

Case Report

Prolonged survival in a patient with isolated skull recurrence of cervical carcinoma – Case report and review of the literature



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ARTICLE INFO

Article history:

Received 11 November 2014

Accepted 16 December 2014

Available online 24 December 2014

Keywords:

Cervix

Squamous cell carcinoma

Metastasis

Bony calvarium

ABSTRACT

A 58 years old woman was diagnosed with squamous cell carcinoma of the uterine cervix FIGO stage IIB and was treated by concomitant radio-chemotherapy followed by simple hysterectomy. Several months later a single metastasis to the skull was diagnosed. The patient underwent craniotomy and radiotherapy and achieved a prolonged disease free survival of 20 months.

Bone metastases from cervical carcinoma are usually part of widespread metastatic disease. Skull metastases are extremely rare. Selected cases of solitary bone metastases can be treated radically and achieve long term disease free survival.

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Introduction

Squamous cell carcinoma of the cervix (SCC) is the second most common malignancy in women in the developing world. It spreads locally by direct extension and to the pelvic and extra-pelvic lymph nodes. Hematogenous spread mainly occurs in patients whose disease involved pelvic nodes. The most frequent sites of distant metastasis are the lungs, extrapelvic nodes and liver. Bone metastases in cervical cancer are uncommon. The exact frequency of bone metastasis of cervical cancer is not known but is estimated to be in the range of 0.8%–23% (Katz et al., 1979). These ranges differ mainly according to the methods used to detect bone metastasis. The most frequent site for bone metastasis is the vertebral column (Carlson et al., 1967) followed by the pelvis and long bones (Baid et al., 1992). Metastasis to the bony calvarium is extremely rare.

Metastatic cervical cancer is usually treated by chemotherapy, and median survival in the most recent reports is about 13.3 months. Incorporation of bevacizumab to chemotherapy significantly improved the median overall survival to 17 months (Tewari et al., 2014).

However, in patients that present with a solitary disease site, aggressive local treatment can sometimes result in prolonged survival. Selected cases with lung metastases can achieve long term remission following pulmonary resection (Anderson et al., 2001). In

one report, the 5 year survival for patients who underwent pulmonary metastasectomy was 46.8% (Anraku et al., 2004). Patients with isolated recurrence in the paraaortic lymph nodes can be treated with concomitant chemo-radiotherapy and 5-year survival rates between 30 and 50% have been reported (Chou et al., 2001). It appears that asymptomatic paraaortic recurrence which is detected by routine imagining carries a higher salvage rate than symptomatic recurrence (Singh et al., 2005).

We report an unusual case of an isolated metastasis of cervical cancer to the fronto-parietal bone. The patient was treated by local surgery and radiotherapy and remained disease free for 20 months.

Case description

A 58 year-old woman presented with postmenopausal bleeding and was diagnosed with squamous cell carcinoma of the uterine cervix FIGO stage IIB. PET–CT was negative for lymph nodes metastases or distant spread. She underwent concomitant chemo-radiotherapy to the pelvis followed by intracavitary brachytherapy. PET–CT scan 8 months after completion of initial therapy detected a small area of positive uptake in the cervix without evidence of pelvic nodal involvement. Biopsies from the cervix were non-conclusive and the patient underwent a simple hysterectomy and bilateral salpingo-oophorectomy. Pathological assessment did not reveal evidence of residual tumor. Physical examination and PET–CT 5 months later were negative for metastatic disease.

Seven months after surgery the patient complained of headaches and a fast growing lump on the right forehead. A lesion on her right

