A Case of Cutaneous Horn of the Penis Associated with Squamous Cell Carcinoma

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Cutaneous horns of the penis are rare. We report a case associated with squamous cell carcinoma in a 56-year-old male.

A gradually enlarging nodule had been on the glans penis for four years. He had suffered from an erythematous crusted tumor mass and horny excrescence on the glans penis which recurred and was aggravated after excision of the nodule seven months ago. Histopathologic findings of the lesions showed characteristic findings of squamous cell carcinoma and cutaneous horn. In situ DNA hybridization for human papillomavirus types 6, 11, 16, 18, 32, and 33 were all negative. The tumor mass were surgically excised and we have not found any sign of recurrence since then. (Ann Dermatol 5:(2) 137-140, 1993)

Key Words: Cutaneous horn, Squamous cell carcinoma.

Cutaneous horns are usually found in sun-exposed areas but can be found anywhere on the skin[1,2]. Cutaneous horns of the penis are rare, and only 19 cases[2,3], have been reported in the English language literature. More than one third of cutaneous horns of the penis are associated with malignant skin lesions, such as basal cell carcinoma and squamous cell carcinoma. Three cases of cutaneous horn on the penis associated with verruca vulgaris have been reported in the Korean Journal of Dermatology until 1991[4-6]. Herein, we report a case of cutaneous horn of the penis associated with squamous cell carcinoma.

REPORT OF A CASE

A-56-year-old male patient visited our department in January 1990. He had a walnut sized verrucous tumor on the penis and a bean sized horny excrescence on the tumor, which had been slowly growing for 4 years. He had suffered from erythematous crusted tumor mass and horny excrescence on the glans peins which recurred and was aggravated after excision of the lesions 7 months ago. He had circumcision 4 years ago.

On physical examination, the tumor size was 3×2×0.8 cm with a yellowish crust covering an erythematous, verrcous surface (Fig. 1-A), and 1×0.8cm sized, hyperkeratotic horny excrescence was noticed on the lower side of the tumor (Fig. 1-B). There was no lymphadenopathy.

On routine laboratory examination, CBC were within normal limits except ESR. On urine analysis, protein was 100 mg/dl, RBC was 10 to 20[1] hpf and WBC was 5 to 10/hpf. LFT, EKG, VDRL and chest x-ray were within normal limits and/or non-reactive.

Histopathologic findings of the tumor mass showed acanthosis, blurring of dermoepidermal junction, atypical cell nests invading the dermis, and individual cell keratinization with dyskeratosis (Fig. 2). Other prominent changes included nuclear atypia with nuclear enlargement and hyperchromsia. (Fig. 3). Histopathologic findings

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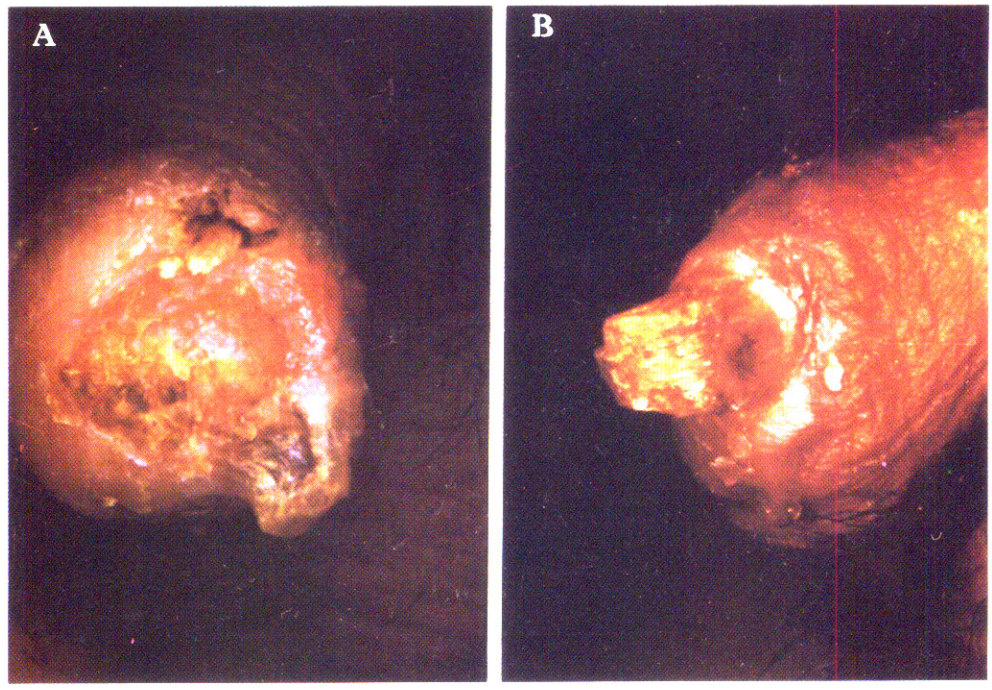

