

# An Epidermoid Cyst with Seborrhic Verruca-like Cyst wall Showing Incidental Acantholysis

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A 37-year-old female was presented with an epidermal cyst on her lower back. Histopathologic examination was consistent with an epidermoid cyst with seborrhic verruca-like cyst wall and acantholytic change was also found in the cyst wall. Human papillomavirus(HPV)-specific DNA sequences in paraffin-embedded tissue section were not detected by polymerase chain reaction using HPV consensus primers.

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Epidermoid cysts are the commonest of all cysts. Several authors reported the changes of cyst wall. Those changes are grouped into malignant proliferations, benign proliferations, keratinization disorders and viral infections<sup>1</sup>. We report a case of benign proliferation of epidermoid cyst which shows seborrhic keratosis-like proliferation. Additionally, we found acantholytic changes in several areas of the cyst wall. By using polymerase chain reaction(PCR), we found the proliferative change was not associated with human papillomavirus(HPV) infection as a verrucous cyst.

## CASE REPORT

A 37-year-old female was presented with a 5-year history of an asymptomatic, slowly growing mass on her lower back. There was no history of local trauma or irritation. Physical examination showed a fingertip sized, nontender subcutaneous nodule on her lower back. The patient was otherwise

in good health. Excisional biopsy was done and the specimen showed normal epidermis and a dermal cystic lesion lined by stratified squamous epithelium. The lining epithelium showed epidermoid maturation with formation of granular cell layers. The cystic cavity was filled with massive orthokeratin material. The change of cyst wall resembled seborrhic keratosis, that is, acanthotic and hyperkeratotic. Several horn cysts and a few squamous eddies were observed in the cyst wall(Fig. 1). But HPV-related changes such as hypergranulosis with large, irregular keratohyaline granules, and koilocytotic change were not observed. In addition to proliferative change of the cyst wall, focal acantholysis was seen in the upper portion of the cyst wall(Fig. 3). HPV-specific DNA sequences in paraffin-embedded tissue section were not detected by the polymerase chain reaction(PCR) using HPV consensus primers.

## DISCUSSION

Epidermoid cyst with a seborrhic verruca-like cyst wall(ECS) is a benign proliferation of epidermoid cyst and the wall shows seborrhic keratosis and verruca-like changes<sup>1</sup>. Our case showed acanthosis, hyperkeratosis, multiple horn cysts and squamous eddies which were characteristically seen in the seborrhic keratosis. The pathogenesis of ECS is not clear. Rhabari<sup>2</sup> suggested that the same factors inducing a seborrhic verruca in the skin of

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**Fig. 1.** Intradermal cyst shows stratified squamous epithelial lining and several horn cysts (arrows). Squamous eddies (arrowheads), in the cyst wall are shown in the inset. (H&E,  $\times 5$ ; inset  $\times 50$ ).

the middle-aged and the elderly also induce the squamous epithelium of these epidermoid cysts to become papillomatous and verrucous. But Chun and Im<sup>3</sup> suggested that its pathogenesis may have been a nevoid change or may be related to a mechanical factor. There are several reports<sup>4,5</sup> about the relationship between HPV and epidermoid cyst, especially verrucous cyst. Verrucous cyst is regarded as an epidermoid cyst whose wall is proliferated by HPV infection and has similar histopathologic features with ECS. Though HPV genomes were demonstrated by PCR in the verrucous cyst<sup>4</sup>, there was no report in ECS. And also, we could not find HPV DNA products in the PCR.

Interestingly, in addition to this proliferative change of the cyst wall, several foci of acantholysis were seen in the upper portion of the cyst wall. Sanchez et al<sup>6</sup> reported that incidental acantholysis was found in 14 out of 9000 cutaneous specimens (0.15%) either within the lesion or in the adjacent normal skin. They classified the lesions into 5 patterns: Darier's disease, Hailey-Hailey disease, pemphigus vulgaris, superficial pemphigus and unclassified pattern. According to their description, our case belongs to an unclassified pattern. The incidental acantholytic finding in various skin lesions may represent an unusual reaction of the epidermis to various associated conditions, rather than a specific histological entity<sup>7</sup>. Takami and Yamada<sup>8</sup> reported two cases with acantholysis in the seborrhic keratosis and concluded their lesions could be a rare variant of irritated seborrhic

**Fig. 2.** Formation of the intraepidermal clefts with floating acantholytic cells (arrows) in the upper portion of the cyst wall. (H&E,  $\times 200$ ).

keratosis, even though they found no history of friction, trauma, medical treatment or particular aggravation in either case. Though our case is not a seborrhic keratosis of surface epidermis, but cyst wall has similar features with seborrhic keratosis. Therefore, similarly, although there was no vivid history of irritation, a mechanical factor probably contributed to the formation of incidental acantholysis in our case. Conclusively, because the lesion was located in the lower back which was prone to pressure or irritation, presence of squamous eddies which was regarded as the result of irritation in irritated type of seborrhic keratosis<sup>9</sup>, and no HPV genomes were found in PCR, we suspect that changes seen in the cyst wall, such as epithelial proliferation and acantholysis, were related to the mechanical factors.

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