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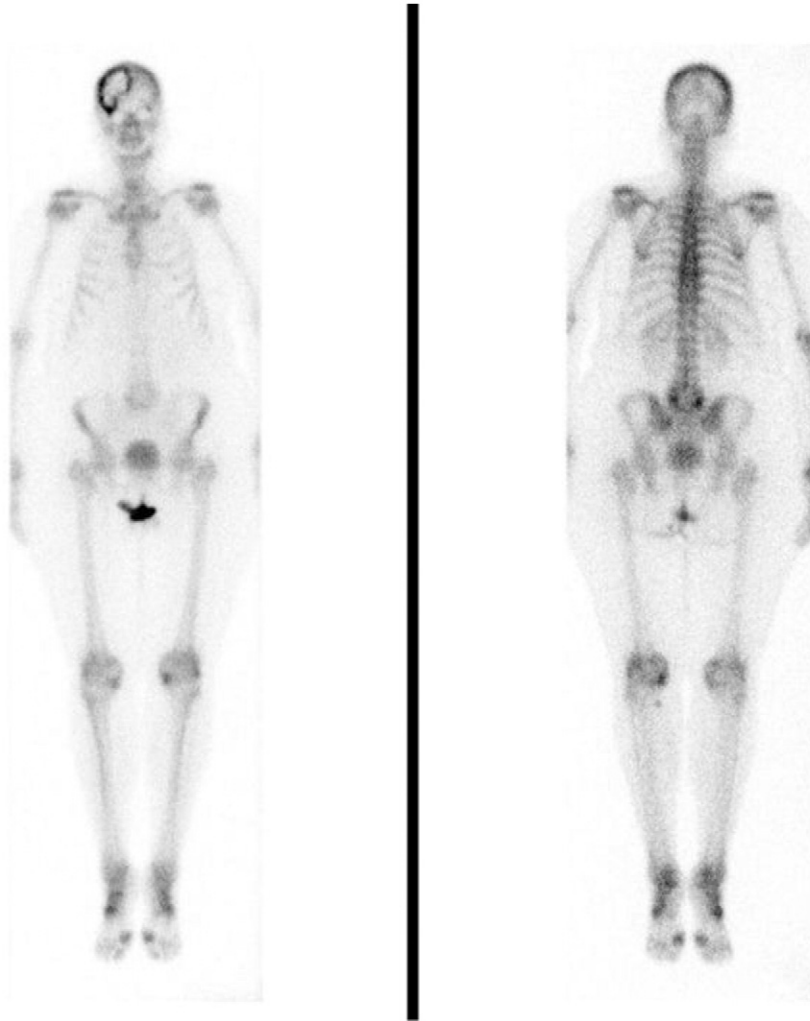


Fig. 1. Bone scintigraphy demonstrating a solitary lytic lesion confined solely to the fronto-parietal bone.

fronto-parietal bone was palpated and no neurologic deficits were noted. CT scan of the brain revealed a solitary lytic lesion confined solely to the fronto-parietal bone. Bone scintigraphy and Single-photon emission computed tomography (SPECT) revealed the same finding as well (Fig. 1). A whole body bone scan was negative for other sites of metastasis. The patient underwent craniotomy and adjuvant skull radiotherapy. Pathology findings were consistent with SCC identical to the primary tumor (Fig. 2). The patient was well and free

of recurrent disease for 20 months, when metastases to the para-aortic lymph nodes were diagnosed.

Discussion

Metastasis of cervical cancer to the skull is extremely rare. (Rath et al., 2000) reported a case with multiple metastases to the scalp in a patient treated with radiotherapy for a FIGO stage IIIB tumor. Yanuk

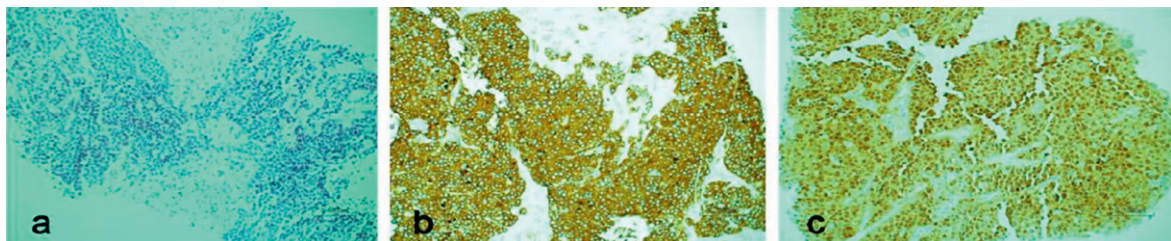


Fig. 2. Histology specimens from patient's skull. a: Core biopsy of metastatic squamous cell carcinoma of cervix. Hematoxylin–eosin, $\times 200$. b: Immunohistochemical stain for high molecular weight cytokeratin 5/6. Immunoperoxidase $\times 200$. c: Immunohistochemical stain for surrogate high risk HPV marker p16. Immunoperoxidase $\times 200$

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Table 1
Reported cases of solitary skull lesions of squamous cell carcinoma of the cervix.

