

# Basal Cell Carcinoma of the Scrotum

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Basal cell carcinoma (BCC) is the most common malignant skin cancer, consisting of 70-75% of all malignant tumors of the skin. Nevertheless, BCC located on the scrotum is exceedingly rare. Exposure to ultraviolet light (UV) is the most frequent factor predisposing to the development of BCC. However, with BCC of the scrotum, the etiology remains unclear. We report a case of basal cell carcinoma of the scrotum in a 68-year-old male patient, a review of the literature. (*Ann Dermatol (Seoul)* 18(2) 97~99, 2006)

*Key Words:* Basal cell carcinoma, Scrotum, Genitalia

## INTRODUCTION

The majority of basal cell carcinomas occur on sun-exposed skin. Its appearance on scrotal skin is rare, with an estimated incidence of 1/1000000 case per year<sup>1-3</sup>. The etiology of such cases remains unclear. These tumors must be differentiated from the more common squamous cell carcinoma of the scrotum, Paget's disease, and Bowen's disease<sup>1</sup>. To the best of our knowledge, only 49 cases of scrotal BCC have been reported in the literature.

## CASE REPORT

A 68-year-old Korean man presented with a 2-year history of a mildly-itching and slowly-enlarging scrotal ulceration (Fig. 1). The patient had not previously sought medical attention. Physical examination revealed a 2.5 cm-wide ulcerated erythematous lesion, with a more or less well-defined rolled pearly border. There was some pigmentation at the edge. No inguinal lymph node enlargement was present and the rest of the skin examination was unremarkable. The patient had no history of scrotal trauma,

radiation therapy or exposure to chemicals or arsenic. He had a history of sexually-transmitted gonorrhea 45 years previously, and a history of penicillin-induced anaphylaxis when he had attempted to cure the disease.

An incisional biopsy was performed as the condition was thought to be squamous cell carcinoma. Histopathological examination revealed large islands of monomorphous basaloid cells in the dermis (Fig. 2). Examination of the specimen revealed a tumor that affected the epidermis and subjacent dermis. The tumor was formed by nodules of basaloid cells with peripheral palisading and separation artifact between tumor cells and stroma. Some areas of necrosis and pseudocyst formation were seen. The basaloid cells resembled keratinocytes of the basal layer but had large oval hyperchromatic nuclei, scant cytoplasm and no intercellular bridges.

Due to previous experience of penicillin-induced anaphylaxis, he was phobic about getting medical treatment for scrotal cancer. After time-consuming persuasion, we transferred him to the department of urology for surgical management. He was scheduled for further pre-operative evaluation but did not show up.

## DISCUSSION

Scrotal carcinomas are uncommon, the majority being squamous cell carcinoma (SCC)<sup>1-3</sup>. Scrotal carcinoma was the first recognized occupational cancer, and was described in 1775 by Pervicall Pott, who called this malignancy "chimney sweep's

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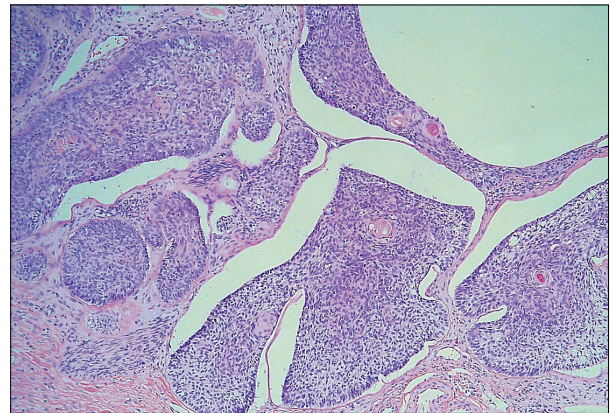
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**Fig. 1.** Well-defined erythematous ulceration with rolled margin on the middle of the scrotum.

cancer". A variety of products (including coal tar, mineral oils, petroleum, solvents and wool oils) have been associated with scrotal SCC. Other non-occupational agents that predispose to carcinoma of the scrotum include arsenic, radiotherapy, long-standing fungal infection and chronic irritation in the scrotal area.

Basal cell carcinoma (BCC) occurs very rarely in the pudendum. Although the incidence is low, pudendal BCC has a predilection for the scrotum



**Fig. 2.** Histopathologic appearance of the lesion shows peripheral palisading nuclei and peritumoral lacunae (H & E,  $\times 100$ ).

and labia majora. In contrast to scrotal SCC, no definite relationship has been established between exposure to carcinogenic agents and subsequent development of BCC<sup>4</sup>. Several authors have previously suggested that scrotal BCC may result from non-specific factors such as poor hygiene and chronic irritation<sup>1,5,6</sup>. Recently, it has been suggested that immunity may play a role in BCC development. If this is so, a decrease in immunosurveillance, such as is produced by exposure to UV light or advanced age, may play an etiological role in some cases. However, more factors must be involved; otherwise BCC would occur more frequently on non-sun-exposed zones<sup>1</sup>. Genetic polymorphisms in loci coding for certain detoxifying enzymes have recently been

**Table 1.** Basal Cell Carcinoma of the Scrotum Metastasizing to Distant Organs

No.	Age (years)	History of BCC lesion (years)	Duration from initial therapy to metastasis (years)	Metastatic site	Authors
1	71	2	3	Skin of pudendum, Pleura	Richter, 1957 <sup>8</sup>
2	47	4	3	Inguinal lymph node, Trunk and scalp	Hughes, 1973 <sup>9</sup>
3	58	3	Metastasis at initial visit	Inguinal lymph node, Pleura	Cieplinski, 1984 <sup>10</sup> & Staley et al, 1983 <sup>11</sup>
4	75	3	2	Penile shaft, pubic and inguinal area	Ribuffo et al. 2002 <sup>12</sup>
5	80	8	3	Inguinal lymph node	Kinoshita et al. 2005 <sup>13</sup>

shown to increase the risk of BCC development<sup>7</sup>, but these data are not currently available for patients with scrotal BCC. In the present case, no occupational risk, predisposing clinical condition or exposure to chemicals was observed.

The average age of patients with scrotal BCC is 66 years (range, 42-82 years), and the most common clinical presentation is nodules or ulcers<sup>4</sup>. Differential diagnosis of basal cell carcinoma of the scrotum includes extramammary Paget's disease and Bowen's disease<sup>1</sup>.

Although metastatic BCC is rare, metastases occurred in 10.2% (5/49) cases of scrotal BCC reported (Table 1). This high incidence of metastases of scrotal BCC suggests that BCC located on the scrotum is more aggressive and has a higher risk of metastasis than BCC located in other areas. Delay in presentation could be an important factor due to patient embarrassment, or because lesion may remain unnoticed for longer than they might in other, more exposed areas.

Treatment for basal cell carcinoma of the scrotum in cases reported in the literature includes surgical excision alone, surgical excision with adjuvant radiation, and radiation therapy alone. The treatment of choice for scrotal BCC is wide surgical excision which is usually curative<sup>14</sup>. Because of the cancer's potential to metastasize, close long-term follow-up is indicated for those infrequent and possibly aggressive tumors of the scrotal skin. Mohs' micrographic surgery is an effective alternative<sup>15</sup>. While radiotherapy has generally been dismissed as ineffective, in patients with metastatic BCC, combination chemotherapy should be considered<sup>10</sup>.

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