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Case Report

Oncology Section

Digital Acrometastasis as Initial Presentation in Carcinoma of Lung A Case Report and Review of Literature

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ABSTRACT

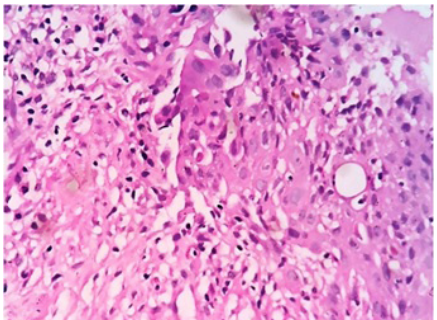
Bony metastases develop in 30% of all the cancers, but out of which only 1% to 3% occurs in the hand. Lung is the most common site for acrometastasis, followed by breast and renal cell cancer. Metastases to the digits are with non-specific presentation. We reported a case of 79-year-old male patient with initial presentation of swelling over left index finger, which was found to be squamous cell carcinoma of finger on histopathological examination. He was subsequently diagnosed as a case of squamous cell carcinoma of lung with acrometastasis.

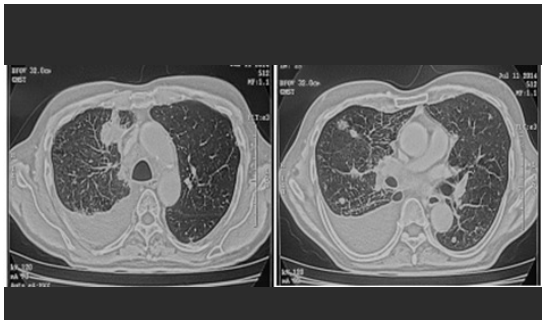
Keywords: Amputation, Bony metastases, Lung cancer

CASE REPORT

A 79-year-old male patient initially presented with cystic swelling over left finger since 7 days. He had history of percutaneous coronary angioplasty (PTCA) done 7 years back and present echocardiography showed post PTCA status with ejection fraction 43% and hypokinesia of inferior and lateral wall. The patient had no past history of trauma to left hand, diabetes mellitus or tuberculosis. The present blood sugar level was within normal limit. At the initial presentation the possible differential diagnoses were infections, trauma, inflammatory arthritis, osteomyelitis, or gout. The present case due to clinical findings of erythema, swelling, pain and tenderness suspected as infectious cyst. The patient received oral antibiotic therapy with partial response. Cyst removal was done and histopathological examination revealed squamous cell carcinoma [Table/Fig-1]. Subsequently, X-ray of left hand was done and showed lytic lesion in the distal phalanx of left index finger with soft tissue component [Table/Fig-2]. Amputation of the finger was done and histopathological examination revealed as moderately differentiated squamous cell carcinoma infiltrating bone with tumour thickness of 6mm. Immunohistochemistry study was TTF-1 (thyroid transcription factor) positive and primary may be lung or thyroid. He developed radiating pain to pelvis and bilateral lower limbs. Physical examination showed only tenderness over lumbar spine area. Subsequently, Contrast enhanced CT scan showed a mass of size 3.2x3 cm in anterior segment of right upper lobe lung with mediastinal lymphadenopathy, multiple lung parenchymal metastatic lesions, right pleural effusion, multiple osteolytic lesions in dorsal (D7) and lumbar (L1, L2) vertebrae [Table/Fig-3]. MRI scan of spine showed multiple spine metastases [Table/Fig-4]. Patient was provisionally diagnosed as metastatic squamous cell carcinoma of finger with possible primary from lung. Due to presence of TTF-1 marker on immunohistochemistry study, right lung mass on CT scan and multiple osteolytic spine lesions on MRI scan, the patient was finally diagnosed as carcinoma of lung with acrometastasis and spine metastasis. He received palliative radiotherapy of 30GY in 10 fractions to thoracic and lumbar spine by Co60 teletherapy machine. Due to co-morbid condition, patient and his attendant refused to give consent for further palliative chemotherapy. Patient was treated with supportive care and pain management.

[Table/Fig-4]: MRI scan of spine showing seventh dorsal vertebra, first and second lumbar vertebral metastases.





[Table/Fig-1]: H & E stain 400X showing Pleomorphic Malignant squamous cells in sheets with hyperchromatic nuclei and scattered mononuclear inflammatory cells.
[Table/Fig-2]: X-ray of the left hand showing a lytic lesion with soft tissue component in the distal phalanx of index finger.
[Table/Fig-3]: Contrast enhanced CT scan showing an irregular heterogenous enhancing mass of size 3.2x3 cm in anterior segment of right upper lobe with multiple lung parenchymal metastatic lesions, and right pleural effusion.

