A Case of Digital Myxoid Cyst Coexisting with Epidermal Inclusion Cyst

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A 62-year-old male developed a solitary asymptomatic nodule on the lateral aspect of the distal interphalangeal joint of the right great toe. Histopathologic findings demonstrated a myxoid cyst with a concomitant epidermal inclusion cyst. To the best of our knowledge, this is the first case of concurrent occurrence of digital myxoid cyst and epidermal inclusion cyst. Although the exact mechanism for developing a digital myxoid cyst and an epidermal inclusion cyst simultaneously at the same site is not explained, trauma might be a possible cause.
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Key Words: Digital myxoid cyst, Epidermal inclusion cyst, Co-occurrence

INTRODUCTION

Digital myxoid cysts are characterized by soft, dome shaped nodules typically found on the proximal nail fold of the fingers and infrequently on toes. The origin of digital myxoid cysts is controversial, with some authors believing them as a synovial cyst from interphalangeal joint space while others believe them to be a degenerative lesion of the fibroblasts[1]. Epidermal inclusion cysts are the most common cutaneous cysts occurring primarily on any hair-bearing areas. However epidermal inclusion cysts in nonfollicular regions, such as the palms or soles, may complicate as a result of penetrating trauma to the skin[2].

Herein, we report an extremely rare case of concurrent occurrence of digital myxoid cyst and epidermal inclusion cyst on the lateral aspect of the great toe.

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CASE REPORT

A 62-year-old man was referred to our department with a 3-month history of a solitary, painless and non-tender nodule located on the lateral aspect of the distal interphalangeal joint of right great toe (Fig. 1). The pricking of the lesion caused drainage of clear and gelatinous materials. His medical and family history were noncontributory. Although the patient had no history of accidental injury, further inquiry revealed that he had had frequent picking habits since the first appearance of the lesion. 2 months prior to his visit, he had had the lesion treated with CO_2 laser at a local clinic, but the lesion recurred soon after. The histological examination revealed an intradermal cyst lined by true epidermis and was surrounded by multiple clefts and loose connective tissues (Fig. 2A). The cyst was filled with horny materials arranged in laminated layers. Another cystic structure in the dermis was noticed on further section. The surrounding clefts and the loose connective tissues of the dermis contained abundant hyaluronic acid, which was highlightened with Alcian blue 2.5 (Fig. 2B) and colloidal iron (Fig. 2C). Histologic diagnosis of myxoid cyst and concomitant epidermal inclusion cyst were made. The remaining lesion after the skin biopsy was electrodesiccated and no recurrence has

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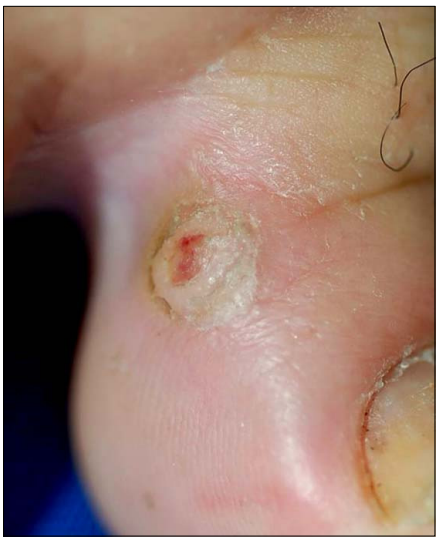

Fig. 1. Solitary dome-shaped nodule measuring 0.8×0.9 cm on the lateral aspect of distal phalanx of the great toe.

been noted 8 weeks thereafter.

DISCUSSION

Digital myxoid cysts are solitary, skin-colored or translucent, round to oval, fluctuant cysts on the dorsal or lateral aspects of the fingers or toes. Histologically, multiple clefts or loose connective tissues which contain abundant acid mucopolysaccarides are seen in the dermis without epithelial lining. There are two types of digital myxoid cysts: myxomatous and ganglion[3,4]. In the ganglion type, mucous material derives from the joint fluid of the interphalangeal joint. The origin of the gelatinous material from joint fluid is supported by observation of communication between cyst and joint by means of methylene blue injection or MRI imaging[5,6]. In the myxomatous type, cysts occur independently of

