Case Study: Uncommon Manifestation of Advanced Renal Cancer

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Abstract

In this specific case inquiry, we take a look at a 55-year-old man with hypertension who presented with an unusual kind of advanced kidney cancer. The patient first complained of extreme lethargy, a marked decrease in body weight, and an ongoing cough; nevertheless, there were no traditional signs of kidney disease, such as blood in the urine or discomfort in the flanks. A CT scan confirmed lung nodules and a 4 cm renal mass, a chest X-ray showed several nodular opacities, and a blood test showed high ESR and CRP levels; the patient also had minor liver enlargement, according to the clinical examination. Biopsies of the renal mass and lung nodules verified the presence of clear-cell renal carcinoma with pulmonary metastases. Supportive therapy for the patient's anaemia and cough was administered with sunitinib, a tyrosine kinase inhibitor. Quality of life improved, renal disease remained constant, and pulmonary lesions regressed significantly at the three- and six-month follow-ups. In patients presenting with unusual symptoms of advanced kidney carcinoma, this example emphasizes the need for thorough diagnostic imaging and interdisciplinary treatment. The results for patients may be greatly improved with early diagnosis and tailored treatment.

Keywords*: advanced renal cancer, unusual presentation, clear cell renal carcinoma, pulmonary metastases, diagnostic imaging, CT scan, biopsy, sunitinib, targeted therapy*

Introduction

The most prevalent form of kidney cancer in youngsters is renal cell carcinoma (RCC), which makes up around 2-3% of all malignancies in people. Blood in the urine, discomfort in the flanks, and the presence of a tumour in the abdomen are the classic signs of advanced renal cell carcinoma. Additional testing usually results in a diagnosis when these characteristic symptoms are present. Atypical appearances and unpredictable behaviour are hallmarks of renal cell carcinoma (RCC), which may make diagnosis more difficult and postpone therapy until it is no longer effective.

Mysterious weight loss, exhaustion, and night sweats are examples of non-specific systemic symptoms that might manifest as atypical presentations of advanced renal cell carcinoma (RCC). Furthermore, symptoms associated with metastases, rather than the primary tumour, may manifest in patients with metastatic renal cell carcinoma (mRCC). Metastases may spread to many organs and tissues, the most common of which are the lungs, the bones, the liver, and the brain. The symptoms of chronic coughing, shortness of breath, and chest discomfort that may accompany renal cell carcinoma (RCC) metastasis to the lungs are often misunderstood as illnesses affecting the original lungs.

A careful patient history, physical checkup, and suitable imaging investigations are all part of a complete and accurate diagnosis. This is especially important given the wide variety of symptoms that might

manifest. Computing tomography (CT) and magnetic resonance imaging (MRI) are essential advanced imaging methods for localizing the primary tumour and metastases. Confirming the diagnosis and determining the histological subtype when making treatment options is crucial. Biopsies of the central lesion and metastatic locations are also necessary.

A 55-year-old male patient with advanced kidney carcinoma presents unusually in this case study. Initially, the diagnosis was complicated because the patient had systemic symptoms and lung findings that did not match the usual indications of renal cell carcinoma. Highlighting the challenges and difficulties in handling such unusual instances of advanced kidney carcinoma, the next sections will describe the patient's clinical scenario, diagnostic examination, treatment plan, and follow-up.

Case Description

Patient Profile:

- **Age:** 55 years
- **Gender:** Male
- **Medical Background:** Hypertension, managed with medication; no significant family history of cancer.

Initial Symptoms: The patient reported fatigue, a significant weight loss (approximately 10 kg over three months), and a persistent cough. There was no history of blood in the urine, side pain, or noticeable abdominal mass.

Clinical Examination: Physical examination revealed mild liver enlargement but was otherwise unremarkable. No palpable lymph nodes or masses were detected.

Diagnostic Investigations

Blood Tests: The patient's first blood tests revealed extensive inflammation due to high erythrocyte sedimentation rate (ESR) levels and C-reactive protein (CRP). Additionally, a mild form of anaemia was noted, which is prevalent in cases of chronic sickness and cancer.

