JIRCMS Vol.: 01 ll Issue 02 ll Page 01-50 ll July 2017

Primary Renal Gray Zone (Unclassifiable B Cell Lymphoma) Lymphoma with Hypercalcemia and Acute Kidney Injury Mimicking Like Renal Cell Carcinoma - A Rare Case Report

Ponraj Madasamy[1], Jogamaya Pattnaik[2], Murali Paramanandhan[3], Smita Kayal[4], Naresh Jadhav[5], Jagdeep Singh[6]

Senior Resident,[1,2,3,5,6] and Associate Professor, [4] Department of Medical Oncology, RCC, JIPMER, Pondicherry

Corresponding Author: Murali Paramanandhan, Department of Medical Oncology, RCC, JIPMER, Dhanvantri Nagar, Pondicherry 605 006, Email: josh.messi19@gmail.com

ABSTRACT: Primary renal lymphoma is very rare presentation. The etio-pathogenesis presents a diagnostic dilemma. It is difficult to differentiate between the primary renal lymphoma (PRL) and renal cell carcinoma (RCC) if its presentation as a solitary renal mass. It associated with grave prognosis. Diffuse large B cell lymphoma (DLBCL) is most common histological subtype. A 63-year-old male presented with a solitary renal mass, biopsy revealed B cell Lymphoma unclassifiable between Burkitt's lymphoma and DLBCL. The patient was treated as DLBCL with RCVP and showed favorable response to chemotherapy. Unfortunately patient had developed febrile neutropenia followed by sepsis and multi-organ dysfunction.

KEYWORDS: Lymphoma, Renal Cell Carcinoma, Hypercalcemia

INTRODUCTION:

Lymphomatous involvement of kidney occurs in 30-40% of patients diagnosed with Non- Hodgkins lymphoma (NHL).[1] However primary renal lymphoma is very rare entity occurs less than 1% of NHL patients.[2]Primary renal Grey lymphoma (PRGL) is a rare form of NHL, presents with hematuria, abdominal pain, hydroureteronephrosis, and constitutional symptoms. Lymph node and bone marrow involvement usually absent.It is often misdiagnosed as renal cell carcinoma (RCC)because of similar presentation.[3] It is associated with poor prognosis. In this case report, we present a patient with pathologically confirmed PRGL.

CASE PRESENTATION:

A 63 years old male presented with right sided flank pain, fatigue, hematuria for 1 month duration. The general condition of the patient was poor on presentation. On physical examination patient had 12x8 cm bimanually palpable and ballotable mass in right lumbar region. There was no palpable lymphadenopathy, hepatosplenomegaly. Bilateral Testis was normal. Patient had renal dysfunction at presentation with creatinine value 3.3 mg/dl. Ultrasound (USG) abdomen and pelvis showed 13x11 cm right sided renal mass. CT scan confirmed the same findings. PET CT scan showed metabolically active large lobulated mass lesion of size 13x11x12 cm with specks of calcification replacing the right kidney (SUV Max=13). No other metabolically active lesion in the body. Biopsy from renal mass revealed large atypical lymphoid cells with vesicular nuclei with moderate to scant cytoplasm with frequent mitosis and focal apoptotic bodies admixed with fat cells without any normal renal parenchyma. IHC showed tumor cells are positive for LCA,CD20, C-myc and Bcl-2 and negative for CD10,CK7,Tdt, and Ki 67 >90%. Final diagnosis was B cell lymphoma unclassifiable between Burkitt's lymphoma and diffuse large B cell lymphoma. Bone marrow did not reveal any infiltration. In this patient we noticed interesting feature of Hypercalcemia (calcium=13.4). After anti-Hypercalcemia measures of 3 days patients creatinine came down to 1.8 and calcium became normal. Considering poor general condition patient was started R-CVP. The patient received 3 cycles of chemotherapy. The response assessment done after 3 cycles with an USG abdomen showed complete disappearance of renal mass. Unfortunately patient developed febrile neutropenia followed by sepsis and

multi-organ dysfunction and succumbed to death on day 14.