Author	Age	Histology at the time of diagnosis	FIGO (stage)	Initial therapy	Time till relapse (months)	Clinical presentation at the time of relapse	Area of metastasis	Number of metastasis	Treatment at the time of recurrence	Vital status/follow-up
Present study	58	SCC	IIB	Concomitant radio-chemotherapy	20	Headache, local tenderness	Skull–parietal	1	Craniotomy and radiotherapy	Alive*
Niloofer Ahmadloo et al., 2010 (Mohanty et al., 2010)	65	SCC	IIIb	Concomitant radio-chemotherapy	While treated	Headache	Bony calvarium	Many	Chemo radiation	Died
Agarwal et al., 2002 (Pasricha et al., 2006)	60	SCC	IIIb	Radio + brachytherapy	2	Local tenderness and vaginal bleeding	Skull–temporo-parietal	1	Radiotherapy	Alive*
Abhishek et al., 2008 (16)	53	Adenocarcinoma	Ila	Surgery + radiotherapy	4	Local tenderness, seizures	Frontal skull and superior sagittal sinus thrombosis	1	Chemo radiation	Alive*
Mohanty et al., 2010 (17)	54	SCC	IIIb	Radio + brachytherapy	2	Local tenderness	Occipital lobe	1	Radiotherapy	Alive*

* At current time of publication of article.

et al. (Yanuck et al., 1991) reported on a 21 year-old woman with stage IV cervical cancer that presented with a mass on the frontal bone. Cases with a solitary skull lesion are rare and only several were reported in the English literature (Niloofer Ahmadloo et al., 2010; Agarwal et al., 2002; Abhishek et al., 2008; Mohanty et al., 2010) (Table 1). In most of the cases that have been described skull metastases developed after treatment for advanced stage primary disease, reflecting the tendency of cervical cancer to spread to the lymphatic system before hematogenous spread occurs. In our unique case the clinical stage at diagnosis was II-B and the scalp metastasis was diagnosed after a relatively long (15 months) disease free interval.

The presenting symptoms of scalp metastases in the cases described were headache or a palpable mass in the calvarium. The clinician should be aware of this rare entity and its clinical presentation.

Skeletal metastasis from cervical carcinoma usually carries a poor prognosis and life expectancy is less than twelve months after diagnosis, regardless of the duration of disease free interval (Baid et al., 1992). Treatment is usually directed toward maintaining quality of life and includes local palliation with radiotherapy or surgery and systemic chemotherapy. Treatment should be tailored according to the patient's status.

As mentioned above, isolated recurrence of cervical cancer to the lungs and paraaortic lymph nodes can be cured with radical therapy. However, the appropriate therapy for a single bone metastasis has not been defined. Pasricha et al. described a case of solitary metastasis of cervical cancer to the fibula that was treated with surgery and radiotherapy. After more than 3 years of follow-up the patient was free of disease (Pasricha et al., 2006). In our case radical treatment also resulted in a relatively prolonged (20 months) disease free survival, after which another potentially curable recurrence in the para-aortic lymph nodes was diagnosed. Notably, both cases developed after initial treatment of a FIGO stage II primary disease.

Summary

This case highlights the need to address unusual symptoms in patients that have been treated for primary cervical cancer as this disease may spread to unusual sites. Moreover, it demonstrates that selected patients can achieve a long term disease free survival following radical therapy for an isolated bone recurrence.

Conflict of interest statement

We, the authors of the following manuscript, declare that we have no conflicts of interest regarding this submitted paper.

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