A Case of Hybrid Cyst: A Combined Epidermal and Trichilemmal Cyst

Sang Hun Lee, M.D., Eun Ju Park, M.D., Chul Woo Kim, M.D., Kwang Ho Kim, M.D., Ph.D., Kwang Joong Kim, M.D., Ph.D.

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

A hybrid cyst is a rare cystic lesion that includes more than two distinctive components of a pilosebaceous unit. There are clinical similarities between an epidermal cyst and trichilemmal cyst, but histological features are quite different. Herein, we describe a patient with a nodule on his right shoulder, showing combined histological features of both an epidermal and trichilemmal cyst. The upper part of the cystic wall was composed of flattened squamous cells with a granular layer, but the lower part was composed of larger squamous cells showing trichilemmal keratinization without a granular layer, and a sharp transition from the epidermal to trichilemmal area was observed. To our knowledge, this is the first report of a hybrid cyst in Korean literature. (Ann Dermatol 17(2) 89~91, 2005)

Key Words: Hybrid cyst, Epidermal cyst, Trichilemmal cyst

INTRODUCTION

An epidermal cyst shows epidermal keratinization, and a trichilemmal cyst shows keratinization similar to that which normally occurs in the isthmus of the trichilemma, the outer root sheath of the hair follicle. A hybrid cyst was first described by McGavran et al.[1] in 1966 as a cystic tumor that was a combination of an infundibular and trichilemmal cyst, and later, Requena et al.[2] reported that a hybrid cyst should contain any cyst arising from a pilosebaceous unit. We report a case of a hybrid cyst, a combined epidermal and trichilemmal cyst, for the first time in Korea.

CASE REPORT

A 46-year-old male presented with 2-3 month history of a nodule on his right shoulder of several months duration. He had no remarkable past or family history. Clinical examination revealed a brownish, dome-shaped, pea-sized cystic nodule on the right shoulder. The nodule was totally resected under local anesthesia. The histological examination revealed a cystic tumor in the dermis (Fig. 1). The upper portion of the cystic wall was composed of stratified squamous cells which became elongated and flattened as they approached the lumen, and there was a granular layer. In addition, the keratin formed was loosely laminated (Fig. 2). The lower portion of the cystic wall was composed of larger,

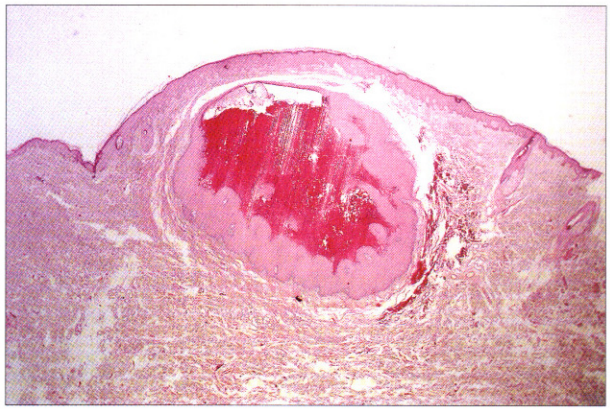

Fig. 1. A cystic tumor in the dermis (H&E, ×20).

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Reprint request to: Kwang Ho Kim M.D., Department of Dermatology, Hallym University Sacred Heart Hospital, 896 Pyungchon-dong, Dongan-gu, Anyang 431-070, Korea.
Tel. 82-31-380-3763, Fax: 82-31-386-3761
E-mail. dermakkh@yahoo.co.kr

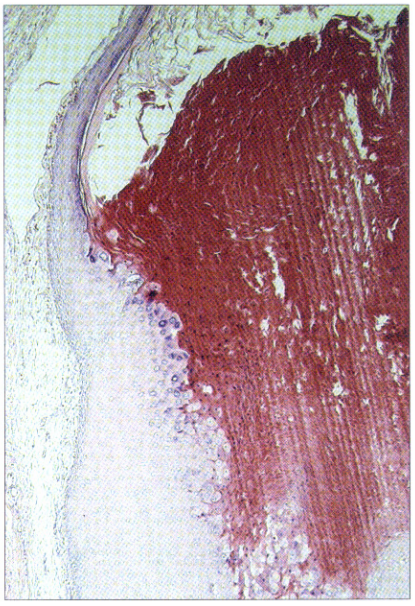

Fig. 2. The upper part of the cystic wall was composed of flattened squamous cells with a granular layer, and the lower part of the cyst wall was composed of larger squamous cells showing trichilemmal keratinization (H&E, ×100).

