

CASE SERIES

Bony Metastasis of Common Neoplasms to Uncommon Sites.

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Abstract:

The most common malignant neoplasms in bone is metastasis from other sites. They indicate adverse prognosis. Bone metastasis can be solitary or multiple. The majority of bone metastasis are from breast. And the major site of metastasis being axial skeleton.

Herein we report three cases in which two female and one male patient developed bony metastasis at rare sites - fibula, iliac bone and occipital condyle. As in all our 3 cases metastasis to unusual sites should be considered if the patient has previous history of a carcinoma. If it is an occult primary, radiological findings may be the first clue. The prognosis of patients with bony metastasis is usually poor as it occurs in advanced stages. Surgical management can be done in isolated cases followed by localized radiotherapy. Systemic chemotherapy can be added if there is synchronous involvement of other sites.

Keywords: Bone, metastasis, common neoplasms, uncommon site.

Introduction:

Bone is the third most frequent site of metastasis, first and second being lung and liver respectively. When located in long bone, the area most commonly involved is the metaphysis. The carcinomas that most commonly metastasize to bone are from breast (65-75%), prostate (65-75%), thyroid (60%), lung (30-40%) and kidney (20-25%) [1]. More than 70% of them affects the axial skeleton. Our case series is important as it reports unusual sites of bone metastasis like - fibula, iliac bone and occipital condyle.

Case Presentation:

Case 1: Primary cervical cancer with metastasis to right fibula:

A 66 year old female with history of carcinoma cervix stage IIIa (post radiotherapy) presented with pain and swelling right ankle of 1.5 months duration in January

2020. On examination she was found to have right lower limb sensory motor neuropathy. MRI right ankle showed an ill-defined expansile lytic lesion involving distal end of fibula. PET CT showed FDG avid focal enhancing lesion in right side of cervix, suggesting a recurrence. Distal end of fibula also showed lytic lesions (Fig. 1a). The patient was admitted and underwent CT guided biopsy of right fibula. Imprint smear showed few atypical cell clusters (Fig. 1b). The biopsy revealed Squamous cell carcinoma deposits (Fig. 1c). She underwent radiotherapy and is currently on palliative chemotherapy.

Case 2: Adenoid cystic carcinoma with metastasis to right iliac bone:

A 54 year old man presented to Ortho OPD with right hip and gluteal region pain of 1 month duration in February, 2020.

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On examination, he had tenderness over anterior superior iliac spine with local raise in temperature. MRI showed lytic lesion on right iliac bone and roof of acetabulum. Further evaluation showed a soft tissue mass in right lung of size 5 x 4.2 cm. A provisional diagnosis of metastasis/ malignancy was made. The patient underwent a CT-guided biopsy of the iliac bone lesion. The imprint smear showed atypical cell clusters oriented around solid spheres of homogeneous eosinophilic material (Fig. 2a). The biopsy revealed adenoid cystic carcinoma (Fig.2b).

Case 3: Thyroid carcinoma metastasis to right occipital condyle

A 61 year old female presented with pain and restricted movements of neck for 2 years,, blurring of vision and slurring of speech of 1 month duration

in March, 2020. She also gives a history of 1 episode of loss of consciousness. On examination mild tenderness was present over cervical spine. A clinical provisional diagnosis of Giant cell tumor of bone was made. CT chest showed multiple lung nodules - ? Pulmonary metastasis. MRI brain (Fig. 3a) and PET CT showed FDG avid lytic lesion of C1 vertebral body with adjacent soft tissue involvement and also involving the Right occipital condyle-? Primary neoplastic lesion.

Tru-Cut biopsy was taken from the lesion in the right occipital condyle showed features of thyroid carcinoma (Fig.3b). Immunohistochemistry confirmed the diagnosis (Fig. 3c). Total thyroidectomy done, which showed Follicular variant of papillary thyroid carcinoma (Fig. 3d).