DISCUSSION

Bone metastasis occurs in 30% of patients with cancer, but only 1% to 3% occurs in hand [1]. The axial or appendicular bones, especially spine are common site of bony metastasis. Acrometastasis are rare situations and also, acrometastases as initial presentation is very rare. Seventy-five percent of the metastases to the hand are phalanges, followed by metacarpals and carpals. Ten percent of the cases show metastases to both the hands [2].

Lung is the most common primary for acrometastasis (40-50%) [3]. One out of 500 cases of bone metastases in lung cancer present with metastases to phalanges [4]. It carries very poor prognosis with a mean survival of less than six months [5]. Squamous cell carcinoma is the most common type of histology as in the present case, although few small cell carcinoma types have been reported in the literature. Breast cancer (15%) and renal cell cancer (10%) are next common type of cancers for acrometastases. Among hand metastases, phalanges are most common followed by metacarpals and carpals. Metastasis to the hands are most commonly seen in bronchogenic carcinomas, whereas, foot metastases are caused by primary tumour in genitourinary and gastrointestinal tracts [6]. Phalanges in the hand and tarsal bones in the foot are most commonly involved in such rare situations [6]. The present case was found to be an acrometastasis of distal phalange with squamous cell histology and subsequently diagnosed as primary from lung supporting the literature.

Mechanisms for acrometastasis are not well defined. Some theories may explain it, such as: hematopoetic dissemination, minor trauma, and repeated unnoticed trauma [7]. Minor trauma may contribute in the pathogenesis as recent literature shows the dominant hand i.e. right hand more frequently develops acrometastasis. Repeated unnoticed trauma may lower local tissue resistance increasing chance of malignant cell implantation. Haematopoetic dissemination may occur by chemotactic factors like prostaglandins by which malignant cells migrate and adhere to distant skeleton [2].

Usually, acrometastasis presentations mimic as infectious or inflammatory disease and occur infrequently. In such type of presentation, the diagnosis is often delayed especially when primary is not suspected as in the present case. Treating physicians usually do not suspect acrometastasis due to presentation of swelling, erythema, tenderness and loss of function favours infectious etiology and also due to rarity [8]. The present case due to finding of cystic swelling over left index finger was initially suspected as infectious etiology. The acrometastases can mimic many skin lesions like pyogenic granulomas, acute paronychial infections, contact dermatitis, osteomyelitis, gout, erysipelas and herpes zoster [2,9]. Metastases to the digits may initially arise in bone with gradual increase in size and involvement of skin or it may involve skin first [10]. Swelling, erythema, pain and fluctulence are the typical clinical findings for acrometastasis as initial presentation, but it may variable. Reports suggested every 1 in 9 cases were treated initially as inflammatory conditions. Primary tumours of hand like squamous cell carcinoma and multiple myeloma can cause lytic lesions of bones. In most of the cases X-ray findings show lytic lesions without periosteal reactions or joint involvement. Such findings help radiologically to differentiate primary malignant tumours from oseomyelitis. The present case on initial postoperative finding of squamous cell carcinoma creates confusion whether it is the primary lesion of the index finger or metastatic one. Subungal and giant acral melanomas may present as ulcerative lesions in finger with lytic bony findings [11]. Diagnosing acrometasis and finding a primary as lung is difficult as in our case.

Radical surgery is the treatment of choice for acrometasis. Amputation is the preferred option for acrometastasis as most of the cases are seen in terminal digits [2]. Systemic chemotherapy and radiotherapy are the possible options in cases where amputation causes loss of function of the hand and also in proximal or multiple lesions [2]. The prognosis is very poor even after appropriate treatment as most of the cases present with widespread disease, as in our case. In our case, amputation of the index finger was performed. Subsequent investigation showed multiple spine metastases, for which he received palliative radiotherapy to the spine. Patient refused for further palliative chemotherapy and was advised for hospice care.

CONCLUSION

Chronic infection of the hand being not successfully treated by antibiotics needs careful complete investigation to rule out other possibilities. A chronic acral lesion may be metastatic in asymptomatic or in already diagnosed case of cancer. TTF-1 marker is an important tool in the confirmation of the diagnosis of acrometastasis with the primary being lung. Prognosis of acrometastasis with lung primary is not established due to the extremely rare finding and needs further evaluation.

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