DISCUSSION:

Lymphoma is a systemic disease, and renal involvement usually seen as a part of disseminated disease. PRL is defined as isolated renal lymphoma without any other systemic involvement like the lymph nodes, CNS, bone marrow, or any other organ involvement. It usually presents with flank pain, hematuria, abdominal mass, fever and weight loss. PRGL is most common among adul-ts with a mean age 60 years, more often men. The tumors are mostly unilateral but bilateral presentation also reported.[4] In our case a 63 year old male presented with symptoms of right sided flank pain, hematuria and fatigue. On physical examination patient had 12x8 cm bimanually palpable and ballotable mass in right lumbar region. There was no palpable lymphadenopathy, hepatosplenomegaly. B/L Testis was normal. The patient s serum creatinine at presentation was 3.3mg/dl. This can be attributed to direct lymphomatous infiltration of the kidneys, causing hypercalcemia, para-proteinemia leading to acute kidney injury.[5] The etio-pathogenesis is unknown, although PRL has been associated with inflammatory and chronic infectious conditions like chronic pyelonephritis, Sjogren's syndrome, systemic erythematous lupus, or Epstein-Barr virus.

PRL is mostly mistaken to be a RCC because of similar clinical presentation.[3] The diagnosis is confirmed after radical nephrectomy. So imaging plays a crucial role in diagnosis. USG usually shows hypo echoic mass. CT scan usually cannot differentiate between PRL and RCC. Unfortunately most of patients had renal dysfunction at presentation; contrast enhanced CT scan is risky. PET CT scan is now emerging role in lymphoma. In our case, the USG abdomen and pelvis showed 13x11 cm right sided renal mass. CT scan confirmed the same findings. PET CT scan showed metabolically active large lobulated mass lesion of size 13x11x12 cm with specks of calcification replacing the right kidney (SUV Max=13). No other metabolically active lesion in the body.

Percutaneous biopsy is always required to confirm the diagnosis of lymphoma. Bone marrow biopsy should always be performed to exclude extra-renal dissemination. In this case, the biopsy from renal mass revealed large atypical lymphoid cells with vesicular nuclei with moderate to scant cytoplasm with frequent mitosis and focal apoptotic bodies admixed with fat cells without any normal renal parenchyma. IHC showed tumor cells are positive for LCA, CD20, C-myc and Bcl-2 and negative for CD10, CK7, Tdt, and Ki 67 >90%. Final diagnosis was B cell lymphoma unclassifiable between Burkitt's lymphoma and diffuse large B cell lymphoma. Bone marrow did not reveal any infiltration.

B cell lymphoma, unclassifiable, exhibiting features intermediate of both DLBCL and classical Hodgkin's lymphoma (CHL) or Burkitt's is also known as gray zone lymphoma. These cases more often present with mediastinal disease. Extra nodal presentation of gray zone lymphoma is rare. Previously these entities were called as "atypical Burkitt's lymphoma," and "high-grade B-cell lymphoma, Burkitt like" or "DLBCL with high-grade features," "gray-zone lymphoma," or "diffuse aggressive B-cell lymphoma."GZL is a new inclusion in the latest WHO classification and also due to its rare occurrence, the diagnosis of this lymphoma is relatively challenging. The rapid deterioration of the residual renal function was likely to have been related to parenchyma infiltration and to the hypercalcemia, probably induced by vitamin D overproduction from the lymphoid cell mass. Accordingly, after restoration of normal calcium levels and subtotal ablation of the renal mass, renal function did ameliorate and returned to the patient's basal values

Systemic chemotherapy is the treatment of choice. CHOP combined with rituximab is the most commonly used regimen found in literature as like any b cell NHL, but no standard therapy has been

established due to less number of cases. Depending upon general condition CVP also used.Gray zone lymphoma is a high grade lymphoma and aggressive in nature requiring intensive chemotherapy.The prognosis is very poor, median survival being less than 12 months.In this patient we noticed interesting feature of hypercalcemia(calcium=13.4). After anti-hypercalcemic measures of 3 days patients creatinine came down to 1.8 and calcium became normal. Considering poor general condition patient was started R-CVP. The patient received 3 cycles of chemotherapy. The response assessment done after 3 cycles with an ultrasonography abdomen showed complete disappearance of renal mass. Unfortunately patient developed febrile neutropenia and sepsis and multi-organ dysfunction and succumbed to death on day 14.

