Internet Journal of Medical Update

Journal home page: http://www.akspublication.com/ijmu

Case Report

Humeral Metastasis in a case of Squamous Cell Carcinoma - a Case Report

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(Received 07 April 2010 and accepted 22 May 2010)

ABSTRACT: A rare case of squamous cell carcinoma with metastasis to distal acral skeleton – humerus within two months of diagnosis of the primary is being reported. The metastasis to the bones from carcinoma cervix is uncommon especially in the distal appendicular skeleton. A 47 years female came with spontaneous fracture of right humerus shaft. The tissue from fracture site revealed metastasis of squamous cell carcinoma. X-Ray lung and USG abdomen did not show any organ involvement. She was diagnosed as squamous cell carcinoma cervix stage III B two months before and put on radiotherapy and chemotherapy. This is one of the few documented cases of metastasis to humerus without involvement of lung liver or brain within two months of diagnosis of the primary.

KEY WORDS: ***Carcinoma cervix; Bone metastasis; Humerus; Humeral metastasis***

INTRODUCTION

Carcinoma cervix is the single most common female genital cancer in developing countries[1]. National cancer registry programme showed that cancer of the cervix is the leading site in Bangalore and Chennai and the second leading site in Mumbai & Thiruvanantapuram during the years 2001-03[2]. The incidence of cancer cervix in Loni is 36.07% in the last five years. Routine sites of metastasis are lung, liver, brain. Metastasis to bones is seen commonly in the vertebras. The unusual sites of metastasis are scalp[3], fibula[4], deltoid[5], triceps[6], and abdominal wall[7]. Cancer cervix infrequently metastasizes to bones 0.8-23% cases[3]. To the best of our knowledge, only 5 cases are reported as localized metastasis to humerus arising from cancer cervix. We report a rare presentation of bone metastasis from carcinoma cervix with isolated metastasis to humerus and that too within two months of diagnosis of carcinoma cervix.

CASE REPORT

In June 2009, a 47 years female came with spontaneous fracture of right humerus shaft. X ray confirmed the diagnosis (**Figure 1**). The tissue from fracture site was removed and sent for histopathological examination. Microscopy revealed sheets and nests of malignant squamous cells and confirmed metastasis of squamous cell carcinoma (**Figure 2** and **3**). X-Ray lung and USG abdomen did not show any organ involvement.

She had come in April 2009 with complaints of scanty regular periods, post coital bleeding and dyspareunia since one month. Obstetric history was P_3L_3, all full term normal deliveries. After this, laparoscopic sterilization was done. Other systems did not reveal any abnormality. Per vaginal examination showed a mass protruding from cervix. Routine laboratory investigations were Hb 9.5gms%, TLC 7,100/cu mm and blood sugar 100mg/dl. Ultrasonography showed a heterogenous, predominantly hyperechoic bulky cervix with 4.6 x 4.6 cms round to oval mass also involving lower uterine segment and upper vaginal wall. She was diagnosed clinically as carcinoma cervix III B and was operated upon in April 2009. Gross and microscopic examination confirmed the lesion to be squamous cell carcinoma cervix. She was discharged and put on radiotherapy and chemotherapy.

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Figure 1: X-ray Humerus showing the fracture site with nail inside

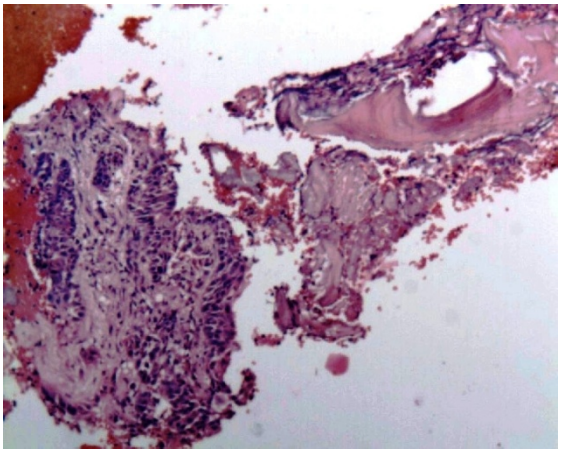

Figure 2: Bone trabeculae with metastasis of SCC (x 100, H & E Stain)

