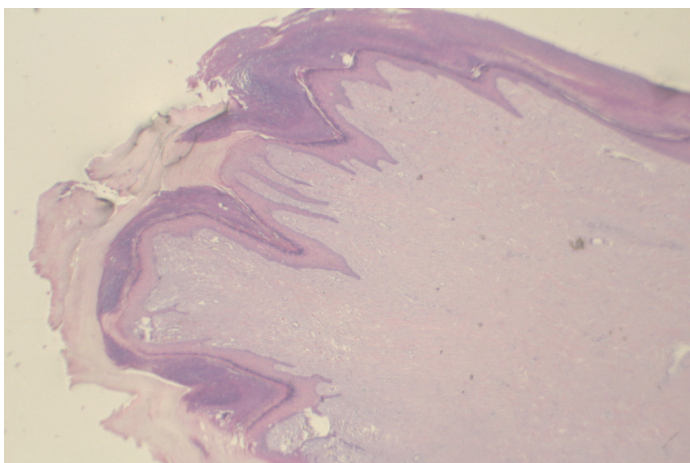


Figure 3. Configuration of the end of the fibrokeratoma. The lingual shape is typical. Note the hyperkeratosis, acanthosis, and hypergranulosis of the epidermis. H&E, _20%.

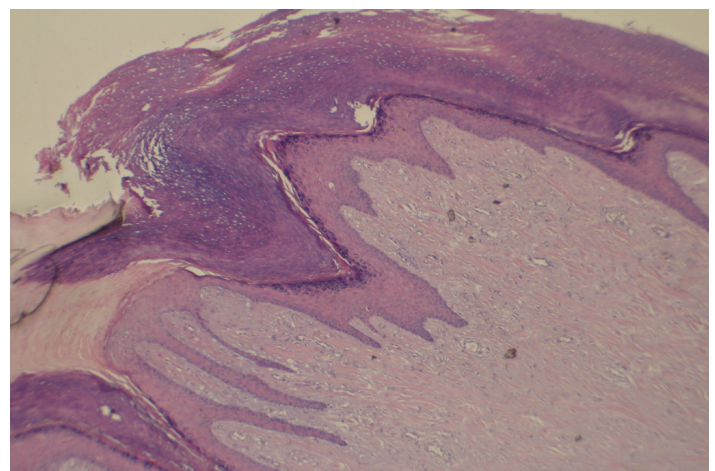


Figure 4. Higher powered view illustrates the thick, interwoven collagen bundles and fibrocytes oriented along the main vertical axis comprising the core of the fibrokeratoma. The overlying acanthotic epidermis which shows no evidence of metaplastic disorganization; and the prominent thickened granular cell layer. H&E, 100%.

and acanthotic epidermis with thickened ridges. In the core are prominent interwoven collagen bundles mostly vertically oriented [9]. Elastic fibers are present but are normally thin and sparse. Many tumors show abundant fine vessels. Some authors consider that this may in fact represent a form of superficial acral fibromyxoma [12].

The lesions located outside the nail apparatus have other conditions in the differential diagnosis such as dermatofibroma, viral wart, supernumerary digit, cutaneous horn, and eccrine poroma [2, 13]. Among the unguis lesions, a supernumerary digit, fibroma, pyogenic granuloma, and Koenen tumor (periungual fibroma associated with tuberous sclerosis) must be included in the differential diagnosis of acquired fibrokeratoma [13, 14].

In supernumerary digits nerve bundles are found. The fibroma does not contain elastin [14]. The pyogenic granuloma consists of capillaries [14]. Dermatofibroma, viral wart, and eccrine poroma have quite particular histopathological characteristics.

When periungual lesions are present on several digits, tuberous sclerosis should be considered [13]. These Koenen tumors or periungual fibromas are observed in approximately 50% of patients with tuberous sclerosis, most often at or after puberty. They are pedunculated, flesh-colored periungual tumors, with a pointed hyperkeratotic tip, which develop underneath the proximal nail fold and rest on the nail plate. It is considered by most authors to be a connective tissue proliferation, containing dilated capillaries and sometimes arteriovenous anastomoses [15]; they have been reported to have "neural or glial" appearance with stellate-shaped cells [16].

However, according to Kint and Baran [15], these tumors did not have a "neural or glial appearance" as was stated by Nickel and Reed [16], and arteriovenous anastomoses cannot be found. It thus appears likely that the Koenen tumor can be considered a particular type of fibrokeratoma [13, 15]. They suggest that periungual fibroma is considered a particular type of fibrokeratoma, which can be subdivided according to its clinical appearance, its location, and its origin.

1. Fibrokeratomas originating from the dermal connective tissue. These are posttraumatic or appear spontaneously and are located on the fingers (acquired digital fibrokeratoma).