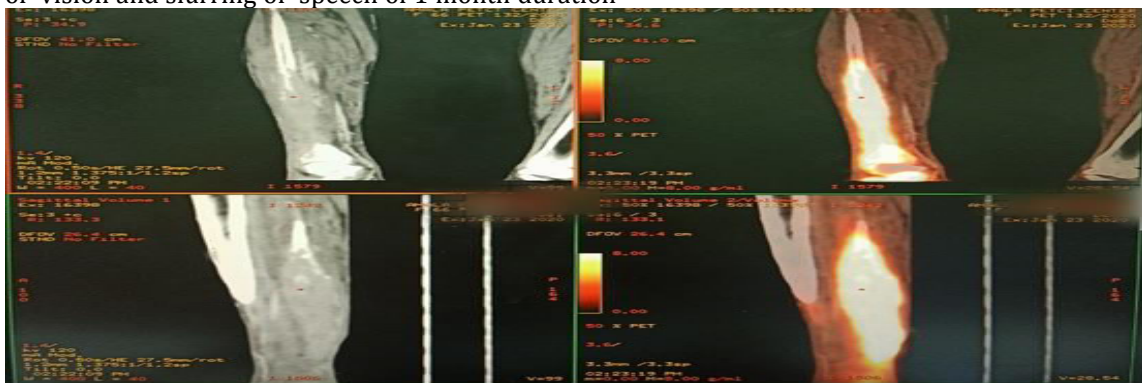


Fig. 1a. PET-CT image showing FDG avid destructive lytic lesion with soft tissue is seen involving mid & lower right fibula.

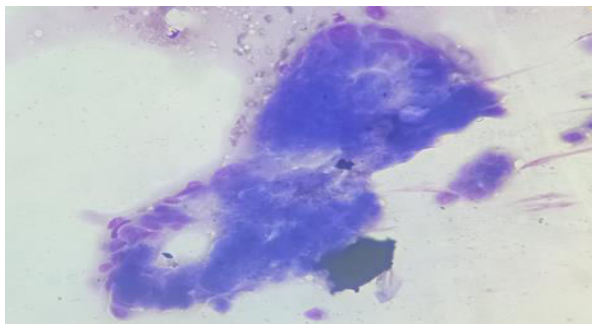


Fig.1b. Imprint smear from right fibula showing few atypical clusters of cells having pleomorphic hyperchromatic nuclei and moderate amount of cytoplasm (MGG, X40).

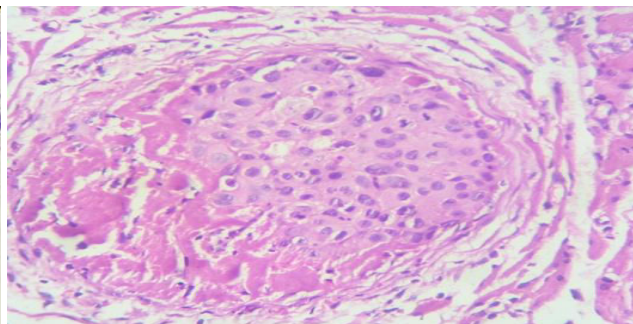


Fig.1c. Nests of tumour composed of malignant squamous epithelial cells with moderate nuclear pleomorphism & eosinophilic cytoplasm (H&E, X40).

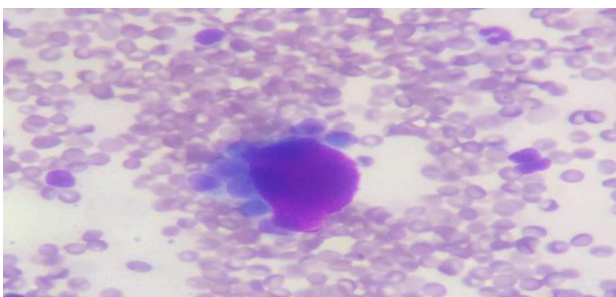


Fig. 2a. Epithelial cell clusters oriented around solid spheres of basement membrane material (MGG, X40)

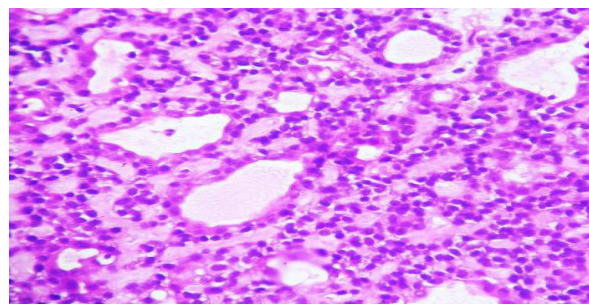


Fig. 2b. Tubular pattern of Adenoidcystic carcinoma depicting inner ductal & outer myoepithelial layer