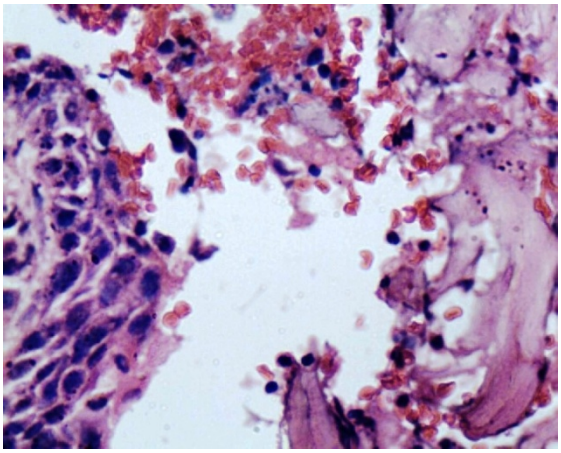

Figure 3: Bone trabeculae with metastasis of SCC (x 400, H & E Stain)

DISCUSSION

The incidence of skeletal metastasis secondary to cervical carcinoma is 0.8 to 23% (mean 4%) according to Blythe et al[8] and 1.8 to 6.6% (mean 4.6%) according to Ratanatharathorn et al[9]. Carcinoma cervix metastasis cases maximally involve axial skeleton. The innominate bone and vertebrae are the most common sites of osseous involvement. But metastasis has been reported in long bones, ribs, cranium mandible, scapula, bones of hand and foot and even the patella- a sesamoid bone[8]. Metastasis to distal acral skeleton from cancer cervix is rare with incidence ranging from 0-17% in all major series, reporting skeletal metastasis from carcinoma cervix[10]. Metastasis to fibula is even rarer, occurring in less than 0.2% of patients with bone metastasis[4]. Metastasis to humerus is very rare. In the series of Blythe et al[8] only 2 out of 66 cases were involved and in the Ratanatharathorn et al series[9] only 3 out of 41 patients showed metastasis to humerus.

The involvement of skeletal system may be by direct extension from parametrial extensions of the primary or recurrent pelvic tumor, direct extension from parenchymal metastasis to distant lymphnodes or lung, regional haematogenous metastasis from Batsons venous plexus, or systemic haematogenous metastasis to distant bones. Out of these modes of spread, direct extension is the most common route. Spread occurs to long bones by haematogenous route. This occurs with involvement of nutrient vessels. It is presumed that when bone is involved other metastatic sites are also involved[8]. But the present study shows only the involvement of humerus. The pelvic bones were not involved.

The most frequent primary tumours to cause metastasis to humerus are those of breast, prostate, kidney, thyroid and lung origin. Prostate and breast metastasis develops most often within the medullary cavity of bone whereas metastasis secondary to kidney lung and thyroid neoplasms may cause pronounced swellings or lesions infiltrating into soft tissue mimicking the usual appearance of a primary bone tumor.[11]

Pain is the presenting feature at the site of bone metastasis and patient rarely presents with pathological fracture. In the studies of Blythe et al[8] only one out of 55 cases presented with pathologic fracture. Osseous metastasis is rare in patients of carcinoma cervix So X-ray is not recommended routinely and is done only in symptomatic patients[12]. The atypical location of pain should alert the physician to suspect distant metastasis.[13] The radiographic appearance of the metastatic lesion is lytic in most cases but osteoblastic lesions have also been reported.

In the studies of Ratanatharathorn et al[9], the interval from diagnosis of primary cervical cancer

to diagnosis of bone metastasis ranged from 0 to 212 months with bony metastasis developing in 75-85% within 3 to 5 years. 13 years was the longest interval of development of metastasis from diagnosis of primary and the earliest was at the time of diagnosis of primary[8]. In the present case, the patient presented with spontaneous pathologic fracture within two months of identification of primary tumor and its treatment (surgical and radiotherapy), which is also very rare.

The incidence of bone metastasis increases generally with the clinical extent of the disease[14]. In rural population carcinoma cervix is neglected and patient usually presents in later stages. Even though the present case was clinically stage III b, the patient presented only with metastasis to the humerus as secondary. As the secondaries spread within medullary cavity rapidly, recommended treatment is local irradiation of entire bone (humerus) with re-irradiation of primary site that had previously received a high dose of radiation. Sling immobilization may also be given[15]. The prognosis of patients with shorter disease free interval after identification of primary tumor is bad. So, palliative radiotherapy can be given in such situations.

CONCLUSION

Metastasis of squamous cell carcinoma cervix to humerus is very rare, especially within two months after the diagnosis of primary.

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