A RARE CASE OF ADENOCARCINOMA LUNG WITH SECONDARIES TO PROXIMAL ULNA

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ABSTRACT
Metastasis of lung carcinoma to proximal ulna is very rare. We report a case of 55 year male patient with adenocarcinoma of lung, with metastasis to proximal ulna.

Keywords: adenocarcinoma lung, metastasis.

INTRODUCTION
Bone is one of the most common locations for metastasis\(^1\). While any type of carcinoma is capable of forming metastasis within bone, the microenvironment of the marrow tends to favor particular types of cancer, including prostate, breast, and lung carcinoma\(^2\). Particularly in prostate carcinoma, bone metastases tend to be the only site of metastasis\(^3\). Bone metastases most commonly affect the axial skeleton. The axial skeleton contains the red marrow, while appendicular skeleton contains relatively fatty marrow\(^4\). The drainage of blood to the skeleton via the vertebral-venous plexus may, at least in part, explain the tendency of breast and prostate, kidney, thyroid, and lung cancers, to produce metastases in the axial skeleton and limb girdles\(^5\). The vertebral-venous plexus does not provide the entire explanation of why these cancers metastasize to the skeleton. Molecular and cellular biological characteristics of the tumor cells and the tissues to which they metastasize are of paramount importance and influence the pattern of metastatic spread\(^6,8\). Skeletal metastases account for 70% of all malignant bone tumours\(^9\). The incidence of bone metastases from lung carcinoma is 36%\(^10\). The frequency of bone metastasis is significantly higher among patients with adenocarcinoma than small cell or squamous carcinoma\(^11,12\). Because of the relatively avascular marrow, metastases below the elbow and knee are relatively rare\(^13\). No case report of adenocarcinoma lung with secondaries to proximal ulna is published till date except in felines\(^14\).

CASE REPORT
A 55 year old male patient came to department of Orthopaedics with complaints of pain and swelling at right elbow and forearm since 2 months which is insidious in onset and gradually progressing. Pain is of diffuse in elbow region, stabbing in nature, non-radiating, severe with movements of elbow, and rated 7/10 on a visual analogue score. Patient had no history of trauma. Additional symptoms included mild shortness of breath. Patient is a smoker (1 packet beedies/day) and alcoholic (90 ml/day). The patient was afebrile. Vital signs were normal. Respiration is 19 cycles per minute. On auscultation of lungs, there is mild decrease in breath sound on right side of chest. On inspection of the forearm, there is diffuse swelling at right elbow and forearm of size 12x6 cms. Skin over swelling darkened, shiny. No scars, no sinuses, no visible pulsations. On palpation, local rise of temperature present. Severe tenderness present over olecranon which is irregular in outline. Radial head is not palpable.
Swelling is hard to firm in nature, pitting edema present, skin not pinchable over swelling. Distal radial pulse felt. No distal neurological deficits. Mild decrease in flexion of elbow and other movements are normal. Radiographs of right forearm showing osteolytic lesion of proximal ulna extending into diaphysis (Figure 1 & 2). Articular surfaces are maintained. Radiograph of chest showing radio dense lesion in right lung (Fig 3). FNAC Smears (Figure 4) from lytic lesions of right ulna shows abundant cellularity of cuboidal cells arranged in small and large clusters, sheets and papilloid structures and also scattered discretely. At places, these cells show acinar or microfollicular arrangement. The nuclei are large hyperchromatic with well dispersed chromatin and prominent nucleoli cytoplasm is densely eosinophilic. These features suggestive of metastasis of adenocarcinoma of lung to proximal ulna. The FNAC report of right supraclavicular lymphnodes shows same features. Patient was referred to cancer trust hospital for further management.

Figure 1: Antero-posterior radiograph of forearm showing osteolytic lesion of right proximal ulna

Figure 2: Lateral radiograph of forearm showing osteolytic lesion of right proximal ulna
Figure 3: Chest radiograph showing radiodense lesion in right lung

Figure 4: Clusters of cuboid cells
Figure 5: Cuboid cells with eosinophilic cytoplasm

DISCUSSION
Lung cancer can metastasize to virtually any bone, although the axial skeleton and proximal long bones are most commonly involved\textsuperscript{15}. Metastatic tumor cells colonize the bone matrix and stimulate the activity of osteoclasts and/or osteoblasts, causing osteolysis and possible excessive bone formation around sites of tumor cell deposits in bone. This disruption in bone metabolism leads to significant skeletal morbidity most commonly bone pain\textsuperscript{16}. To our knowledge, this is the first case report of adenocarcinoma lung metastasis to proximal ulna.

CONCLUSION
Metastasis of adenocarcinoma to ulna is very rare.

REFERENCES