Carcinoma of uterine cervix with isolated metastasis to fibula and its unusual behavior: Report of a case and review of literature

ABSTRACT

Bone metastasis from cervical cancer is uncommon, especially in the distal appendicular skeleton. A 36-year-old lady presented with carcinoma of uterine cervix, FIGO stage IIb. She was treated with radical radiotherapy. Nine months later, she developed an isolated lytic lesion in right fibula, which turned out to be a metastatic lesion. The patient is doing well, 3 years after the surgical excision of metastasis. This is one of the few documented cases of metastasis to the fibula, arising from carcinoma of uterine cervix and probably the first with isolated metastasis of this site. Unlike the dismal outcome commonly seen in patients with bone secondaries, she continues to be disease free and alive at 39 months of follow up, after the development of skeletal metastasis.

KEY WORDS: Cervical cancer, bone metastasis, fibula.

INTRODUCTION

Bone metastasis from cervical cancer is infrequent, occurring in 0.8-23% cases. Metastasis has been reported in all bones, with vertebra as the most common site and also in several unusual sites. We report a rare presentation of bone metastasis from cervical cancer, wherein the patient developed isolated metastasis to the fibula. Additionally, the patient responded very well to treatment and continues to be free of disease at 39 months after the diagnosis and treatment of metastatic disease.

To the best of our knowledge, this is the first reported case of localized metastasis to the fibula, arising from cervical cancer.

CASE REPORT

A 36-year-old pre-menopausal lady presented in the outpatient department of Sanjay Gandhi Post Graduate Institute of Medical Sciences, Lucknow, in June 2001, with complaints of bleeding and discharge per-vaginum, for the past 2 months. She also gave a history of post-coital bleeding and menorrhagia, for the same duration. On physical examination, a large proliferative growth was seen arising from cervix and involving both the parametrium, but short of pelvic walls. Biopsy taken from the growth was reported as keratinizing squamous cell carcinoma. Clinically, the patient was diagnosed as having carcinoma cervix, FIGO stage IIb. She was treated with external beam radiotherapy alone, as a part of ongoing randomized trial in the department at that time. She received a dose of 50 Gy in 25 fractions, by 4-field box technique. This was followed by 3 fractions of HDR intracavitory brachytherapy, 1 week apart and a dose of 6 Gy was prescribed to point A, in each fraction. Good response to treatment was seen, with complete regression of growth at the end of treatment.

Nine months later, she developed pain in the right shin. Gynecological and systemic examinations were within normal limits, but there was mild increase in local temperature, along with tenderness of right shin. X-ray examination showed large lytic lesion involving mid third of right fibula. Bone scan showed increased tracer uptake in upper two-third of fibula only [Figure 1]. An orthopedic opinion was sought and the patient was clinically suspected of having osteomyelitis. She was treated with antibiotics, without any relief in her problems. She then underwent a segmental resection of fibula. Histopathological examination of resected specimen showed metastatic squamous cell carcinoma [Figure 2]. Following this, a complete metastatic work-up, including chest X-ray and ultrasound abdomen was done, which showed no evidence of disease elsewhere. She was offered the option of salvage chemotherapy, which she refused. Patient is on regular follow-up since and bone scan and clinical
examination is being done at regular intervals. She is free of disease, both locally and distantly, 48 months after the presentation of primary symptoms.

DISCUSSION

Carcinoma cervix is the most common malignancy prevalent in Indian women, with incidence of 19-44 per 100,000 women.\(^1\) Risk of developing distant metastasis, depends upon the presence of various poor prognostic features, such as advanced stage, endometrial extension and local failure. Metastases from carcinoma cervix are predictable and well studied.\(^4\) Apart from local spread, the disease goes to the pelvic and para-aortic lymph nodes and then by hematogenous route to the supra and intrafriaphragmatic viscera i.e. lungs and liver. The frequency of bone metastasis is less.\(^3\) Abdomino-pelvic CT scan is also recommended in cases of metastasis, to rule out local disease, as more then 50% of these are associated with local / para-aortic recurrences also.\(^4,5\) However, it was not done in this case, as the patient was free of disease on clinical examination and follow-up U.S.G abdomen. Moreover, at the time of presentation of fibular disease, the clinical index of suspicion was more in favour of an infective or unrelated pathology, such as osteomyelitis.

