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Renal cell carcinoma unsightly causing anemia and reactive thrombocytosis

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Abstract
A case of 45 years old female, Caucasian with anemia for more than anone year which was unnoticed for unknown period, not responding to any treatment like iron therapy and blood transfusions is reported here. Repeated Blood pictures showed severe anemia with severe reactive thrombocytosis. Fecal occult blood test done was found to be negative. Upper and lower gastrointestinal examination showed no evidence of bleed from any site. Abdominal ultrasound followed by CT scan abdomen and pelvis revealed right heterogeneously enhancing solid cystic mass. A US-guided biopsy was then taken; the histopathology revealed malignant tumor with pleomorphic/anaplastic morphology. On immunohistochemistry, atypical cells express PAX8 which is suggestive of either clear cell or papillary or chromophobe tumors. And so patient was advised for additional immunohistochemistry panel. So it mandates considering renal cell carcinoma in the workup part of the causes of iron deficiency anemia along with reactive thrombocytosis.

Keywords: *iron deficiency anemia, reactive thrombocytosis, clear cell carcinoma.*

Introduction

Survival in many cancers, including renal cell carcinoma (RCC), has improved over the past years in the developed countries[1]. RCC is characterized by male excess, ranging from 2- to 4fold, and known risk factors of smoking, overweight and obesity, and germline mutations in specific genes[2]. Early detection and improvements in treatment have contributed to positive trends in RCC survival[3]. Based on pathological data, RCC subtype, tumour grade, sarcomatoid and rhabdoid features, and TNM stage are commonly used prognostic factors of RCC[4]. Previously, in RCC elevated neutrophils, platelets, NLR, PLR, and decreased lymphocytes were linked to poor survival rates[5,6,7]. Moreover, other preoperative blood parameters such as haemoglobin, AST/ALT, albumin have been suggested to hold prognostic values predicting survival in RCC[8].

And Anemia, frequently hypochromic and microcytic, occurs in approximately one third of patients with renal cell carcinoma[9].

Generally renal cell carcinoma presents with classic triad of hematuria, flank pain and an abdominal mass, but they occur together rarely and a patient presents with many other vague symptoms like malaise, weight loss, sleep disturbance and fever and so on. Today, RCC is often asymptomatic (meaning little to no symptoms) and is generally detected incidentally when a person is being examined for other ailments[10].

And the treatment includes partial or radical nephrectomy.

Case Report

A 45 year Caucasian female with no comorbidities, no chronic illnesses, nor with significant past history like major surgeries neither any family history is reported.She was a chronic tobacco chewer and stopped after present illness developed. With two normal deliveries and no events during pregnancies, attained menopause in 2021,march. Patient gave history of recurrent anaemia since may, 2021 which was diagnosed as iron deficiency anaemia with reactive thrombocytosis based on complete blood picture, serum iron and ferritin plus TIBC. The patient did not bleed from any site. Different diagnostic tools included: Stool occult blood was negative. Upper and lower GIT endoscopy revealed normal findings. She developed dyspnoea on mild exertion with intermittent high grade fevers relieved with over the counter pills, hepatomegaly and hemic murmur. Therefore, she had packed red blood cells transfused.

On 05th, July'2021 she presented to outpatient clinic with fatigability, dyspnoea on exertion, fever, weight loss .There was no history of cough. CBC was done; results showed Hb 6.3g/dL, RBC 2.82 mill/cumm, HCT 21.7%, MCV 78.1fL, MCH 22.7pg, MCHC 29.0g/dL, platelets 7.8L/cumm. TWBC17,900 cells/cumm, RDW (CV) 20.3. Serum iron 10mg/dL, TIBC was 114mg/dL and ferritin 1409 ng/mL as in chronic disease, vit. B12 509 pg/mL. Fecal occult blood was negative. Contrast enhanced CT abdomen showed an exophytic mass noted arising from interpolar region of right kidney measuring approx.. 10*9*7 cm , containing almost equal proportion of solid and cystic components. Solid mass shows moderate heterogenous enhancement on arterial phase. Arterial feeders are noted arising from the right renal artery. The left kidney was unremarkable. Renal function tests were normal and there was no microscopic hematuria. A US guided biopsy of the mass was requested. Biopsy result showed large, atypical, markedly pleomorphic cells having hyperchromatic, pleomorphic, and bizzarre nuclei, with prominent nucleoli, intranuclear inclusions and moderate to abundant foamy vacuolated cytoplasm which favours malignant tumor with pleomorphic/ anaplastic morphology. Immunohistochemistry showed atypical cells expressing PAX8 which mandated additional immunohistochemistry panel and gave an impression of Poorly differentiated malignancy, possibly of Renal cell carcinoma Origin. And simultaneously PET-CT was done and it showed active primary disease in right kidney with local infiltration and abdominal nodal, pulmonary metastases. Patient was started on sunitinib and showed poor response. And her demise after a few months of treatment initiation as she was already diagnosed at a later stages of the disease.

Discussion

The usual clinical presentation of renal cell carcinoma Is a triad of symptoms of hematuria, flank pain, and an abdominal mass10-15% of cases[12]. In our patient the presenting features were different only being fatique, negligible fever episodes since 3 months and weight loss which was not significant. These symptoms would point towards a simple nutritional deficiency or anemia or a severe malignancy which misled us to just give therapy for the iron deficiency anemia evident through the blood reports. Although it was not improving her status despite therapies which were already been given since long time. Peripheral smear showed normocytic

hypochromic anemia which could mean it as cytoplasmic defects like iron deficiency anemia or thalassemia or sideroblastic anemia or anemia of chronic disease.

But the patient has no traits of a thalassemic one, serum iron is low serum ferritin was huge TIBC mildly elevated. And in sideroblastic anemia which is otherwise a myelodysplasia smear would be variable, iron stores- normal which are not in this case. One finding that was in favour of A On thorough physical examination of the patient we could appreciate hepatomegaly along with which there was a small hard mass that was overlooked. Detailed investigations of the mass exclusively could give us the diagnosis as malignancy of the kidney that caused all the heamatological issues in the patient due to reduced erythropoietin and many other related factors. This made us to report such a case which must be carefully examined with specific stains and detailed other investigations.

Conclusion

Based on our case we made a point to learn that any case can be overlooked if only the reports are taken into count. Detailed internal organ examination and any suspicion must be cautiously looked into and treat the patient accordingly. In our patient we ordered many advanced necessary investigations even from the higher centres and the tumordiagnosis was delayed as she approached us in the bad stage. Nephrectomy would be the only to choice of treatment for her.

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