

CASE REPORT

Basal Cell Carcinoma on the Pubic Area: Report of a Case and Review of 19 Korean Cases of BCC from Non-sun-exposed Areas

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Basal cell carcinoma (BCC) is one of the most commonly diagnosed malignant skin tumors and develops characteristically on sun-exposed areas, such as the head and neck. Ultraviolet light exposure is an important etiologic factor in BCCs, and BCCs arising from non-sun-exposed areas are, therefore, very rare. In particular, the axilla, nipple, the genital and perianal areas are not likely to be exposed to ultraviolet light; thus, if BCC develops in these areas, other predisposing factors should be considered. Herein, we report a case of BCC arising on the pubic area in a 70-year-old man. We also performed a survey of the literature and discussed the 19 cases of BCC from non-sun-exposed areas reported to date in Korea. (*Ann Dermatol* 23(3) 405~408, 2011)

-Keyword-

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INTRODUCTION

Basal cell carcinoma (BCC) is the most common malignant

neoplasm of the skin. BCCs develop characteristically on sun-exposed areas, with about 85% of reported cases occurring either on the head or neck¹. Nevertheless, this carcinoma can arise, albeit rarely, in non-sun-exposed areas, such as the axilla, nipple, and the genital and perianal areas^{2,3}. BCCs of the pubic area are exceedingly rare, i.e. about 0.05% of all BCCs².

In this report, we describe a 70-year-old man who developed a BCC on the pubic area and we review previous case reports of BCC on the non-sun-exposed areas from Korea.

CASE REPORT

A 70-year-old man was referred to our clinic from a local hospital. He presented with a painful brown-to-gray-colored nodule on his right pubic area that he had had for 4 years. The skin lesion was growing and had become prominent in the previous 4 months, causing pain and bleeding. He had a history of hypertension, diabetes mellitus, and surgical intervention for benign prostatic hyperplasia. There was no medical history of sexually transmitted diseases, radiotherapy, chemical (arsenic or tar) exposure, or trauma to the genital area. There was no remarkable family history of skin disease or skin cancer. Physical examination revealed a 3.0×2.5 cm tender, brown, crusted nodule, with a gray-colored patch on the right pubic area (Fig. 1). An incisional biopsy was performed, as the preliminary diagnosis was skin cancer, such as squamous cell carcinoma or melanoma. Microscopically, retraction spaces were observed between the tumor islands and the surrounding stroma, and mucin-containing cystic spaces were present in the center of the tumor islands. The tumor was composed of basaloid cells,

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Fig. 1. Brown crusted nodules of various sizes, with a gray patch on the right pubic area.

with peripheral palisading and peritumoral lacunae between the tumor mass and interstitial stroma. These histological findings were compatible with nodular BCC (Fig. 2). Preoperative blood analysis included white cell count, platelet count, red blood cell count, and hepatic and renal biochemical profiles. They were all within normal limits. We performed a positron emission tomography-computed tomography (PET-CT) scan to determine if the metastatic lesions were present, but no metastatic lesions were found.

The tumor was totally excised by Mohs micrographic surgery, and the skin defect was reconstructed using a local flap. After removal of the tumor, there was no evidence of either local recurrence or metastasis during the 36-month follow-up period.

DISCUSSION

Chronic exposure to ultraviolet light (UVL) is an important predisposing factor for BCC, and more than 80% of BCCs are found in sun-exposed areas of the body, such as the face. Consequently, BCCs of the non-sun-exposed areas, such as axilla, nipple, or the genital and perianal areas are extremely rare. LeSueur et al.⁴ investigated 10,000 BCCs and only 15 axillary BCCs (0.05%) were identified. With regard to the BCCs of the nipple, less than 30 cases were reported in the world⁵. Gibson and Ahmed² reported 36 genital BCCs (0.2%) and 15 perianal BCCs (0.08%) out of a total of 18,943 investigated BCCs. Ten of the 36 genital BCCs occurred in the pubic area, representing 0.05% of the cases studied. Given that these regions are usually well-covered and not exposed to sunlight, other etiologic factors should be considered when a patient presents with a BCC of the non-sun-exposed areas. These factors include