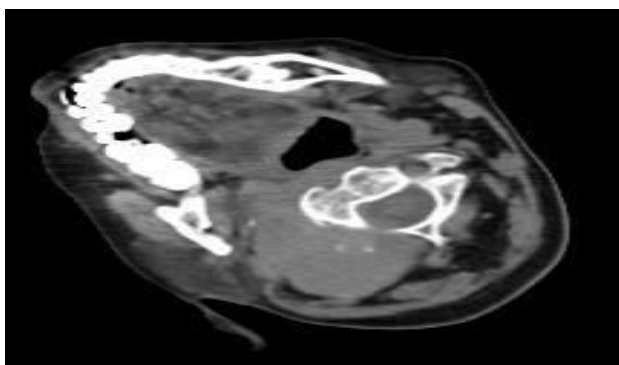


Fig. 3a. MRI Brain: Bony metastatic expansile lesion involving right occipital condyle & C1 body.

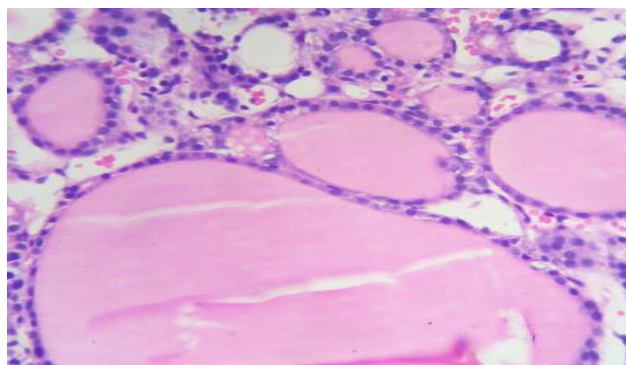


Fig. 3b. Trucut biopsy showing multiple colloid-filled follicles (H&E, X10).



Fig. 3c. IHC panel

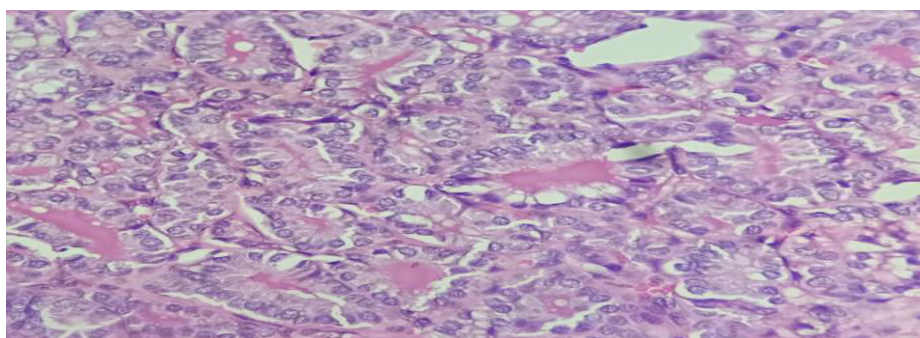
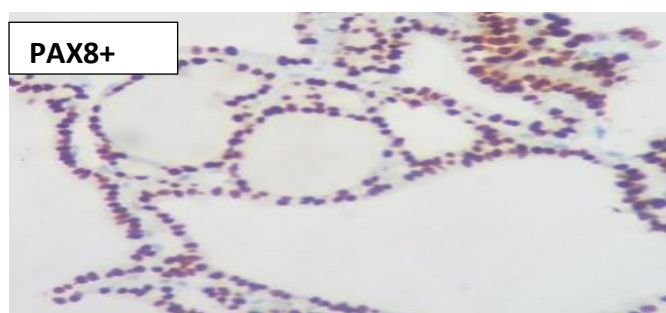


Fig. 3d. Follicular variant of papillary thyroid carcinoma showing columnar to cuboid cells with ovoid to round vesicular nuclei arranged in a follicular pattern (H&E, X40).