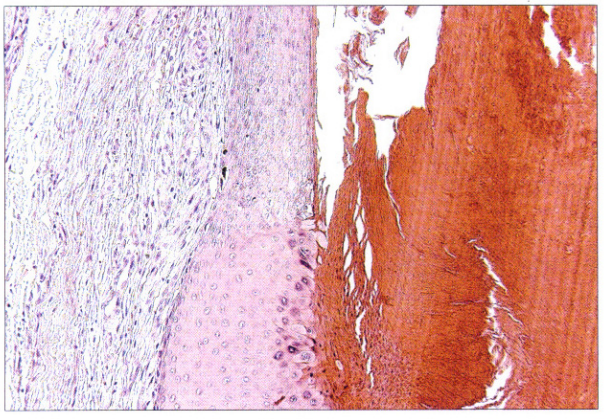

Fig. 3. Transition from the epidermal to trichilemmal areas was observed (H&E, ×200).

pale-stained stratified squamous cells which showed trichilemmal keratinization with a scarce or absent granular layer (Fig. 2). There was an abrupt transition from the epidermal to trichilemmal area (Fig. 3). These observations indicated the diagnosis of a hybrid cyst composed of an epidermal and trichilemmal cyst.

DISCUSSION

McGavran et al.[1] reported the hybrid cyst for the first time in 1966, and later, Brownstein et al.[3] reported seven cases of hybrid cysts, in which the upper part near the epidermis was an infundibular cyst and the deeper part was a trichilemmal cyst. The original concept of hybrid cyst by McGavran et al.[1] was a combination of an infundibular and trichilemmal cyst, however, the idea of a hybrid cyst has been expanded to a cystic structure including more than two of the pilosebaceous units[2]. Now, the follicular hybrid cyst includes a hybrid epidermal and trichilemmal cyst, pilomatricoma and epidermal cyst, pilomatricoma and trichilemmal cyst, eruptive vellus hair cyst and steatocystoma, eruptive vellus hair cyst and trichilemmal cyst, and epidermal cyst and apocrine hidrocystoma[4]. Takeda et al.[5] reviewed the cases of hybrid cysts in Japan. The most frequent histological type was the combination of an infundibular and trichilemmal cyst (nine out of fifteen cases, 60.0%), and this type predominantly occurred on the scalp and face (six out of nine cases, 66.7%). We think that there are some cases of hybrid cyst composed of epidermal and trichilemmal cysts in Korea too, but there has been no report in the Korean dermatologic literature. This may be because they have been passed off as epidermal or trichilemmal cysts, without special mention of having both features.

An epidermal cyst is a slow-growing, keratin-containing cyst lined by true epidermis composed of several layers of stratified squamous epithelium, and is the result of the proliferation of surface epidermal cells within the dermis. Most epidermal cysts arise spontaneously on hair-bearing areas including the face, neck, chest, and upper back, but occasionally they also occur on the palms or soles, or form as the result of trauma. There are some hypotheses about the origin of epidermal cysts, which include arising from occlusion of pilosebaceous follicles or from implantation of epidermal cells into the dermis following penetration injury[6]. A trichilemmal cyst is a keratin-containing cyst, most commonly located on the scalp. The wall of a trichilemmal cyst is lined with epidermal cells that tend to be cuboidal, and have indistinct intercellular bridges. Squamous epithelium undergoes abrupt homogeneous keratinization without the interposition of a granular layer. Under electron microscopic examination, the keratinized cells are filled with tonofilaments and, unlike

those in epidermal cysts, retain their desmosomal connections[1]. Recently, Ohnishi et al.[7] have confirmed that the cytokeratin profile of epidermal cysts is the same as the follicular infundibulum, and immunophenotypes of cytokeratin expression in trichilemmal cysts are identical to those in the outer root sheath between the lower infundibulum and isthmus. These observations show a meaningful linkage between the two most common types of follicular cysts and support the case that most spontaneously arising epidermal cysts are related to the follicular infundibulum, and in the case of trichilemmal cysts, related to the follicular isthmus.

In summary, we report a case of a hybrid cyst which occurred on the shoulder of a patient and was a combined epidermal and trichilemmal cyst. We suggest that clinicians should remember the concept of hybrid cysts, and studying then will be helpful in understanding the pathogenesis of pilosebaceous tumors.

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