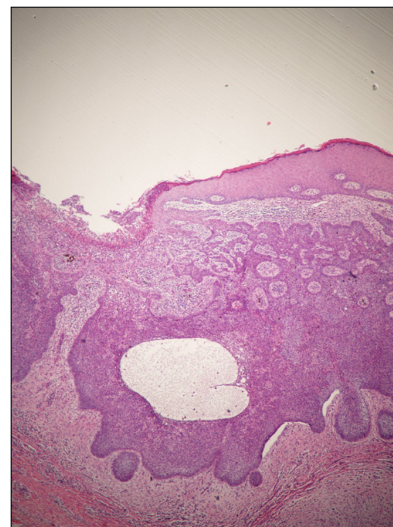


Fig. 2. Microscopic view of islands of cells, with peripheral palisading and haphazard arrangement of the more centrally located cells. Retraction spaces are present between the tumor islands and the surrounding stroma. Mucin-containing cystic spaces are visible at the centers of the tumor islands (H&E, $\times 40$).

radiation therapy, alterations in immune surveillance, exposure to coal tar or arsenics, sexually transmitted diseases, burns, traumatic scars, and chronic skin irritation due to chronic dermatologic conditions, such as chronic dermatitis⁶. Prior to this case report, only 18 cases of BCCs from non-sun-exposed area had been reported in Korea. There were 11 cases of genital BCCs, 5 cases of axillary BCCs, 2 cases of nipple BCCs and no case of perianal BCC. Only two cases of scrotal BCC due to trauma have been reported so far (Choi et al.⁷ and Park et al.⁸); however, no other etiologic factors have been determined in the rest of Korean cases of BCCs on the non-sun-exposed area reported thus far, as was the case in our study (Table 1)^{5,7-19}.

According to Betti et al.²⁰ and Bastiaens et al.²¹, different histologic subtypes of BCC can be found at different anatomical sites. Thus, nodular BCC predominantly occurs on the head and neck, while superficial BCC occurs mainly on the trunk. Meanwhile, LeSueur et al.⁴ reported that the most frequent histopathologic type of BCC in the axilla was the nodular type (67%), and the other reported types were superficial (20%) and micronodular (13%). Of the 5 cases of axillary BCCs reported in Korea to date, 2 were of the pigmented type, 1 was of the nodular type, 1 was of the basosquamous type, and 1 was of the adenoid type. Of the 2 cases of nipple BCC reported in Korea, one was pigmented and the other was nodular type. Gibson and Ahmed² reported that the most frequent histopathologic type of BCC in the perianal and genital regions was the

Table 1. Reported cases of basal cell carcinoma on the non-sun-exposed areas in Korean case literature and present case

Authors	Age	Sex	Site	Duration	Factors*	Size (cm)	Histologic type	Treatment	Clinical course	F/U period	Meta [†]
Choi et al. ⁷ (2002)	66	M	Scrotum	5 yrs	Trauma	1.5×1.3	Pigmented	Excision	No recurrence	NA [†]	None
Park et al. ⁸ (2006)	83	M	Scrotum	2 yrs	Trauma	2.6×2.8, 0.7×1.0, 0.4×0.6	Nodular	Excision	No recurrence	NA [†]	None
Jeon et al. ⁹ (2006)	68	M	Scrotum	2 yrs	None	2.5	Nodular	None	NA [†]	NA [†]	None
Kim et al. ¹⁰ (1994)	67	M	Scrotum	5 yrs	None	2.5×2.5	Nodular	Excision	NA [†]	NA [†]	None
Kim et al. ¹⁰ (1994)	43	F	Vulva	8 yrs	None	2.0×3.0	Nodular	Curettage	NA [†]	NA [†]	None
Kim et al. ¹¹ (1988)	49	F	Vulva	20 yrs	None	1×0.8×0.6	Nodular	Excision	NA [†]	NA [†]	None
Lee et al. ¹² (2002)	73	F	Vulva	3 yrs	None	0.5×1.0	Nodular	Excision	No recurrence	2 yrs	None
Lee et al. ¹² (2002)	75	F	Vulva	10 yrs	None	1.0×2.5	Infiltrative	Excision	No recurrence	2 yrs	None
Kwon et al. ¹³ (2003)	51	F	Vulva	2 yrs	None	2×2×1.5	Adenoid	Excision	No recurrence	NA [†]	None
Ryu et al. ¹⁴ (2008)	43	F	Vulva	NA [†]	None	3.5×1.0	Superficial	Excision	No recurrence	1 yr	None
Lee et al. ¹⁵ (2004)	76	M	Penis	4 yrs	None	1.3×1.3	Nodular	Excision	No recurrence	4 months	None
Choi et al. ¹⁶ (2006)	85	M	Axilla	NA [†]	None	2.5×1.0	Nodular	Excision	No recurrence	1 yr	None
Choi et al. ¹⁶ (2006)	62	M	Axilla	1 yr	None	NA [†]	Basosquamous	Excision	No recurrence	6 months	None
Choi et al. ¹⁶ (2006)	35	M	Axilla	5 yrs	None	NA [†]	Pigmented	Excision	No recurrence	1 yr	None
Lee et al. ¹⁷ (2007)	67	M	Axilla	1 yr	None	2.0×0.5	Pigmented	Excision	No recurrence	1 yr	None
Kim et al. ¹⁸ (2008)	33	F	Axilla	7 months	None	1.0×0.8×1.5	Adenoid	Excision	No recurrence	NA [†]	None
Kim et al. ⁵ (2006)	73	M	Nipple	2 yrs	None	Bean sized	Pigmented	None	NA [†]	NA [†]	None
Kim JH. ¹⁹ (2007)	73	M	Nipple	2 yrs	None	2.0×1.0	Nodular	Mastectomy with ALND [§]	NA [†]	NA [†]	None
Present case	70	M	Pubic area	4 yrs	None	3.0×2.5	Nodular	Excision	No recurrence	3 yrs	None