FIGURES

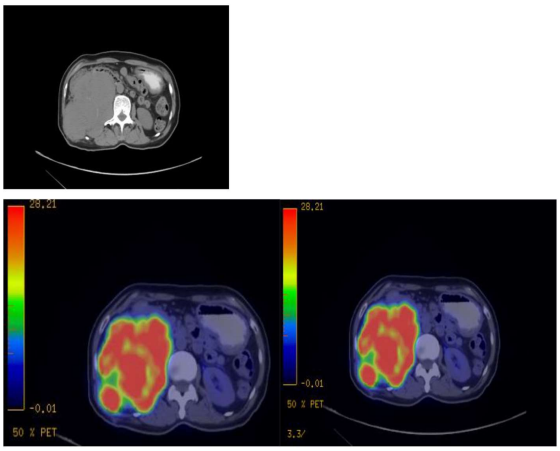

FIGURE 1: PET CT scan showed metabolically active large lobulated mass lesion of size 13x11x12 cm with specks of calcification replacing the right kidney (SUV Max=13)

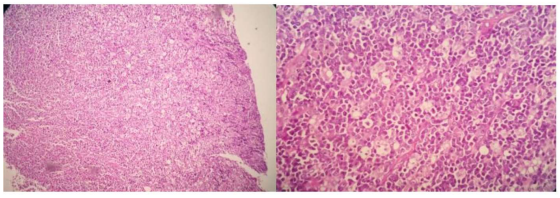

FIGURE 2 AND 3: HISTOPATHOLOGY IN LOW POWER AND HIGH POWER FIELDS Large atypical lymphoid cells with vesicular nuclei with moderate to scant cytoplasm with frequent mitosis and focal apoptotic bodies admixed with fat cells without any normal renal parenchyma.

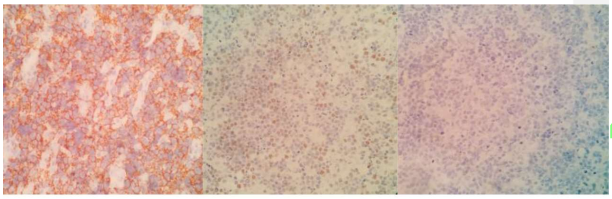

FIGURE 4, 5 and 6: IHC showing CD 20, C-myc and BCL-2 positivity

CONCLUSION:

Standard management of a renal mass is nephrectomy, differentiating renal lymphoma from carcinoma remains a diagnostic challenge. Renal lymphoma is important to include in the differential diagnosis of renal masses, because generally, it is asystemic disease and treatment is nonsurgical. The prognosis is very poor. The median survival is less than 12 months.

AKNOWLEDGEMENTS:

The authors would like to thank the HOD Dr. Biswajit Dubhashi and residents Dr. Bhanu, Dr. Esha and Dr. Kiran for helping in preparing the manuscript.

CONFLICT OF INTEREST: There is no conflict of interest

REFERENCES:

1. Ladha A, Haider G. Primary renal lymphoma. J Coll Physicians Surg Pak. 2008;18:584–5.
2. Barreto F, Dall'Oglio MF, Srougi M. Renal lymphoma. atypical presentation of a renal tumor. Int Braz J Urol Off J Braz Soc Urol. 2006;32(2):190–2.
3. Cyriac S, Rejiv R, Shirley S, Sagar GT. Primary renal lymphoma mimicking renal cell carcinoma. Indian J Urol. 2010;26(3):441–3.
4. Ahmad AH, Maclennan GT, Listinsky C. Primary renal lymphoma: a rare neoplasm that may present as a primary renal mass. J Urol. 2005;173(1):239.
5. Harzallah K, Laadidi J, Chatti K, Hlel I, Bougrine F, Bouziani A. et. al. Acute renal failure due to lymphomatous infiltration: an unusual presentation. Saudi J Kidney Dis Transplant 2006;17(3):395-398.