



BRAIN METASTASES FROM CERVICAL CANCER: A CASE REPORT

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Article Received on 26/09/2015

Article Revised on 15/10/2015

Article Accepted on 05/11/2015

ABSTRACT

Brain metastases from cervical cancer are extremely rare. However, in recent years, an increase in the incidence of brain metastases from cervical cancer has been noted. Improvement in treatment of the cervical cancer results in longer survival of these patients which may be related to this. In various clinical studies, the incidence of brain metastases from cervical cancer has been reported to be about 0.5% to 1.2%. Due to the rarity of this event, there are very few reports in the literature regarding the optimal management and prognosis of these patients. We report the case of a woman with squamous cell carcinoma of the cervix, with brain metastases treated with palliative radiotherapy to whole brain.

KEYWORDS: radiotherapy, palliative, cerebellar, cervix, brain.

INTRODUCTION

Cervical cancer is the most common malignancy in Indian women, with an annual incidence of approximately 122,844 cases as per GLOBOCAN 2012. Cervical cancers usually spread by local extension and through the lymphatics to the retroperitoneal lymph nodes. Metastases to the central nervous system from cervical cancer are extremely rare. They are usually seen late in the course of the disease, and have poor prognosis. Due to the rarity of this event, there are very few reports in the literature regarding the optimal management and prognosis of these patients. We report the case of a woman with squamous cell carcinoma of the cervix, with brain metastasis, who was managed successfully. A summary of the relevant literature is also presented.

CASE REPORT

A 38-year-old, postmenopausal woman presented on 16 March, 2012 with complaints of bleeding and discharge per vaginum of 6 months duration. Patient was asymptomatic and apparently well six months back when she started complaining of bleeding per vaginum. Bleeding was irregular and scanty initially but later it started as frank bleeding. Patient also gives history of discharge per vaginum since 6 months. Discharge per vaginum was gradual in onset, intermittent, scanty, thick and curdy and foul smelling. No history of frequent urination, burning micturation or other urinary problems.

No associated history of fever, chills, red color urine. No history of bowel related complaints or bleeding per rectum. No history of pain abdomen at present or in past. No history of swelling/ pain radiating to leg. No history of cough/ chest pain/breathlessness. No history of headache. No history of loss of appetite/loss of weight. No past history of hypertension, diabetes, asthma, tuberculosis, seizures or other chronic disease. No history of any drug allergy. Patient was nonsmoker, nonalcoholic, vegetarian and married. No history of menstrual irregularity. No history of intake of OCP'S.

Pelvic examination revealed an ulceroproliferative cervical growth, with involvement of the vaginal fornices and the upper third of the anterior vaginal wall. A biopsy of the lesion showed a moderately differentiated squamous cell carcinoma. After a thorough clinicoradiological workup, the disease was staged as FIGO stage IIB. The patient was treated with radical radiotherapy. She was given 50 Gy/25 fractions/5 weeks by external beam radiation and 3 sessions of 700cGy by brachytherapy. The treatment was completed on 18 May 2012 and the patient attained complete response. The patient remained asymptomatic for 2 years after completion of treatment.

In May 2014, she experienced persistent headache only partially relieved by analgesics. There was no history of visual disturbance/vomiting. A CECT scan of the brain

revealed ring enhancing lesion in left cerebellum and right parietal region with peripheral edema. Figure 1 and figure 2 are showing the CT scan images of the brain metastasis. She was treated with palliative radiotherapy to whole brain with 30Gy/10F/2weeks. Surgical excision was not possible due to the associated co-morbid conditions. Her symptoms were resolved following RT and she was asymptomatic for 8 months till the last follow up in Jan 2015.



Fig 1. CT scan image showing mass in cerebellar hemisphere.



Fig 2. CT scan image showing mass in parietal lobe.

DISCUSSION

Overall incidence of brain metastasis from various malignant tumors varies from 13.5% to 37%.^[1] Most frequent sites resulting in brain metastases are lungs, breasts, kidneys and gastrointestinal tract.^[1] Brain metastases from cervical cancer are extremely rare. However, in recent years, an increase in the incidence of brain metastases from cervical cancer has been noted. Improvement in treatment of the cervical cancer results in longer survival of these patients which may be related to this.^[2]

In 1949, Henriksen reported in an autopsy study about a case of cerebral metastasis from cervical uterine cancer.^[3] Occurrence of the brain metastases is uncommon. In various clinical studies, the incidence of brain metastases from cervical cancer has been reported to be about 0.5% to 1.2%.^[4, 5]

The hematogenous route of spread is most common route to the brain from cervical cancer. Development of brain metastases depends on the host immune response, tissue neovascularization, characteristics of the tumor and the number of tumor emboli.^[6] Haematogenous spread

depends on histological type of the tumor. Poorly differentiated tumors have more frequent cerebral metastasis to brain. In present case, tumor was moderately differentiated.

Neuroendocrine carcinomas of the cervix, a rare and aggressive type of tumor, show an increased incidence of metastasis in the central nervous system. Weed and colleagues in a retrospective study of 15 cases of neuroendocrine carcinomas of the cervix, reported the presence of brain metastases in 5 cases (33%). They suggested a possible benefit from prophylactic whole brain radiation to prevent central nervous system metastasis in these cases.^[7] Supratentorial region is most common site of brain metastases are located in the brain, because of vascularity and the spatial characteristics of this region. In present case the tumor was located in the right cerebellum and left parietal (infratentorial) region. Interval between initial diagnosis of cervical cancer and brain metastases is variable, ranging from at the time of initial diagnosis of cancer to 8 years.^[8] The median interval between diagnosis of cervical carcinoma and brain metastases is 18 months. Clinical presentation of a patient with brain metastasis is likely to depend on the site of the lesion. Headache and hemiparesis are the most commonly reported symptoms and signs.^[9] The metastatic tumor, the surrounding tissue edema, or both is responsible for the neurologic symptoms. In this case, because the lesion was located in the left occipital lobe, a disturbance of the visual field was the main presenting symptom. In most of the reported cases, symptoms are sudden in onset and appear severe, as seen in our case.

The treatment of brain metastasis usually involves surgery, radiotherapy and chemotherapy. For solitary lesions, surgical excision is recommended treatment. Multiple lesions may also be surgically removed if they lie close to each other. Radiotherapy can be given as adjuvant therapy also. In many cases, radiotherapy is the only local treatment that can be given either with or without chemotherapy. Palliative radiotherapy to the whole brain is advised in cases where multiple lesions are not adjacent to each other or inoperable. Chemotherapy is considered in patients with multiple lesions, cisplatin being the most frequently used drug.

Brain metastasis from cervical cancer carries a poor prognosis with a limited survival after diagnosis.

Surgical excision, radiation therapy, stereotactic radiation therapy, and chemotherapy have been used for the management of brain metastases with variable success. Overall, however, the prognosis of cervical cancer patients with brain metastases is frequently poor. Median survival of 3 to 6 months has been reported.^[8, 10]

CONCLUSION

In conclusion, the present case provides an example of successful management of brain metastasis in a case of cervical carcinoma, with the use of palliative radiation

therapy only. Palliative radiation therapy may be strongly considered in patients of cervical carcinoma where surgical resection is not possible.

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