Hand metastasis: an unusual presentation of renal cell carcinoma

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Introduction

Metastatic spread of cancer to the hand is unusual, representing only 0.1% of all cancer metastases [6]. We describe a rare case of a swelling in the hand, which was the first presentation of metastatic renal cell carcinoma (RCC) in a patient with a solitary kidney. This case report outlines the systematic investigative pathway which was needed to reach the diagnosis and the multi-disciplinary approach to the management of this condition.

Case Report

A 71-year-old man presented with a 6-month history of swelling and pain in his right hand, which apparently developed after minor direct trauma to the hand. Having undergone a previous splenectomy and left-sided nephrectomy following a gunshot injury more than 40 years previously, he was fit and well.

On clinical examination, a 2-cm, bony-hard swelling on the dorsum of his right hand arising from the fourth metacarpal base was found. The swelling was not warm or tender. The skin over the swelling was normal. There was

no regional lymphadenopathy. The hand has no neurovascular deficit, and a full and pain-free range of movement of the wrist and fingers was demonstrated.

Plain radiography showed an osteolytic lesion at the base of the fourth right metacarpal bone (Fig. 1). Magnetic resonance imaging (MRI) showed a 2.1×1.8 cm lobular mass arising from the base of the fourth metacarpal bone (Fig. 2a, b). Haematological investigations, including inflammatory markers, were within normal limits. Histology of the lesion from computed tomography (CT)-guided biopsy showed metastatic poorly differentiated adenocarcinoma of unknown primary.

A subsequent CT of the chest, abdomen and pelvis showed a tumour at the lower pole of his solitary right kidney with further left-sided pleural metastatic deposits (Fig. 3). A bone scan showed further metastases in his right posterior sixth rib and T6 vertebra. A diagnosis of renal cell carcinoma (RCC) with multiple bony and pleural metastases was made.

The urology multi-disciplinary team determined that in the face of only a solitary kidney, cyto-reductive surgery was not suitable. The oncologists commenced palliative radiotherapy for his metastases and palliative systemic chemotherapy. The fourth metacarpal lesion was scored seven on the Mirels score. The hand lesion did not require surgical treatment or splintage as the patient had pain-free wrist and finger movements. His hand metastasis did not progress or become more painful during the course of the palliative treatment. The patient is alive 13 months following the diagnosis of metastatic RCC.

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Fig. 1 Plain radiography showing a lytic lesion at the base of the right fourth metacarpal bone

Fig. 2 (a) Coronal and (b) axial magnetic resonance imaging views showing a lobular mass at the base of the right fourth metacarpal bone

Fig. 3 Computed tomography imaging showing a tumour at the lower pole of the solitary right kidney

Discussion

Within the hand, the commonest site of metastatic spread is to the distal phalanx, although metastases to each of the bones within the hand have been reported [6]. Lung cancer metastases to the hand are well-recognised and seen in 0.2–0.6% of cases [4]. About 20% of patients with RCC have metastatic disease at diagnosis [5, 7].

RCC accounts for 2–3% of malignant adult tumours [8]. However, only 10% of cases present with the classical triad of haematuria, flank pain and an abdominal mass. Patients with RCC may present with non-urolological symptoms of metastatic disease. Bone metastases account for a third of all metastases from RCC [1]. Hand metastases after previous nephrectomy for RCC have been previously reported [2, 3]. The apparent history of trauma elicited from the patient followed by the finding of a hand swelling and bony destruction on x-ray may result in the misdiagnosis of osteomyelitis [1]. Surgical stabilisation of the hand metastases may be required if there is a progressive painful lesion or a painful non-union. Radiotherapy may also be needed to control pain and progression of the lesion.

This case reflects the unusual manifestation of RCC presenting as a hand swelling. It is important to maintain a high index of suspicion regarding the possibility of new bony hand lumps being malignant or metastatic lesions especially in adults. A biopsy diagnosis of metastatic carcinoma of unknown primary warrants further investigations including a calcium profile, myeloma screen, prostate-specific antigen, inflammatory markers and CT scan of the chest, abdomen and pelvis as well as a bone scan to establish the site of the primary tumour and the disease stage. This case also illustrates the need for a multi-disciplinary team approach in the

management of metastatic RCC in a patient with a solitary kidney.

Conflicts of Interest The authors declare that they have no conflicts of interest, commercial associations or intents of financial gain regarding this research.

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