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CASE REPORT

Case Report: A Rare Case with Cutaneous Metastasis of Bladder Urothelial Carcinoma

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Bladder cancer is a common genitourinary malignancy with variable metastatic potential. Cutaneous metastasis is uncommon and often presents with a poor prognosis. We presented a 47-year-old man with a history of muscle-invasive urothelial carcinoma of the bladder and suffered from headache and right arm swelling that had persisted for months. The excisional biopsy of the skin lesions and scalp tumor showed high-grade metastatic carcinoma of urothelial origin. Even though is rare, cutaneous metastasis is still the possibility of urothelial carcinoma metastasis and mimics several types of skin lesions. There is no guideline for cutaneous metastases of urothelial carcinoma because of the small number of patients and poor prognoses. Chemotherapy remains the treatment of choice, and further studies are needed to assess the efficacy of immunotherapy for skin metastases of urothelial carcinoma.

Key words: Cutaneous metastasis, urothelial carcinoma, bladder, skin

INTRODUCTION

Bladder cancer is a common genitourinary malignancy with variable metastatic potential, including lymph nodes, liver, lungs, and bones.[1] Cutaneous metastasis of bladder urothelial carcinoma is extremely rare, with an incidence rate of <1%,[2] and often presents with a poor prognosis. Cutaneous metastases mimic several types of skin lesions. The most common clinical presentation of cutaneous metastases from genitourinary malignancies is infiltration by plaques or nodules.[2] We report a case of cutaneous metastasis of urothelial carcinoma after chemoradiotherapy.

CASE REPORT

A 47-year-old man presented to our outpatient department with headache and right arm swelling that had persisted for months. Physical examination revealed a hardened plaque on the scalp on the left side of the head and right arm, which was composed of coalescing erythematous nodules. Partial bleeding in the middle of a lesion with a size of 3 cm × 2 cm with mild distended pain was also observed. No fever or leukocytosis was noted. The patient had a history of muscle-invasive urothelial carcinoma of the bladder (cT2N0M0, high grade) 8 months previously, for which he received concurrent chemotherapy with methotrexate, vinblastine, doxorubicin, and cisplatin (MVAC) and radiotherapy. Following cystoscopy, he showed partial response, but the patient refused further therapy.

Brain magnetic resonance imaging revealed a soft-tissue lesion in the left parietal scalp, subgalea, and skull region and fluid accumulation in the left epidural space [Figures 1 and 2]. There was no sign of brain metastasis. Cutaneous metastases with local invasion of the skull and galeal regions were therefore considered. Chest computed tomography revealed no lung or visceral metastases. The patient underwent excisional biopsy of the skin lesions and craniotomy for the epidural fluid with removal of the scalp tumor. The final histopathological examination of the scalp soft tissue and skin revealed

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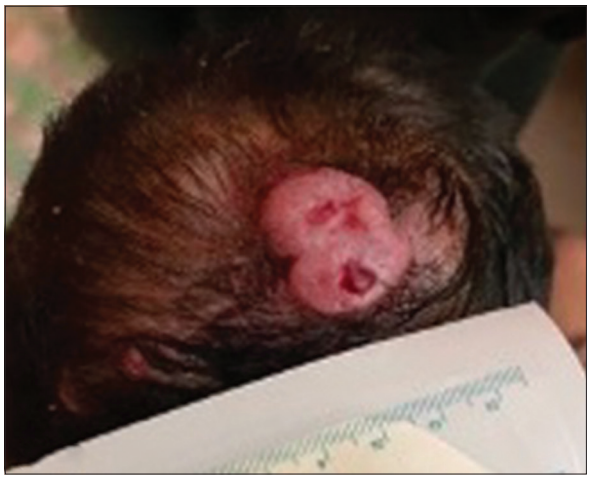

Figure 1: Clinical image showing a 3 cm × 2 cm sized erythematic nodules on the scalp with bleeding

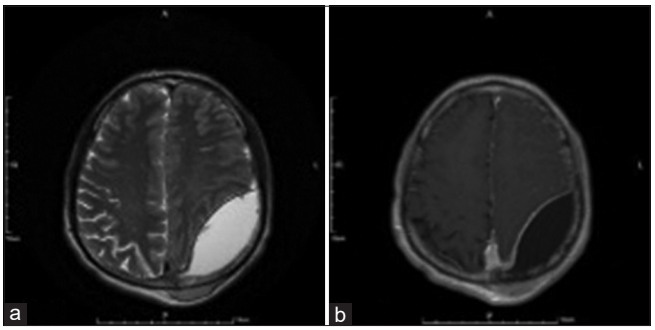

Figure 2: Brain magnetic resonance imaging. (a) An axial T2-weighted image revealing a soft-tissue lesion of the left parietal scalp and epidural fluid collection in the left parietal region with mass effect. (b) An axial T1-weighted image with gadolinium contrast showing mild enhancement of the soft tissue on the scalp and diffuse dura

extensive infiltration from a high-grade metastatic carcinoma of urothelial origin and CK7, GATA3, and CK positivity. The skull and galeal tissues showed chronic inflammation without evidence of malignant cells.

