# A Case of Multiple Basal Cell Carcinomas

Hong Seok Yoon, M.D., Soo Nam Kim, M.D.

*Department of Dermatology, College of Medicine, Korea University*
*Seoul, Korea*

**The multifactorial etiology of BCC(basal cell carcinoma) are incompletely understood, including factors leading to multiple lesions in some patients. Cases of multiple BCCs reported in the literature have been associated with UV irradiation, inorganic arsenic poisoning, X-ray therapy, hematologic malignancy and several genodermatoses such as nevoid BCC syndrome, albinism, xeroderma pigmentosum. Multiple BCCs presented on the sun-protected areas, lacking predisposing risk factors which have been known, is rare skin condition. However, it suggests that there may be an unknown genetic susceptibility to the development of multiple BCCs.**

**We report a rare case of multiple BCCs, which had developed only on the sun-protected areas in 64-year-old man, without any known predisposing causes.**

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*Key Words* : Multiple basal cell carcinomas, Sun-protected areas

Basal cell carcinoma(BCC) is by far the most common cutaneous tumor and usually occurs after the age of fifty years, as a single lesion, mainly on the sun-exposed areas.[1] Its incidence is rising and some patients develop multiple primary tumors at separate sites.[2] Although UV exposure is believed to be a principle risk factor, both the etiology and pathogenesis of BCC are largely unknown, including factors leading to multiple BCCs in some patients. Many predisposing factors associated with multiple BCC (chronic actinic damage, inorganic arsenic poisoning, several genodermatoses(e.g., nevoid BCC syndrome, Bazex syndrome, albinism and xeroderma pigmentosum), hematologic malignancy, X-ray irradiation and chronic lymphedema) have been reported.[3-5] But there have been few reports on patients with multiple BCCs lacking other clinical manifestation or strong predisposing factors.

Herein we report a case of multiple BCC, which had developed only on the sun-protected areas and followed by rapidly developed new lesions, in a 64-year-old Korean man who has no risk factor to develop BCC except for gender and old age. We could not find any predisposing factors associated with multiple BCCs in this patient.

## CASE REPORT

A 64-year-old Korean man visited our department, with a complaint of multiple, variable-sized, papules distributed on the right axilla, lower back, and pubis. He states that all of the lesions have developed within the past two months and were asymptomatic. His general condition was good and skin type was grade 4. He had no history of excess sun-light exposure, arsenic intake, irradiation, herbal medication or preexisting dermatoses. He had no family history of skin cancer. On examining the patient, two dusky violaceous colored, oval-shaped papules having firm consistency were found on his right axilla (Fig. 1) and a solitary,

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**Reprint request to** : Soo-Nam Kim, M.D., Department of Dermatology, Korea University Anam Hospital, #126-1, 5-Ga Anam-dong, Sungbuk-gu, 136-705, Seoul Korea.
Tel) (02)920-5470
Fax) (02)928-7540
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dome-shaped, crusted nodule was found on his coccygeal area (Fig. 2), and a papule on the pubis (Fig. 3). There was no regional lymph node enlargement or other cutaneous lesions. CBC, urinanalysis, liver function test, chest X-ray and EKG were within normal limits or negative. All four lesions were excised with free resection margin. Histopathologic examination revealed that these corresponded to solid types of basal cell carcinoma (Fig. 4a, 4b, 4c). Forty-five days later, he revisited with a new papular lesion developed on the pubis. This lesion was located apart from the previous BCC on the pubis. It measured 1.0x0.5 cm and showed violaceous color. It was also excised with free resection margin and was diagnosed as solid type of BCC. Six-months later, another two papular lesions have developed on his left neck and right axilla. The lesions were excised again and confirmed as BCCs. Total number of BCCs were seven and the patient remains under close observation.

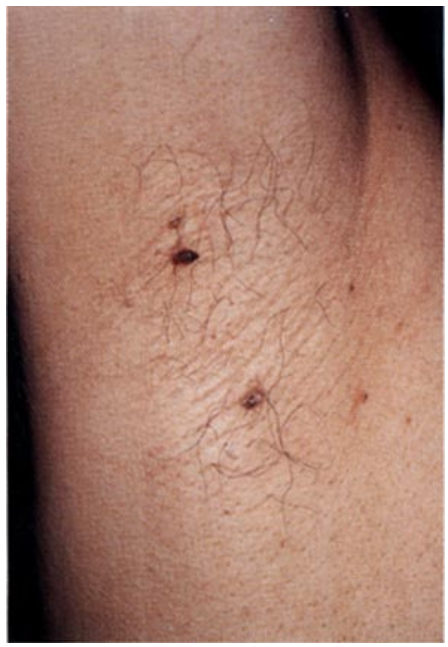

Fig. 1. Asymptomatic two well-defined, dome-shaped, dusky and violaceous-colored papules on the right axilla.

