Acquired Digital Fibrokeratoma

Can Baykal, MD; Nesimi Buyukbabani, MD; K. Didem Yazganoglu, MD; Ebru Saglik, MD

Acquired digital fibrokeratoma (ADF) is an uncommon benign tumor of fibrous tissue that presents as smooth, dome-shaped or fingerlike, flesh-colored papules that are mostly located on the distal extremities. As it can easily be misdiagnosed for other common benign lesions such as viral warts, which usually are not subject to routine histopathologic examination, it might be underreported. We report 13 patients with ADF diagnosed in our clinic in the past 4½ years.

Cutis. 2007;79:129-132.

Acquired digital fibrokeratoma (ADF) is a benign tumor of fibrous tissue first described by Bart et al[1] in 1968. While the etiology is unknown, trauma has been suggested to be a predisposing factor, but a history of trauma is lacking in most of the cases.[2-4] ADF usually presents as asymptomatic, solitary, smooth, dome-shaped or fingerlike, flesh-colored papules that are mostly located on the distal extremities.[3,4] ADF is a dermoepidermal tumor that is covered by an orthokeratotic or hyperkeratotic, papillomatous, acanthotic epidermis, with an underlying connective tissue proliferation.[5]

In the past 4½ years, we have diagnosed 13 cases of ADF with typical clinical features confirmed by histopathologic examination. We retrospectively analyzed the clinicopathologic features of these cases. The frequency and differential diagnosis of ADF are elaborated in this report.

Case Reports

The characteristic features of our 13 patients with ADF are summarized in the Table. The diagnosis was made clinicopathologically in all cases. All patients were men and their ages ranged from 10 to 75 years (mean age, 37.3±20.7 years). The lesions were mostly located on the hands (9 on the fingers, 1 on the dorsal aspect of the hand, and 1 on the palm); 1 tumor was located on the elbow and 1 on the foot (Figure 1).

Comment

Although there are some case series on ADF in the medical literature,[2,5] the total number of cases is low. Kint et al[2] examined 50 ADF lesions in 21 females and 29 males, with an average age of 40 years (age range, 12–77 years). The largest case series in Turkey, comprising 6 males, was reported by Köse et al[6] in 2001. We clinically diagnosed 13 cases of ADF in our clinic in 4½ years. The diagnosis was confirmed with histopathologic examination in all cases (Figure 2). ADF more often is seen in men than women.[7] The average age of onset is 40 years.[7] The mean age of our patients was younger than 40 years. All patients in our series were men and 5 patients were older than 40 years.

ADF usually is a solitary, smooth, dome-shaped or fingerlike, flesh-colored papule. It may be sessile or pedunculated, some may have a hyperkeratotic or verruciform surface, and less commonly it may present as a giant lesion.[3,4,8] A collarette of slightly raised skin at the base of the lesion is an auxiliary differentiating feature.[3,4] In the series of Kint et al,[2] 39 lesions were located on the fingers, 2 on the palms, 1 on the dorsal aspect of the hand, 1 on the calf, 1 on the dorsal aspect of the wrist, and 6 on the toes. All of the lesions were solitary. In our series, 9 lesions were located on the fingers, 1 on the dorsal aspect of the hand, 1 on the palm, 1 on the elbow, and 1 on the foot. Although the tumor is called digital fibrokeratoma, different sites of the body other than fingers, such as the palm, dorsum of the hand, wrist, calf, toe, sole, and prepatellar area, also may be involved.[2,4]

Verruca vulgaris, supernumerary digit, Koenen tumor, pyogenic granuloma, eccrine poroma, cutaneous horn, acrochordons, and neurofibromas are the common lesions that cause difficulty in the clinical differential diagnosis.[3,4,7] Verruca vulgaris frequently exhibits a mamillated surface. Supernumerary digit usually is present at birth,

Accepted for publication April 29, 2005.

Drs. Baykal, Yazganoglu, and Saglik are from the Department of Dermatology and Dr. Buyukbabani is from the Department of Pathology, all from the Istanbul Medical Faculty, Istanbul University, Çapa, Turkey.

The authors report no conflict of interest.

Reprints: Can Baykal, MD, Istanbul Universitesi, Istanbul Tıp Fakültesi, Dermatoloji Anabilim Dalı, 34093 Çapa, Istanbul, Turkey (e-mail: baykalc@istanbul.edu.tr).

