Case Reports

Calcaneal metastasis in uterine cervical cancer: a case report and a review of the literature

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Summary

A 64-year-old woman with FIGO Stage IB2 cervical cancer was treated with radical surgery. Six months after her initial surgery, the patient developed calcaneal metastasis. Significant relief in bone pain was achieved with palliative radiotherapy followed by platinum-based combination chemotherapy, and the patient is currently alive with disease at eight months after the development of recurrence. Bone metastasis from uterine cervical cancer is uncommon, especially in the distal appendicular skeleton. Currently, and to the best of the authors' knowledge, calcaneal metastasis derived from cervical cancer has never been reported in English literature. As the prognosis of patients with bone metastasis is dismal and most patients die within a year, treatment should be directed towards improving the patient's quality of life and palliating their symptoms.

Key words: Calcaneus; Bone metastasis; Cervical cancer; Treatments.

Introduction

Bone metastasis from uterine cervical cancer is uncommon, especially in the distal appendicular skeleton. The authors describe a case of calcaneal metastasis derived from uterine cervical cancer.

Case Report

A 64-year-old woman presented with postmenopausal vaginal bleeding. Her past surgical and medical history was unremarkable. On evaluation, she was found to have a 4.5 cm friable cervical mass, which was limited to the uterine cervix. Biopsies from the lesion demonstrated a non-keratinizing type squamous cell carcinoma. A pretreatment work-up revealed no evidence of adenopathy or metastatic disease. A diagnosis of FIGO Stage IB2 cervical cancer was confirmed, and radical hysterectomy, bilateral salpingo-oophorectomy, and pelvic lymphadenectomy were performed. Despite the presence of pathological risk factors including deep stromal invasion and lymph vascular space involvement, the patient refused adjuvant radiotherapy. At six months follow-up, she presented with claudication. A four cm painful mass was observed in her left heel, which was fixed to the underlying structures. An X-ray of her foot showed an osteolytic lesion in her calcaneus, and a magnetic resonance imaging (MRI) showed a four cm mass located on her calcaneus (Figure 1). Biopsy samples from the calcaneal mass revealed metastatic poorly differentiated squamous cell carcinoma. A 2-deoxy-2-[^{18}F] fluoro-D-glucose position emission tomography/computed tomography (FDG PET/CT) revealed increased FDG uptake in the calcaneus, pelvic sidewall, and paraaortic lymph nodes, which were consistent with metastases. Significant relief of bone pain was achieved with palliative radiotherapy followed by platinum-based combination chemotherapy, and the patient is currently alive with disease at eight months after the development of recurrence.

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Discussion

Bone is the third most common site of hematogenous spread from uterine cervical cancer after the lungs and liver [1]. According to recent reports, the incidence of clinical bone metastasis derived from uterine cervical cancer varies from 1.1% to 8.2% [2-5]. A large autopsy study reported an incidence of 8.6% [6]. The vertebrae, followed by the pelvic bone and long bones, are the most common sites of bone metastasis, and the distal appendicular skeleton is rarely involved [3-5]. In the lower extremities, the femur [3], fibula [7], and tibia [8] have been reported to be involved during the progression of uterine cervical cancer. However, to the best of the authors' knowledge, calcaneal metastasis derived from cervical cancer has never been reported in English literature.

Skeletal scintigraphy or FDG PET/CT is useful for the detection of bone metastases [5, 9], however, the diagnostic value of these methods has never been directly compared in patients with cervical cancer. X-rays, CT scans, and MRI are also useful for excluding the possibility of the false-positive accumulation of radioisotopes or FDG in osteoporotic or inflammatory lesions [9]. As more than 50% of patients have multiple metastatic lesions at the time of the diagnosis of bone metastasis [2-5], a systemic metastatic work-up is also necessary.

There are no guidelines regarding the therapeutic options for this condition. Palliative radiotherapy may be beneficial for pain relief and to decrease the risk of fractures [3-5]. Matsuyama *et al*. reported that 67% of patients experienced pain relief after being treated with 30 Gy of external beam radiotherapy in ten fractions [3]. For systemic disease, chemotherapy following palliative radiotherapy may also provide adequate symptom control [3, 5]. In a case involving a solitary bone lesion, the surgical excision of metastatic bone has also been reported

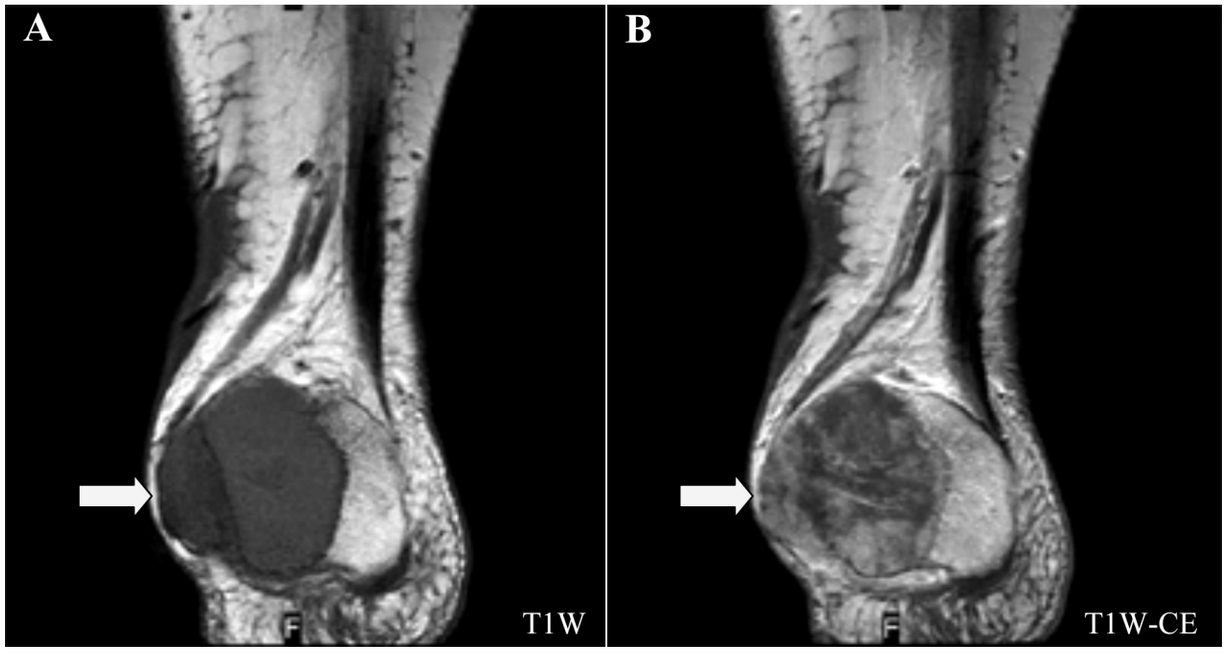

Figure 1. — MRI showing a four cm tumor with heterogeneous enhancement located on the right calcaneus; A) T1-weighted image (T1W). B) Contrast-enhanced T1-weighted image (T1W-CE).

[3, 5]. Despite these treatments, survival after the diagnosis of bone metastasis was dismal and was not associated with the number of bone metastasis or the treatment modality [5]. As most patients die within 12 months from the discovery of bone metastatic lesions [2-5], treatment should be directed towards improving the patient's quality of life and palliating their symptoms.

Conclusion

This case highlights the fact that the calcaneus can be affected during the progression of uterine cervical cancer.

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