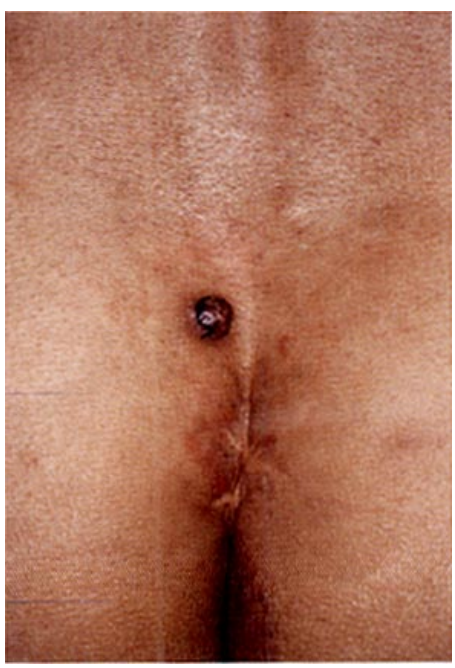

Fig. 2. A solitary, well-defined, dome-shaped, dusky and reddish nodule on the coccygeal area.

## DISCUSSION

Over the past decade, significant increases in the incidence of BCC have been observed worldwide as well as in Korea.[6] At present, BCC has become the most common cutaneous malignant tumor in Korea.[6] UV exposure is believed to be a principle risk factor for development of BCC and other recognized risk factors include actinic keratoses, freckling, increasing age, skin type 1, male gender, red/blonde hair and family history of BCC.[7] In our case, the patient has two risk factors(old age, male gender). BCC usually occurs as a single lesion and up to 85 percent of basal cell carcinomas are found in the head and neck region [7], but the lesions can also develop as multiple, or in sites that are not usually exposed to sunlight or artificial ultraviolet radiation, such as axilla, groin, penis, scrotum, vulva, breast, nipple, palm, foot, nail and mouth.[8-9]

Although many predisposing factors have been

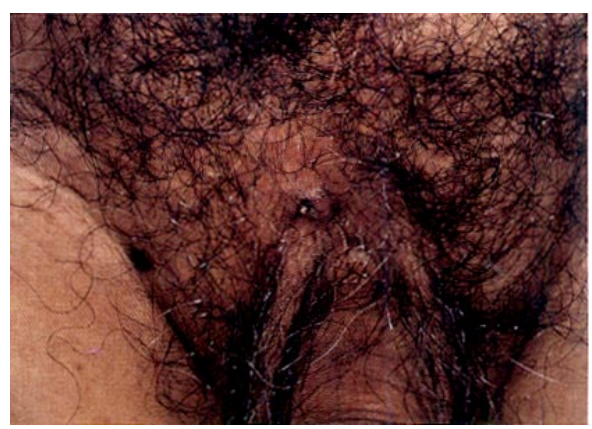

Fig. 3. A solitary, crusted, round papule on the pubis.

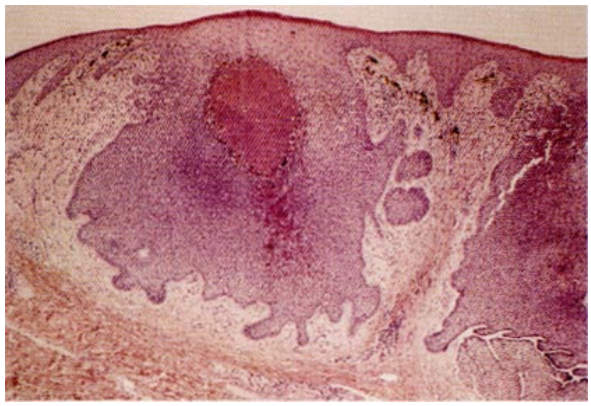

Fig. 4a. Histopathologic finding of papule on the right axilla showed well-defined tumor masses with variable shapes and sizes, originating from the epidermis to the mid-dermis. There was central necrosis in largest tumor (H&E stain, ×40).