Characteristic Features of Patients With Acquired Digital Fibrokeratoma*

Patient No.	Sex	Age, y	Location	Clinical Type	Histopathologic Type	Treatment
1	M	10	Fourth finger, volar aspect	Dome shaped	Dome shaped/fingerlike	Excision
2	M	16	Third finger, volar aspect	Fingerlike	Fingerlike	Excision
3	M	22	Palm	Dome shaped	Dome shaped	Excision
4	M	26	Fourth finger, dorsal aspect	Fingerlike	Dome shaped/fingerlike	Excision
5	M	26	Elbow	Dome shaped	Fingerlike	Excision
6	M	27	First finger, dorsal aspect	Dome shaped	Dome shaped/fingerlike	Excision
7	M	28	Hand, dorsal aspect	Fingerlike	Dome shaped	Excision
8	M	31	Second finger, dorsal aspect	Dome shaped	Dome shaped/fingerlike	Excision
9	M	45	Fourth finger, volar aspect	Fingerlike	Fingerlike	Excision
10	M	47	Fifth finger, lateral aspect	Fingerlike	Fingerlike	Excision
11	M	66	Second finger, lateral aspect	Dome shaped	Dome shaped/fingerlike	Excision
12	M	66	Foot, lateral aspect	Dome shaped	Dome shaped	Excision
13	M	75	Second finger, periungual region	Dome shaped	Dome shaped	Excision

*M indicates male.

located at the base of the fifth finger, and histologically contains abundant nerve bundles.[2,3] Both verruca vulgaris and supernumerary digit lack the epidermal collarette seen in ADF.[3,4] Koenen tumors, which are thought to be a variant of ADF,[9] usually are seen as numerous lesions on the periungual region of fingers and toes, and patients usually have other signs of tuberous sclerosis.[4] Pyogenic granuloma has an epidermal collarette like ADF but is friable and has a sudden onset.[2] Acrochordons usually present as multiple lesions in intertriginous surfaces.

The histopathologic appearance of ADF is distinct. In their series, Kint et al[2] described 3 histopathologic variants of the tumor. Thick, dense, closely packed collagen bundles that are mostly irregularly arranged or sometimes oriented in the vertical axis of the lesion containing fibroblasts, numerous capillaries, and thin elastic fibers are features usually seen in dome-shaped tumors. The structure is similar to that of the underlying healthy connective tissue. In the other variant, which is clinically seen as tall and hyperkeratotic lesions, collagen bundles are thick, closely packed,