Spread to bones occurs either by direct extension to bone from pelvis tumor, or from soft tissue metastasis outside pelvis and least commonly by hematogenous route. A combination of these mechanisms can be involved in patients having widespread disease.\(^2,3,5\)

Osseous metastasis from cervical cancer has been reported in all axial and peripheral bones. Vertebrae, followed by pelvic bones, are the most common sites of skeletal metastasis. Spread to distal sites such as femur and skull, is considered to be hematogenous.\(^2\)

Metastasis to distal acral skeleton from cancer cervix is rare, with incidence ranging from 0-17%, in all the major series, reporting skeletal metastasis from cancer cervix.\(^2,4\)

Metastasis to fibula is even rarer, occurring in less then 0.2% of patients with bone metastasis.\(^9\) Involvement of skull, ribs, clavicle, scapula, sternum, tarsal, metatarsal and innominate bones, along with metastasis to both tibia and fibula and isolated metastasis of tibia, has been previously documented in literature.\(^5,6,8,10\) but isolated metastasis to fibula from cancer cervix, has not been previously reported. None of the major series report involvement of fibula, except the series by Blythe et al, which reports 2 such cases. It is however not clear from their report, whether these were metastasis localized to fibula alone, or they were the part of widespread metastatic disease.\(^5\) Thus, this is possibly the first reported case of isolated metastasis to fibula, from carcinoma cervix.

Skeletal X-ray and bone scan are useful for evaluation of metastatic bone disease. CT scan may be required to determine the extent of disease, including soft tissue extension.\(^3\)

The prognosis of patients with bone metastasis is poor and most patients die within a year, after the appearance of metastatic lesion. This poor prognosis is uniform and regardless of the duration of disease free interval, or the presence of single or multiple organ metastases.\(^6\) Unlike the previous reports, this patient responded well to treatment and is free of disease, 39 months after detection of bone metastasis. Incidentally, patients of metastasis to tibia, in 2 of the above mentioned series, have fared better as compared to patients having metastasis to other sites, although no explanation has been offered in literature for such an observation.\(^7,8\)

Chemo-irradiation is recommended frequently for treatment of carcinoma cervix.\(^11\) But this patient was initially treated with radiation alone, as she was enrolled in an ongoing clinical trial.
of chemo radiation in our department.

Once the bone lesion is detected, the treatment is directed towards pain relief and radiation is effective as palliative treatment. Considering the short life expectancy of the patient, treatment is directed towards maintaining quality of life, hence a short course of radiation with use of moderate doses from 30-40 Gy is recommended. Surgical management of bone metastasis is contemplated in cases of isolated and relatively localized disease, with patient having good general condition, as in this case. It includes internal fixation of pathological fractures, which can also be done prophylactically, in order to promote early ambulation. This is usually followed by palliative radiotherapy for control of pain and other local symptoms. Combination chemotherapy may also benefit in cases with good performance status and having synchronous involvement of other sites. Local radiotherapy and systemic chemotherapy were withheld in this case, due to reluctance of the patient and complete surgical excision of disease, which, so far, has been beneficial for this patient, although, we would not recommend this approach, in general, for metastatic disease. In fact, this case should be treated as an exception, rather than a rule and patients of metastasis to distal bones should receive chemotherapy following local treatment, as mode of spread in these cases is likely to be hematogenous. In retrospect, we also feel that even in a case of clinically unsuspecting, isolated distal bone lesion, a fine needle cytology may have provided us with valuable information and that could have influenced treatment strategy.

CONCLUSIONS

The incidence of bone metastasis from carcinoma cervix is low and usually holds poor prognosis. This case however highlights the fact, that an isolated, distal bone site may not show poorer outcome, if treated adequately.

REFERENCES