Discussion:

Bony metastasis can significantly impact patient functioning and may even be the presenting complaint of an underlying malignancy as in two of our cases. In our cases the patients presented with bony metastasis to unusual sites which makes it even more difficult to diagnose in the first instance.

Squamous cell carcinoma cervix usually spread via peritoneum through lymphatic to supraclavicular, mediastinal or distant lymph nodes, lung and liver. Metastasis to bone in cervical cancer is uncommon, and indicates advanced stage with worse prognosis [1]. Incidence of cervical cancer metastasis to bone ranges from 1.8% to 6.6% [1]. It usually involves the axial skeleton, mainly the spine, pelvis and ribs [2]. Metastasis to the appendicular skeleton are very rare.

Even rarer is metastasis to fibula in patients with bony metastasis which is less than 0.2% [3]. Our case also belongs to this category. Metastasis is usually with poorly differentiated morphology and carries a poor prognosis [4].

Adenoid cystic carcinoma is a malignant tumor characterized by its propensity of perineural invasion, slow growth, high frequency of local and distal recurrence and poor prognosis. Lung is the most common site of distant metastasis. Occasionally it may arise from posterior mandible also. Bone metastasis is associated with worse prognosis than pulmonary metastasis [5]. The solid variant of adenoid cystic carcinoma develops distant metastasis most rapidly and indicates a poorer prognosis than the cribriform and tubular types [6]. The survival of

patients is better in patients with lung metastasis compared to bone metastasis [5].

Differentiated thyroid carcinoma commonly metastasizes to the regional lymph nodes, lungs, and bone [7]. At the time of initial diagnosis 1-3% of patients will have distant metastasis and this especially involving the bone will increase the mortality rate. Spine and femur are the most common sites of bony metastasis. The higher occurrence is with papillary carcinoma. Another complication is Occipital Condyle Syndrome (OCS) and can be seen in patients with skull base metastasis from tumors of lung, GIT, prostate etc. It has also been reported in association with thyroid carcinomas though rare [7, 8]. OCS is characterized by severe and persistent unilateral sub occipital headache with unilateral hypoglossal nerve palsy leading to slurring of speech and deviation of tongue to opposite side on examination [8].

Conclusion:

As in all our 3 cases metastasis to unusual sites should be considered if the patient has previous history of a carcinoma. If it is an occult primary, radiological findings may be the first clue. The prognosis of patients with bony metastasis is usually poor as it occurs in advanced stages. Surgical management can be done in isolated cases followed by localized radiotherapy. Systemic chemotherapy can be added if there is synchronous involvement of other sites.

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References:

1. Matsuyama T, Tsukamoto N, Imachi M, Nakano H. Bone metastasis from cervix cancer: Gynecol Oncol. 1989;32(1):72-5.
2. JG B, MH C, HJ B, HB L. Bony Metastases From Carcinoma of Cervix. Occurrence, Diagnosis, and Treatment: Cancer. 1975;36(2).
3. Vanecko RM, Yao ST SR. Metastasis to the fibula from endometrial carcinoma. Report of 2 cases: Obs Gynecol. 1967;29(6):803-5.
4. Abdul-Karim FW, Kida M, Wentz WB, Carter JR, Sorensen K, Macfee M, et al. Bone metastasis from gynecologic carcinomas: A clinicopathologic study: Gynecol Oncol. 1990;39(2):108-14.
5. Myung-Whun Sung, Kwang Hyun Kim J-WK. Clinicopathologic Predictors and Impact of Distant Metastasis From Adenoid Cystic Carcinoma of the Head and Neck: Arch Otolaryngol Head Neck Surg. 2003;129:1193-7.
6. Stewart J. Carcinoma of salivary glands showing the cylindroma pattern: Br J Surg. 1961;49(215):241-5.
7. Tunio MA, Al Asiri M, Al-Qahtani KH, Aldandan S, Riaz K, Bayoumi Y. Skull base metastasis from papillary thyroid carcinoma: A report of three cases: Int Med Case Rep J. 2015 Jun 25;8:127-31.
8. Balasubramanian Harisankar C, Vijayabhaskar R, Muthukumaran S, Kumar K. Occipital condyle syndrome caused by isolated bone metastases from thyroid cancer: Indian J Nucl Med. 2019 Jan 1;34(1):48-50.

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