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Case Report

RCC masquerading as fracture of humerus

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Abstract

Renal cell carcinoma is 2nd most common of genito urinary malignancies. With the advent of radiological imaging the presenting triad of fever, haematuria and abdominal mass is rarely seen. Osseous metastases of renal cell carcinoma (RCC) are the second most frequent location after lung metastases. They rarely present as isolated location. We present here a case of Renal Cell Carcinoma presenting as fracture of right humerus.

Keywords: Renal Cell Carcinoma, Isolated bony metastasis, Fracture humerus

1. Introduction

Renal Cell Carcinoma (RCC) is 2nd most common malignancy of genito urinary tract and has the poorest prognosis of all urological tumors. Its usual presentation as typical triad of fever, haematuria and mass per abdomen has decreased in incidence over a period of last two decades since they are detected incidentally by radiology means. It often causes metastatic lesions in the lungs and bones. Though bony metastases are second only to lung metastases, bony lesions rarely are the primary signs of RCC. We report a case of RCC with right humerus metastasis that was detected before the primary tumor was diagnosed; there was no other organ involvement. RCC presenting as fracture humerus due to metastatic lytic bone lesion is very rare and to our knowledge not a single case has been reported in literature.

2. Case Report

A 70 year old man, presented to emergency medicine department with fracture of the right humerus, following a trivial trauma. X-ray of right humerus (Figure 1) showed evidence of fracture with an osteolytic lesion, suggestive of metastasis. The patient however, did not have any other complaints, suggestive of an underlying malignancy.

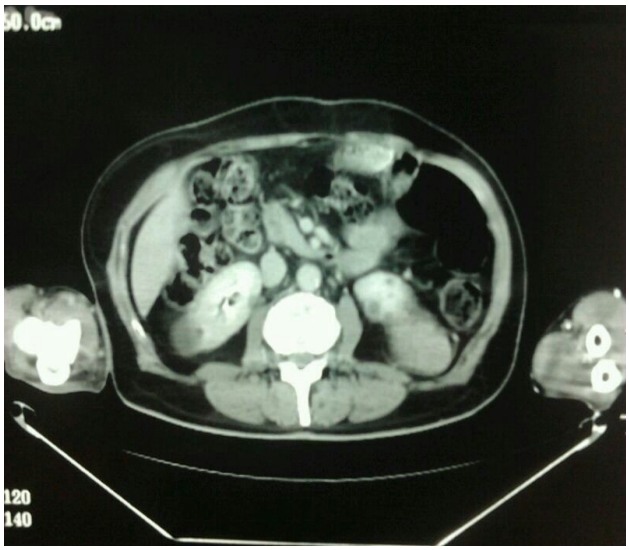
Ultrasound of the abdomen revealed a hypoechoiec mass measuring 4x5cm arising from lower pole of left kidney. CT abdomen revealed a heterogeneously enhancing lesion measuring 4.5x5.2 cm arising from the lower pole of left kidney (Figure 2), suggestive of renal cell carcinoma. Other organs like liver, spleen and opposite kidney were normal. Chest X-ray didn't reveal any metastatic deposits. Liver function tests and Serum Calcium were within normal limits. Bone scan showed metastases in right humerus, no other sites of increased bony uptake seen.

Wide excision of metastatic lesion with intramedullary nailing of the fractured right humerus was done, followed by a laparoscopic left radical nephrectomy. Post operative period was uneventful.

Histopathology of resected tumour specimen showed renal cell carcinoma of conventional type, Grade G2. Renal vein was free of tumour thrombi. Ureteric margins free of tumour. No lymph nodes were positive for metastatic deposits of the 6 lymph nodes present.

Figure 1. X-ray of right humerus

Figure 2. CT of abdomen



3. Discussion

Renal cell carcinoma (RCC) is one of the most frequent malignancies of the genitourinary tract having the poorest prognosis of all urologic tumors. It is seventh leading cause of cancer deaths. Due to the sequestered location of the kidney, many renal masses remain asymptomatic and non palpable, until they are advanced.

Symptoms of RCC can be due to local tumour growth, haemorrhage, paraneoplastic syndromes or metastatic disease. The classic triad of flank pain, gross hematuria and palpable abdominal mass is now rarely found.

Bone metastases (BM) are next most common after pulmonary metastasis. Bony lesions rarely are the primary signs of RCC. Isolated BM is rare in RCC accounting for 0.7-2.5%.[1] Of these, rib metastases are more common. Scapular metatstases are also commonly reported.[2] Isolated metastases to humerus are not reported in literature, as to our knowledge.

In one study 73% of cases without lung metastases there were none in other sites, and in 84% of those with lung metastases there were others elsewhere, consistent with a metastatic "cascade" in which metastases first developed in the lungs and were later detected in other organs.[3]

The survival rate of the cases with bony metastasis is better than that of lung, especially with solitary metastatic cases.[4] Radical surgical treatment is considered the best approach for isolated BM of RCC. In fact, compared to other therapeutic approaches, wide surgical resection provides the best five-year survival rates.[5] Wide resection of metastatic lesions and stabilization may be necessary to prevent local disease progression and complications.[6]

Wide resection results in decreased local recurrence and revision surgeries. However, it does not reliably predict improved survival.[7] Isolated bone metastasis is reported to be a good prognostic factor, with five-year survival varying between 30% and 60%.[1] In metachronous lesion to bone 5 year survival is around 54%.[8]

The overall five and ten-year survival rates are respectively 83 and 66.7%.[5]

The mechanism of cell tumor spread to bone is still unknown. Hematogenous is still the most commonly held hypothesis of tumor cell spread. Lymphatic spread could be another mode of cancer cell dissemination. Renal lymphatic drainage is mostly directed to the thoracic duct. Renal tumor cells can further flow into the blood circulation.[5]

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