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COLLISION TUMOR OF PENIS - LEIOMYOSARCOMA AND SQUAMOUS CELL CARCINOMA PENIS – A CASE REPORT

Oncology

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ABSTRACT

Squamous carcinoma is the most common penile tumor, and leiomyosarcoma of penis is a very rare malignant tumor with less than 50 cases being reported in literature. Here we report a case of co-existing Leiomyosarcoma and squamous cell carcinoma of penis with review of leiomyosarcoma and carcinosarcoma.

KEYWORDS

Leiomyosarcoma, Squamous carcinoma, penis

INTRODUCTION

Carcinoma penis is more common in developing countries than the industrialised nations. The incidence is 0.7 to 2.2/1 lakh in Indian subcontinent with 1.8/1,00,000 population in Chennai [1]. The majority of these tumors are Squamous cell carcinomas. Mesenchymal tumours are rare and they constitute less than 5% of all types of penile malignancies [2].

We report a patient who presented with penile tumor with combination of leiomyosarcoma and squamous cell carcinoma treated in our Institute, with the necessary immune-pathologic correlation and brief discussion on Leiomyosarcoma and Sarcomatoid carcinoma. It has been previously reported by Koizumi et al [3] in 1987 and this being possibly the second case in English literature.

Case report

62 year old male presented with history of ulcerated lesion over prepuce and glans penis of one month duration, associated with bleeding. He underwent circumcision and excision biopsy of the same elsewhere and was referred to our institute as he was diagnosed with pleomorphic sarcoma penis with margin positive resection. Clinically he also had a scab covered area over the glans with minimal induration. There were no significant inguinal nodes. Review of slides at our institute showed a malignant neoplasm composed of sheets of spindle cells with numerous atypical mitoses, suggestive of pleomorphic sarcoma. Further immunohistochemical studies revealed positivity for vimentin, SMA, EMA, S-100P and CD 56. IHC were negative for keratin, desmin, p63, HMB 45, suggesting high grade pleomorphic leiomyosarcoma [Fig 1]. Chest imaging revealed no lung metastasis

He underwent partial amputation of penis and had uneventful postoperative recovery. Postoperative pathology revealed presence of early invasive squamous cell carcinoma grade II-III [Fig 2]. Both the slides were reviewed and presence of both sarcoma and carcinoma confirmed. He underwent staged inguinal sentinel node biopsy which was negative for metastasis. He is currently disease free and on regular follow up for past 20 months.

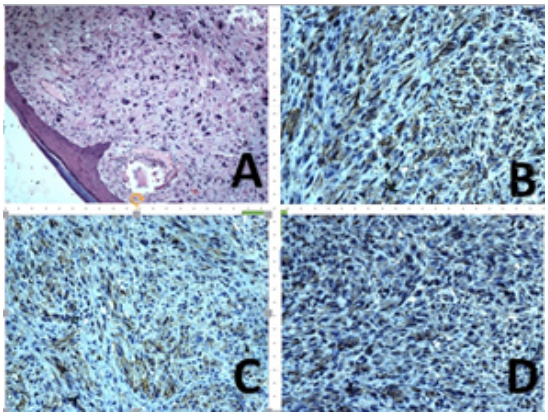

Fig 1 : A – H&E 10X – Shows leiomyosarcoma; B – IHC Vimentin – positive; C – IHC CD 56 positive; D – IHC SMA positive

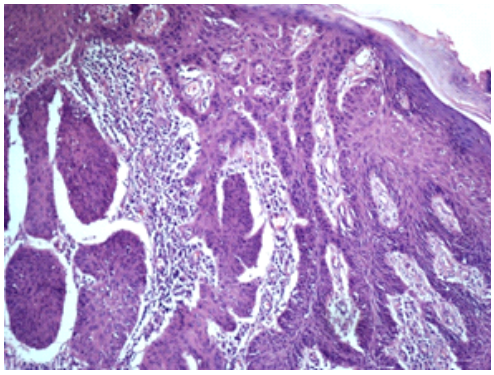

Fig 2 : H&E 10X – Shows squamous cell carcinoma in partial penectomy specimen.

DISCUSSION

The commonest malignant neoplasm of penis is squamous cell carcinoma followed by tumors of adjacent structures, extending directly to penis. Tumors arising from mesenchymal elements are very rare comprising mainly of Kaposi sarcoma, Angiosarcoma, hemangioendothelioma, rhabdomyosarcoma and leiomyosarcoma [4]. Less than 50 cases of leiomyosarcoma have been reported in the English medical literature [5]. The first case was reported by Levi in 1930 [6]. It has been reported in wide age group of patients from 6 to 80 years [7].

There are two distinct clinico-pathological types of sarcomas, superficial and deep-seated tumors. They are classified as superficial when they arise from the integumentary supporting structures and as deep when they develop from the corporeal body supporting structures [7]. Superficial lesions, present as nodular lesions and are more distal in location, are slow growing, and have a low metastatic potential. Deep lesions tend to metastasize early in their course or they invade the urethra.

Primary treatment is surgical with radical excision [8]. Nodes are addressed when involved. Since the deep type is associated with recurrence and distant metastases, combination of local pelvic radiotherapy and systemic chemotherapy might be effective as an adjuvant therapy.

Leiomyosarcoma is distinguished from sarcomatoid carcinoma through its negative immunoreactivity for keratin as in our patient [9].

Sarcomatoid carcinomas are biphasic tumors, which can arise from any site in the human body. Sarcomatoid carcinoma arising from penis is rare and few consider these tumors as a variant of squamous cell carcinoma or a metaplastic differentiation of the mesenchyme. They have aggressive course with both blood borne and lymphatic metastases. Treatment is by surgical excision, and dissected lymph nodes have shown both epithelial and sarcomatous components.

Carcinosarcomas are carcinoma coexisting with sarcoma. Their origin

is controversial, and have been proposed to be based on different theories of histogenesis. Collision theory [10], suggests that carcinoma and sarcoma arise as two independent neoplasm. Combination theory suggests that both components arise from single stem cell [11]. Conversion theory suggests the possible evolution of sarcoma from carcinoma after metaplastic transformation [12]. Composition theory suggest the sarcomatous element to be pseduosarcomatous reaction to carcinomatous element [13].

In our patient, both the mesenchymal and epithelial components had different histochemical features, possibly supporting the collision theory. Similar to report by Koizumi et al, our case also had co-existing leiomyosarcoma and squamous carcinoma.

The differential diagnosis of carcinosarcoma includes leiomyosar coma, angiosarcoma, amelanotic melanoma [14]

We have presented this case of combined leiomyosarcoma and squamous cell carcinoma as the rarity of this entity makes it a clinicopathologic curiosity. It is important for thorough pathological examination and additional immunohistochemical studies to recognize these tumors.

DISCLOSURE

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(2) Statement on Conflicts of Interest: NONE

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