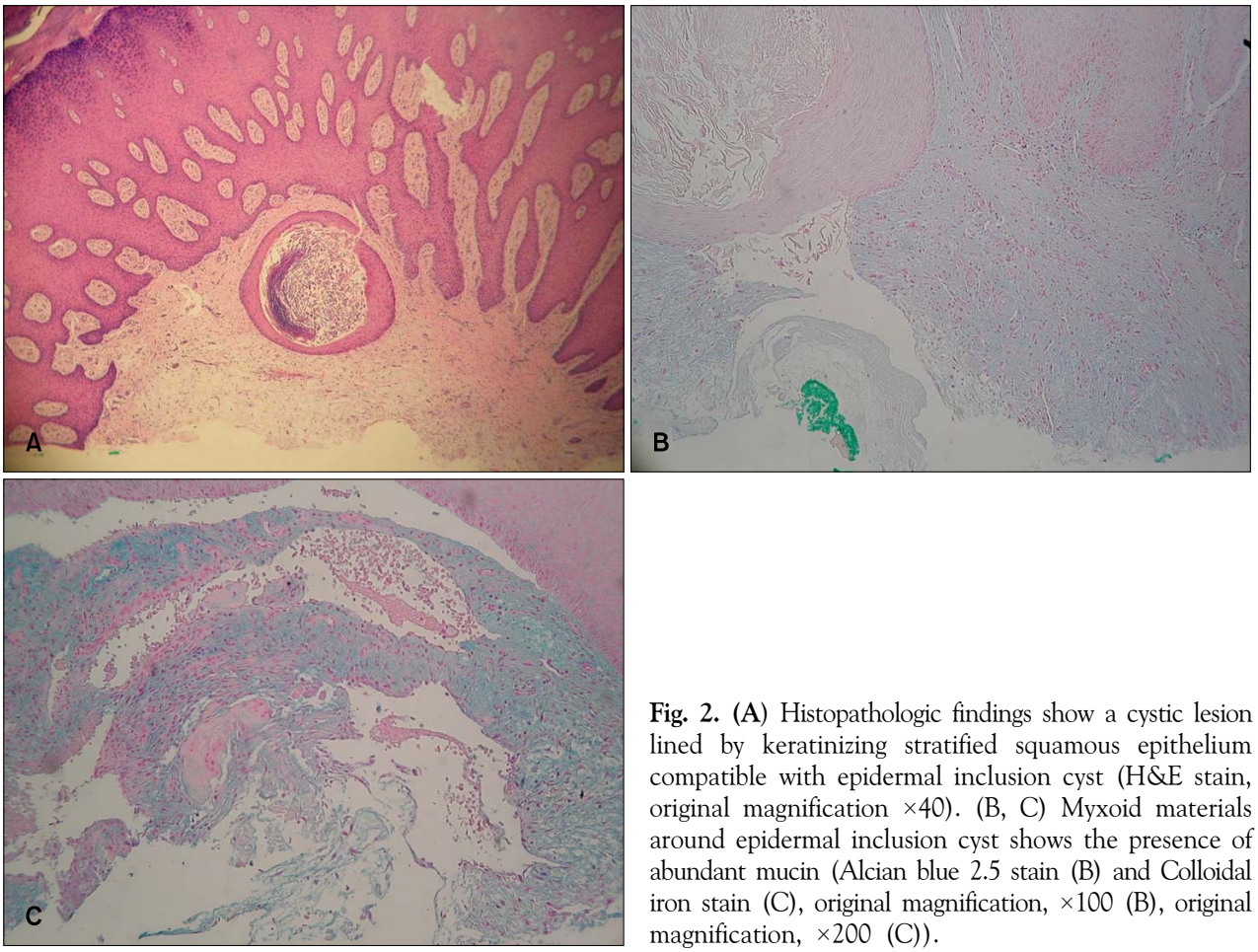

Fig. 2. (A) Histopathologic findings show a cystic lesion lined by keratinizing stratified squamous epithelium compatible with epidermal inclusion cyst (H&E stain, original magnification ×40). (B, C) Myxoid materials around epidermal inclusion cyst shows the presence of abundant mucin (Alcian blue 2.5 stain (B) and Colloidal iron stain (C), original magnification, ×100 (B), original magnification, ×200 (C)).

the joint as a result of proliferation of fibroblasts overproducing hyaluronic acid[7]. This process may be analogous to local accumulation of mucinous materials in cutaneous focal mucinosis[8]. In both types, trauma and chronic pressure has been associated with the cyst formation[9].

Epidermal inclusion cysts are the most common cutaneous cysts. They can arise anywhere on the skin, but they occur most frequently on the face, scalp, neck and trunk. Most epidermal inclusion cysts develop spontaneously in the follicular regions or result from inflammation around a pilosebaceous follicle. Most spontaneously developing epidermal inclusion cysts arise from the follicular infundibulum. Some may be originated from implantation of a fragment of epidermis by trauma, especially in palms, fingers and soles[10].

Although the etiology of digital myxoid cyst and epidermal inclusion cyst is still under debate, trauma or chronic pressure has been associated with cyst formation in both types of cyst[2,9]. Therefore it is possible that the primary formation of the epidermal inclusion cyst is a result of the accidental trauma and the patient's frequent picking may have led the fibroblasts to overproduce hyauronic acid, forming a secondary myxoid cyst. Another possibility is that some kind of injury accompanied by minor inflammation, unnoticed by the patient, may have led to the development of both myxoid cyst and epidermal inclusion cyst. However, we prefer the former possibility, because since the first appearance of the lesion the patient complained of clear and gelatinous materials on squeezing.

Different types of cutaneous cysts originating from 2 or more components of the pilosebaceous units can arise within the same lesion. There have been some reports of epidermal inclusion cyst combined with other benign tumors such as trichilemmal cyst, apocrine hidrocytoma and pilomatricoma[11]. There has been only one case reported of simultaneous epidermal inclusion cyst and mucocele in the lower labial mucosa[12]. Since both cysts share a common traumatic etiologic, they might develop concurrently at the same site. However, to the best of our knowledge, there has been no previous report of concomitant occurrence of digital myxoid cyst and epidermal inclusion cyst.

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