Fig. 1. A: A 3×2×0.8cm sized, crust covered, verrucous surfaced, erythematous tumor on the glans penis. B: Single 1×0.9cm sized, hyperkeratotic horny excrescence on the lower side of tumor mass.

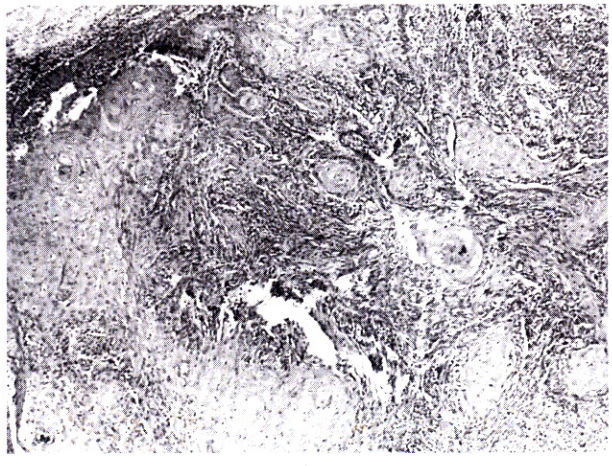

Fig. 2. Blurring of dermoepidermal junction, atypical cell nests invading to the dermis, and individual cell keratinization with dyskeratosis (H&E stain, ×80).

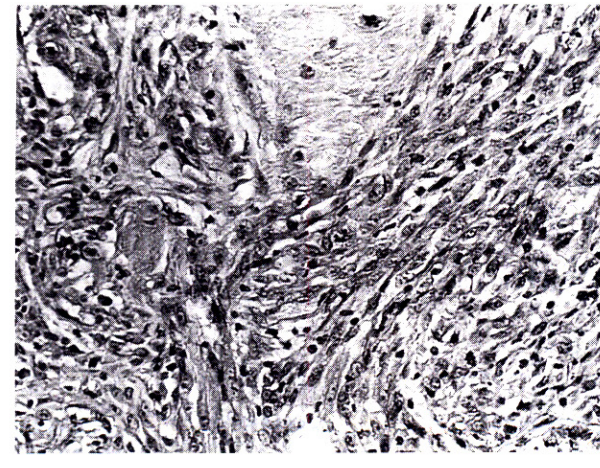

Fig. 3. Variable sized, atypical squamous cells with hyperplasia and hyperchromasia of nuclei (H&E stain, ×100).

of the horny excrescence showed papillomatosis, hyperkeratosis, parakeratosis and acanthosis in the epidermis (Fig. 4).

IN situ DNA hybridization was performed for human papillomavirus (HPV) types 6, 11, 16, 18, 32, and 33 but all were negative.

Based on clinical and histopathological finidngs, we diagnosed cutaneous horn of the penis associated with squamous cell carcinoma. We performed excision of the lesion and there has been no sign of recurrence since then.