*Considered etiologic factors, [†]NA: not available, [†]Metastasis at the time of diagnosis, [§]ALND: axillary lymph node dissection.

nodular type (66%), followed by the superficial (18%), infiltrative (8%), micronodular (4%), basosquamous (2%) and fibroepithelioma of Pinkus (2%). Of the 12 genital BCC cases reported in Korea (including this case report), 8 were of the nodular type, 1 was of the superficial type, 1 was of the infiltrative type, 1 was of the pigmented type, and 1 was of the adenoid type. Thus, the majority of genital BCC cases reported in Korea were histopathologically of the nodular type. Overall, the most common histopathologic type of BCC on the non-sun-exposed areas was the nodular type (53%), followed by pigmented (21%), adenoid (11%), infiltrative (5%), superficial (5%), and basosquamous type (5%) (Table 1).

The risk factors for BCC recurrence include the time from the lesion's appearance, the size larger than 2 cm, lesions with a previous history of therapeutic management, and histologically infiltrative, micronodular, or morpheaform lesions³. In the 19 cases of BCCs of non-sun-exposed area reported in the Korean literature (including this case report), the average size of the tumor was about 2.0 cm (range: 0.6~3.5 cm), and the average time since the tumor developed was 4.5 years (range: 7 months~20 years). However, none of the cases reported in Korea

recurred or metastasized at the time of diagnosis. Dermatological lesions in the non-sun-exposed areas tend to be neglected by patients, because these regions are the least exposed areas of the human body. Thus, tumors on such sites may be larger and have been present for longer than tumors located in other parts of the body.

The usual treatment for BCC is wide excision; the 5-year recurrence rate after wide excision of BCCs, with clear excisional margins, is 3 to 14%.

Other treatment options for BCCs are Mohs micrographic surgery, curettage and electrodesiccation, cryosurgery, radiation, or photodynamic therapy with aminolevulinic acid²². Mohs micrographic surgery is a specialized surgical procedure, commonly used in patients who present with large tumors, high-risk morphea-type BCC tumors, recurrent tumors, or tumors located in cosmetically sensitive locations, such as the face. However, in general, surgical excision is preferred to the Mohs micrographic surgery, as the latter procedure requires specialized training, a longer operating time, and increased costs²².

In conclusion, the BCCs arising from the non-sun-exposed areas may be larger and may have been present for longer than those arising from other areas of the body. Also,

physicians might initially mistake these cancers for either inflammatory or infectious disease^{2,23}. It is recommended that physicians must consider the skin cancer as a one of the differential diagnosis and biopsy of all suspect lesions should be performed, even if the BCC at these regions can sometimes seem innocuous.

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