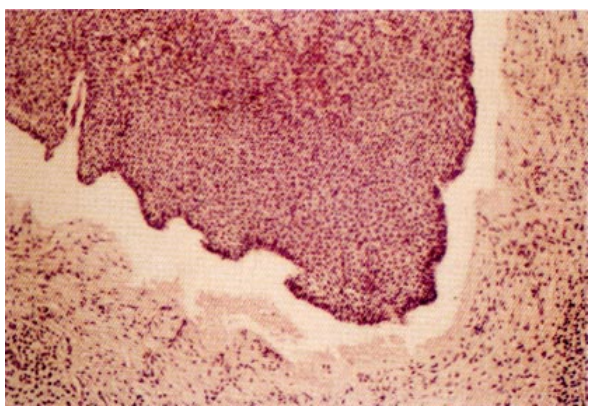

Fig. 4b. Well-defined, large tumor mass with cystic degeneration in the dermis. Biopsy was performed on the coccygeal area (H&E stain, ×40).

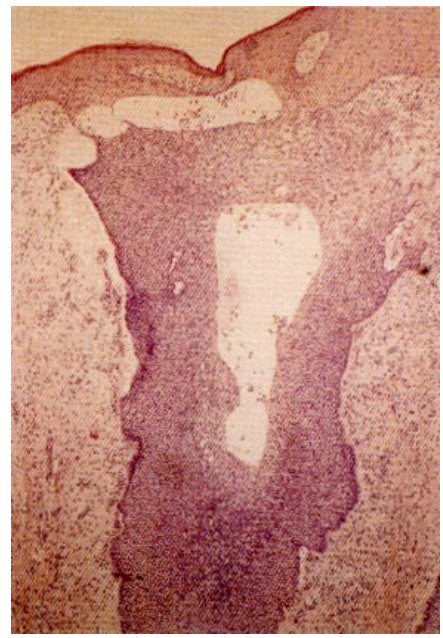

Fig. 4c. High-power field of histopathologic finding of papule on the pubis showing basaloid tumor cells, peripheral palisading and cleft formation surrounding the tumor (H&E stain, ×100).

reported, patients with multiple BCCs lacking other clinical manifestation of genodermatoses associated with multiple BCCs, or other known predisposing factors are increasing. In one study to elucidate possible risk factors for developing multiple BCC, authors suggest that the presence of skin tumor in the family and sunburn after age 60 are independent factors associated with multiple BCC.[2] While the relationship between solar radiation or artificial UV radiation and the development of BCCs is well established, the occurrence of these tumors in relatively sun-protected areas suggest the existence of less recognized etiologic factors including genetic predisposition, the systemic effect of UV radiation in decreasing cell-mediated immune system, a system known to be important in tumor surveillance, and immunosuppression.[11]

In previous studies about multiple BCCs without any predisposing factors, using serologic tissue typing methods, an increase in the frequency of HLA-DR1 or a decrease in DR4 had been described. However, in a study by Emtestam et al, this has been refuted using cDNA-PCR.[12] Recently point mutations of the human homologue of the *Drosophilia* segment polarity gene *patched* (PTCH) had been detected in the nevoid BCC syndrome, as well as in one-third of sporadic BCCs.[13] In 1997, Lear et al found that a truncal tumor site is associated with a high risk of multiple BCCs and is influenced by polymorphisms of detoxifying enzyme such as glutathione S-transferase and cytochrome P450.[14] These observations support the hypothesis that factors other than UV irradiation or chemical carcinogens may influence the pathogenesis of BCC. However, the functional effects of these alterations have not yet been demonstrated.

Patients with a history of BCC require life-long follow-up because of the high probability of new BCCs developing.[15] Lear et al found that patients with a truncal BCC at first presentation, especially males and those presenting with more than one

lesion have a significantly decreased time to presentation of further tumors and should receive more meticulous follow-up, and detoxifying enzyme polymorphisms also influences the rate of new primary tumor accrual.[16] Also, compared with the general population, patients with a history of basal cell carcinoma are at increased risk of melanoma and squamous cell carcinoma.[17] Therefore regular total cutaneous examinations have been advocated to detect new tumors and to ensure that atypical presentations of BCC are not misdiagnosed in at-risk individuals.

In summary, our case of multiple BCCs, which had developed only on the sun-protected areas without any apparent predisposing causes and followed by subsequent primary lesions shortly thereafter, is a rare skin condition especially in Korean people. Although further laboratory investigations were not performed to detect other etiologic factors, we presumed that the patient might have genetic susceptibility to the development of multiple BCCs and periodic full skin examination will be mandatory for early detection of other tumors.

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