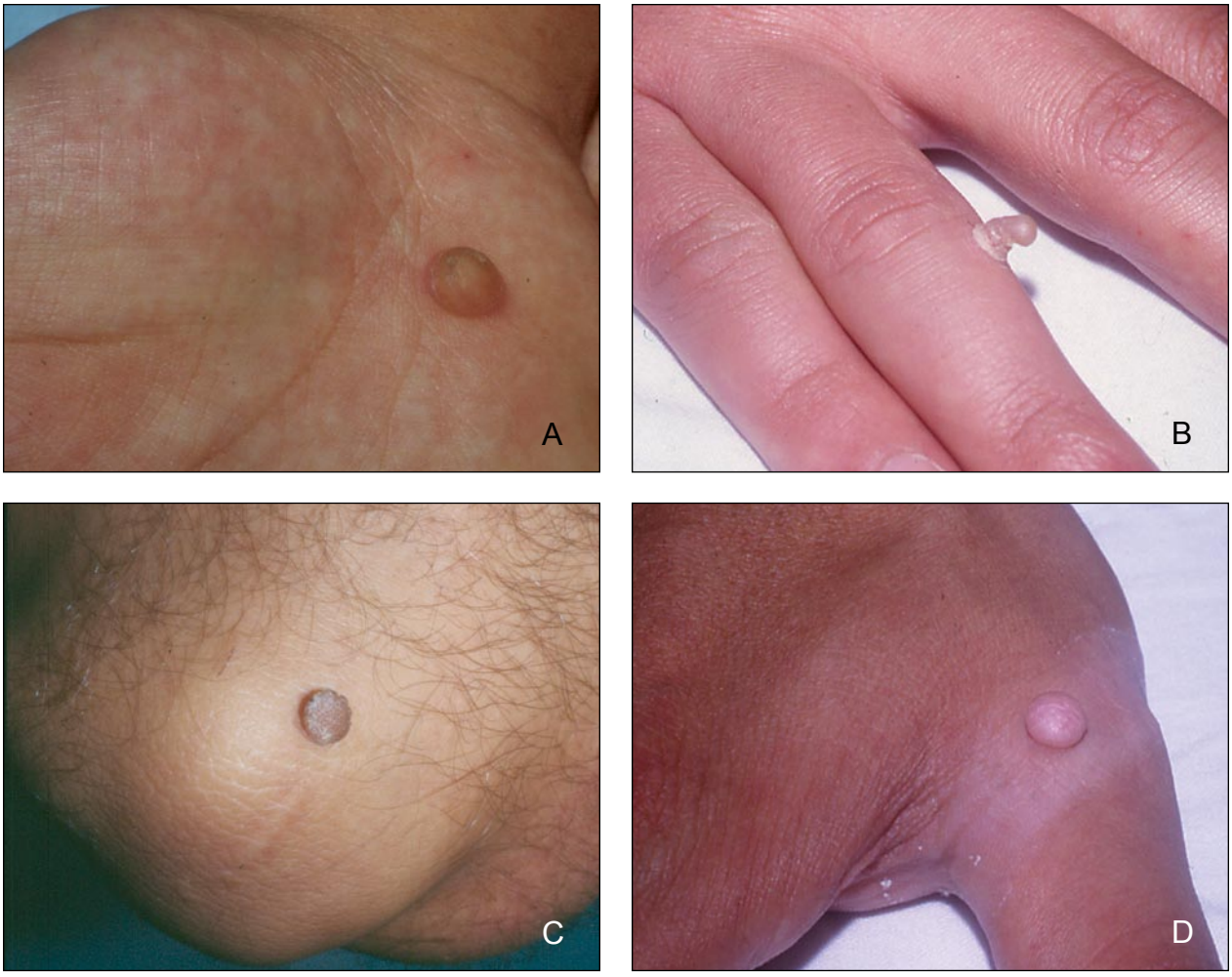

Figure 1. Acquired digital fibrokeratomas on the palm (A), dorsal aspect of the fourth finger (B), elbow (C), and dorsal aspect of the first finger (D).

and oriented along the main vertical axis of the tumor. The number of the elastic fibers is decreased, while the fibroblasts are increased. The structure is not similar to that of the underlying healthy connective tissue. The last variant is clinically seen as flat to dome-shaped lesions that show very thin, few, irregularly arranged collagen bundles containing a few fibroblasts and lacking elastic fibers in edematous structure.[2]

According to the histopathologic classification established by Kint et al,[2] 4 patients showed dome-shaped and 4 patients showed fingerlike (tall and hyperkeratotic) features. However, unlike the classification of Kint et al,[2] 5 patients showed both dome-shaped and fingerlike features. As these cases show characteristics of both types, the classification seems to be artificial and the small nuances in the clinical and histopathologic features may represent different stages in the evolution of the tumor. Because the lesions are mostly located on sites subject to trauma, this factor may play an important role in the varying clinicopathologic features.

ADF does not regress spontaneously.[3] Surgical excision is curative,[2-4] but the tumor can recur.[7] Excision was performed in all of our cases. Two patients were followed for 1 and 2 years, respectively, without recurrence.

Conclusion

In the past 4½ years, we diagnosed 13 cases of ADF. Although there are few reported cases in the medical literature, we think the frequency of this tumor is underestimated, which could explain why ADF easily can be misdiagnosed for a number of common benign lesions that do not need routine histopathologic examination. Dome-shaped or projectile tumors of extremities should be evaluated for ADF.

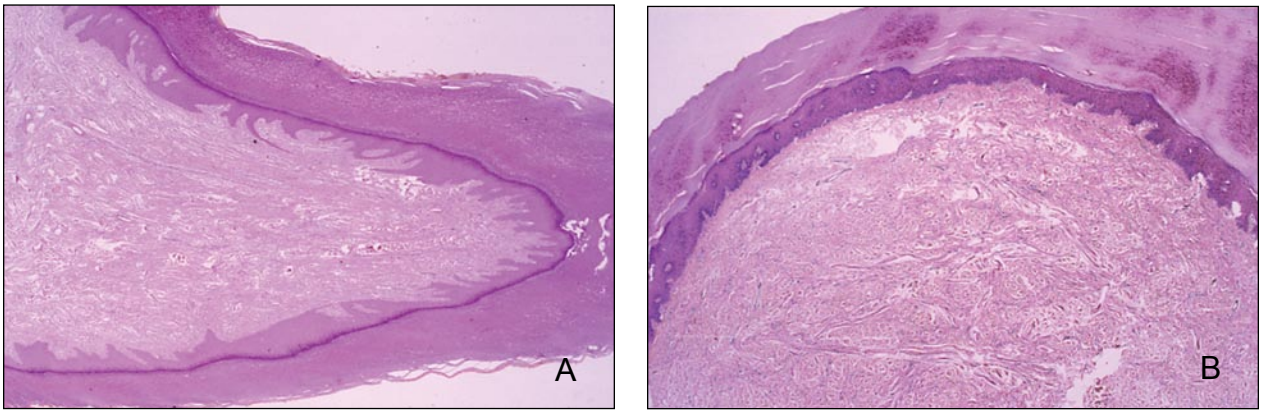

Figure 2. Histopathologic images of a fingerlike (A) and dome-shaped acquired digital fibrokeratoma (B)(H&E, original magnifications ×40).

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