Considering bladder cancer metastasis after concurrent chemoradiotherapy, immunostaining for PDL-1 was performed, which showed a negative result. Further treatment with carboplatin and paclitaxel was initiated. However, the patient showed a poor response and died due to disease progression and multi-organ failure a few months after the diagnosis of cutaneous metastasis.

DISCUSSION

Bladder cancer is a difficult malignancy to treat because of its cellular behavior and ease of spreading. The American Cancer Society data showed that the 5-year relative survival of patients with bladder cancer is approximately 77%; however, for patients with metastatic bladder cancer, the 5-year survival rate drastically drops to 5%.[3] These data showed that metastasis of bladder cancer is poor prognosis factor. According to the study, the incidence of skin metastases from malignant tumors of the urinary system is 1.3% and that of skin metastases from the bladder is <1%.[2] Thus, cutaneous metastases are rare and have a poor prognosis.

Cutaneous metastases are clinically categorized as nodular or inflammatory. They may occur through direct invasion, lymphatic spread, or hematogenous spread.[4] Patients with invasive urothelial carcinomas commonly undergo chemotherapy. The initial appearance of the skin lesion may mimic the skin rash caused by chemotherapeutic reagents, which may delay diagnosis.

In our case, the metastasis was probably of the nodular type. Owing to the metastatic sites of the skin and scalp, hematogenous spread is more likely than the other mechanisms. Interestingly, no brain or other metastases were noted on different imaging evaluations. Because of the nonspecific clinical presentation of the skin lesions, initial diagnosis was difficult. Biopsy remains the only option to diagnose urothelial carcinoma with cutaneous metastases.

Similar to brain metastases, previous studies have shown that skin metastases from bladder urothelial carcinoma can arise as a result of diverse treatments aimed at prolonging patients' lives and increase the duration for cancer progression. In a recent study, skin metastasis was considered a late manifestation of a systemic spread. The mean survival period of most patients with bladder cancer is relatively short due to the development of metastatic skin lesions. Most patients with cutaneous metastasis of bladder tumors die within 6 months of diagnosis.[2]

Management strategies for cutaneous metastases of urothelial carcinoma have not been clearly defined because of the small number of patients and poor prognoses.[5] Treatment options are often limited, with the focus being on palliative care, particularly for patients with advanced age and terminal disease status, resulting in a poor prognosis. Although chemotherapy is rarely curative, it is the treatment of choice for cutaneous metastasis of bladder urothelial carcinoma. Currently, the combination of gemcitabine and cisplatin and the MVAC scheme are established treatments with reported tumor remission rates of up to 70%.[6] However, the prognosis remains poor. There are limited studies on immunotherapy for cutaneous metastasis of urothelial carcinoma. Hasan *et al*. reported the inefficacy of cisplatin and gemcitabine, followed by atezolizumab, for cutaneous metastasis of bladder urothelial carcinoma.[7] Otsuka *et al*. reported a poor response to platinum-based chemotherapy and immunotherapy with pembrolizumab for cutaneous metastasis.[8] In our case, cutaneous metastases emerged after treatment with MVAC and progressed rapidly. Immune checkpoint inhibitors were not prescribed due to negative staining results and recent

studies on their efficacy and cost. Currently, there is no better treatment option for cutaneous metastasis of urothelial carcinoma. Further accumulation of case reports is needed to evaluate the efficacy of immunotherapy for skin metastases of urothelial carcinoma.

CONCLUSION

Cutaneous metastasis of urothelial carcinoma can occur at any site in the body. The clinical presentation may be nonspecific and mimic other skin lesions. Therefore, excisional biopsy for pathological examination should be considered in patients with suspected cutaneous metastasis. Moreover, these signs indicate that the disease is aggressive and may have a poor prognosis. Chemotherapy remains the treatment of choice, although the response rate is generally poor. However, given the limited number of cases and short survival of these patients, further studies are needed to assess the efficacy of immunotherapy for skin metastases of urothelial carcinoma.

Declaration of patient consent

The authors certify that they have obtained all appropriate patient consent forms. In the form, the patient has given his consent for his images and other clinical information to be reported in the journal. The patient understands that his name and initials will not be published and due efforts will be made to conceal his identity, but anonymity cannot be guaranteed.

Data availability statement

Data sharing is not applicable to this article as no datasets were generated or analyzed during the current study.

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Conflicts of interest

There are no conflicts of interest.

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