DISCUSSION

Squamous cell carcinoma of the penis is an infrequent entity. In the United States, cancer of the penis accounts for 2% of all malignant tumors of male genital organs is found in 0.3% to 0.5% of the cancer bearing male population[7]. It is most commonly diagnosed during the sixth and

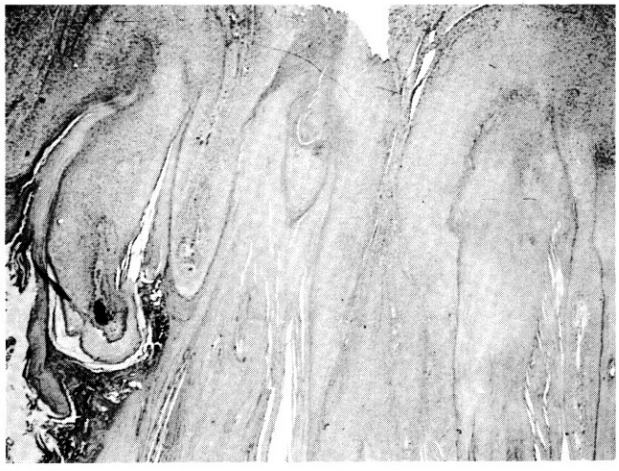

Fig. 4. Papillomatosis, hyperkeratosis, parakeratosis and acanthosis in the epidermis (H&E stain, ×100).

seventh decades of life[8].

The etiology of squamous cell carcinoma of the penis is multifactorial, and one of the most important factors is poor hygiene together with lack of circumcision at birth. This combination produces chronic irritation by the smegma within the preputial sac and secondary infection[8]. The subsequent smegma production may produce changes in local microbial flora. There, in conjunction with poor hygiene and the resulting inflammatory reaction, may induce changes that potentiated the development of the carcinoma. There is some evidence for this description, such as the squamous cell carcinoma induced in rats by the action of long-term exposure to horse smegma[9], and the fact that penile carcinoma is rare in the Jewish population, who practice neonatal circumcision[8].

Another factor that is important as an etiologic agent in penile carcinoma is the human papillomavirus (HPV). The carcinogenic potential of papillomaviruses was first recognized by Rous and Beard[10], who observed a squamous cell carcinoma arising from a Shope papillomavirus-induced wart of domestic rabbit. During the past few years the development of molecular probes for new types of HPV DNA has established the consistent association between papillomaviruses and anogenital cancers, including cervical, vulvar, and perianal tumors, as well as penile carcinoma[8].

Furthermore papillomavirus plays a role as promoting agent[11]. Benign tumors that result from promoting agents have a variable risk of conversion into a malignant tumor. Approximately 60 HPV types have been identified by DNA hybridization. Some of these are associated with genital warts (types 6, 11, 18, 31, 33-35, 41-45, 58 and 51-55). HPV types that are found in genital warts associated with cancer are 16, 18, 31, 33-35, 39, 42-45, 48, and 51-55[12]. This risk may be high in HPV 16 or 17 or relatively low in HPV 6 or 11[13]. Additionally the risk of conversion of a benign tumor to a malignant tumor is increased by exposure to other cocarcinogens. Other related factors are the microbial flora and its metabolite, which may act as carcinogens[11]. In addition, cigarette smoking and herpes simplex may promote malignant changes.

Our patient had circumcision at an advanced age, which may be a predisposing factor, but other known cocarcinogens and HPV infection could not identified. The authors presume that poor hygiene, together with lack of early circumcision could have contributed to the cancer products.

Cutaneous horn is characterized by an overgrowth and a cornification of the epithelium, forming a solid protuberance. Carcinomatous lesions may appear as an area of induration or erythema, as a small bump, a pimple, a warty growth, or more luxuriant exophytic lesions. Alternatively it may appear as a shallow-based nonhealing erosion or a deeply excavating ulcer with elevated or rolled-in margins. Our patient showed characteristic skin findings, such as an irregular marginated, yellowish crust covered, erythematous, verrucous surfaced tumor and hyperkeratotic horny excrescence.

Histopathologically, cutaneous horn is associated with solid hyperkeratosis, acanthosis, parakeratosis and papillomatosis. Squamous cell carcinoma shows keratinization, epithelial pearl formation, and various degrees of mitotic activity[14]. The biopsy specimen of our patient showed characteristic findings of cutaneous horn and squamous cell carcinoma.

The regional femoral and illiac node represents the vulnerable site of metastasis from penile carcinoma, because the lymphatics of the prepuce form a connecting network that joins with lymphatics from the skin of the penile shaft[8]. In the present case, we could not detect any evidence

of metastases.

Treatment includes surgical excision, radiation therapy, and chemotherapy[8]. In our patient surgical excision of the lesion was performed, and we have not observed any sign of recurrence of the lesion for 1 year.

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