2. Fibrokeratomas originating from the proximal nail fold or the surrounding connective tissue. They are located in the nail fold and can be congenital (tuberous sclerosis) or acquired (for example, garlic-clove fibroma).

Finally, it is important to remember the most common unguis tumor, squamous cell carcinoma. Its characteristic clinical finding is subungual hyperkeratosis it may present as a pseudofibrokeratoma, thus reinforcing the need for histopathological study [13, 17].

Conclusion

Our case report reinforces that the term fibrokeratoma is more appropriate than ADF, since these lesions have been shown to occur in non-digital locations. Also, we believe that such an unusual presentation should be considered in the differential diagnosis of other plantar lesions and the histopathological diagnosis is confirmatory.

References

1. Bart RS, Andrade R, Kopf AW, Leider M. Acquired digital fibrokeratomas. *Arch Dermatol.* 1968 Feb. 97(2):120-9. [PMID: 5636043].
2. Verallo VV. Acquired digital fibrokeratomas. *Br J Dermatol.* 1968 Nov;80(11):730-6. [PMID: 5696520].
3. Cooper PH, Mackel SE. Acquired fibrokeratoma of the heel. *Arch Dermatol.* 1985 Mar;121(3):386-8. [PMID: 3977361].
4. Spitalny AD, Lavery LA. Acquired fibrokeratoma of the heel. *J Foot Surg.* 1992 Sep-Oct;31(5):509-11. [PMID: 1430834].
5. Bron C, Noël B, Panizzon RG. Giant fibrokeratoma of the heel. *Dermatology.* 2004;208(3):271-2. [PMID: 15118387].
6. de Freitas PM, de Sb Xavier MH, Pereira GB, Rochael MC, de Oliveira Cortes JL, Quevedo LP, Araripe AA Jr. Acquired fibrokeratoma presenting as a giant pedunculated lesion on the heel. *Dermatol Online J.* 2008 Dec 15;14(12):10. [PMID: 19265623].
7. Zakopoulou N, Bokotas C, Frangoulis M, Karypidis D, Hatzilou E, Papadopoulos O. Giant tumour of the heel: acquired fibrokeratoma. *Clin Exp Dermatol.* 2009 Jul;34(5):605-6. [PMID: 19486037].
8. Boffeli TJ, Abben KW. Acral fibrokeratoma of the foot treated with excision and trap door flap closure: a case report. *J Foot Ankle Surg.* 2014 Jul-Aug;53(4):449-52. [PMID: 24268767].
9. Heenam PJ. Tumors of fibrous tissue involving the skin. In: Elder DE, Elenitsas R, Johnson BL, Murphy GF, editors. *Lever's Histopathology of the skin.* 9th ed. Lippincott Williams & Wilkins; 2005. p994.
10. Frydman AF, Mercer SE, Kleinerman R, Yanofsky VR, Birge MB. Acquired fibrokeratoma presenting as multiple plantar nodules. *Dermatol Online J.* 2010 Oct 15;16(10):5. [PMID: 21062599].
11. Qiao, J., Y.H. Liu, and K. Fang, Acquired digital fibrokeratoma

- associated with cyclosporine treatment. *Clin Exp Dermatol*, 2009. 34(2): p. 257-9. [PMID: 19187308].
12. Guitart J, Ramirez J, Laskin WB. Cellular digital fibromas: what about superficial acral fibromyxoma? *J Cutan Pathol* 2006;33:762–763. [PMID:17083699].
 13. De Berker DA, Richert B, Baran R. Acquired Disorders of the Nails and Nail Unit. In: Griffiths C, Barker J, Bleiker T, Chalmers R, Creamer D, editors. *Rook's Textbook of Dermatology*. 9th ed. New Jersey: Wiley Blackwell; 2016. pp. 95.1–95.66.
 14. Kint A, Baran R, De Keyser H. Acquired (digital) fibrokeratoma. *J Am Acad Dermatol*. 1985 May;12(5 Pt 1):816-21. [PMID: 4008685].
 15. Kint A, Baran R. Histopathologic study of Koenen tumors. Are they different from acquired digital fibrokeratoma? *J Am Acad Dermatol*. 1988 Feb;18(2 Pt 1):369-72.[PMID: 3346418].
 16. Nickel WR, Reed WB. Tuberous sclerosis. Special reference to the microscopic alterations in the cutaneous hamartomas. *Arch Dermatol*. 1962 Feb;85:209-26. [PMID: 14479476].
 17. Baran R, Perrin C. Pseudo-fibrokeratoma of the nail apparatus with melanocytic pigmentation: a clue for diagnosing Bowen's disease. *Acta Derm Venereol*. 1994 Nov;74(6):449-50. [PMID: 7701877].