Chest X-ray: The chest X-ray revealed multiple nodular opacities, raising suspicion of metastatic disease. The absence of other primary symptoms directed the focus toward metastatic involvement.

Computed Tomography (CT) Scan: A full-body computed tomography scan of the abdomen and chest was done. Multiple nodules in the lungs, which are indicative of metastasis, were verified by this imaging. Furthermore, a 4 cm tumour in the left kidney indicated local invasion but did not have regional lymphadenopathy.

Biopsy: A percutaneous biopsy of the renal mass was conducted, confirming the diagnosis of clear cell renal carcinoma. A subsequent biopsy of one of the lung nodules also confirmed metastatic disease, establishing the diagnosis of advanced renal cancer with atypical presentation.

Diagnosis

The patient was diagnosed with advanced renal cancer, characterized by primary renal carcinoma with pulmonary metastases. The presentation was atypical due to the absence of classic renal symptoms such as hematuria or flank pain and the initial presentation with systemic symptoms and lung metastases.

Treatment Plan

Targeted Therapy: The patient's general condition and the fact that the illness had spread to other parts of the body led to the decision to treat her with sunitinib, a tyrosine kinase inhibitor. Metastatic renal cell carcinoma may be effectively treated with sunitinib, a drug that targets vascular endothelial growth factor (VEGF) receptors.

Supportive Care: Supportive care includes the management of anaemia using erythropoiesis-stimulating agents to improve haemoglobin levels. The persistent cough, a symptom of pulmonary metastases, was managed with appropriate cough suppressants and bronchodilators to enhance patient comfort.

Follow-Up and Response:

Three-Month Follow-Up: The patient underwent follow-up imaging and clinical evaluation at three months. CT scans showed a significant reduction in the size of the pulmonary nodules, indicating a positive response to sunitinib. The renal mass remained stable in size, with no evidence of further local invasion or new metastatic sites. Clinically, the patient reported improved energy levels and an increase in weight, suggesting a partial recovery from the cachexia associated with cancer.

Six-Month Follow-Up: At six months, the follow-up imaging continued to show regression of lung metastatic lesions. The renal mass remained stable without progression. The patient's quality of life improved significantly, with reduced systemic symptoms and no new complaints. Blood tests showed normalized inflammatory markers and stable haemoglobin levels.

Ongoing Management: The patient continued on sunitinib, regularly monitoring renal function, performing liver function tests, and conducting imaging studies to assess disease progression. Close follow-up with a multidisciplinary team, including oncologists, pulmonologists, and supportive care specialists, was essential to manage any adverse effects of treatment and ensure comprehensive care.

Key Points:

1. **Uncommon Manifestation:** Advanced renal cancer can initially present with symptoms unrelated to the primary site, such as pulmonary metastases and systemic symptoms, complicating diagnosis.
2. **Diagnostic Imaging:** Comprehensive imaging, including CT and chest X-ray, is crucial in identifying metastatic disease and guiding biopsy decisions.
3. **Biopsy:** Essential for confirming the diagnosis and determining the histological subtype, which is critical for guiding treatment.
4. **Targeted Therapy:** Sunitinib and other targeted therapies can effectively manage metastatic disease, carefully monitoring side effects and disease progression.
5. **Multidisciplinary Approach:** A collaborative approach involving various specialists ensures comprehensive management of the disease and associated symptoms.

Conclusion

Cases like this one highlight how important it is to be vigilant when recognizing advanced kidney cancer, particularly in individuals who have unusual symptoms. To make a prompt and correct diagnosis, it is crucial to know that renal cell carcinoma (RCC) may present in ways other than the traditional triad of hematuria, flank discomfort, and an abdominal mass. The success of therapy is greatly affected by how early the disease is detected using thorough imaging and confirmed biopsies. Metastatic renal cell carcinoma (RCC) treatment with targeted medications like sunitinib has shown encouraging outcomes, including shrinkage of metastatic lesions and stabilization of the primary tumour. To tackle the complex demands of these patients, it is essential to have multidisciplinary treatment that includes radiologists, pathologists, oncologists, and supportive care experts. The patient's quality of life is preserved by comprehensive supportive care, and the cancer is effectively treated, thanks to this collaborative approach.

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