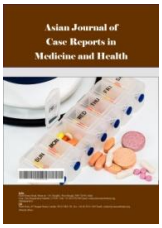

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Monomorphic T-Cell Post-Transplant Lymphoproliferative Disorder: A Case Report

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Authors' contributions

This work was carried out in collaboration among all authors. Author KK designed the study, performed the statistical analysis, wrote the protocol and wrote the first draft of the manuscript. Authors BA and AAA managed the analyses of the study and the literature searches. All authors read and approved the final manuscript.

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Case Study

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ABSTRACT

The study reports a case of T-cell PTLD in a kidney recipient with a review of literature. Solid organ or bone marrow transplantation is the only curative treatment for a variety of diseases. Paradoxically, it accounts for several potentially life-threatening complications for the recipient that are often inevitable. A 53-year-old male patient presented to our hospital with dry cough and high-grade fever of 1 day duration. The patient had a history of diabetes mellitus and hypertension that were complicated by end-stage renal disease and hemodialysis until he underwent kidney transplant 3 years prior to presentation. Diagnostic thoracentesis was performed, and according to light's criteria, the pleural fluid was consistent with lymphocytic exhudate. This result raised the concern of an underlying malignancy (PTLD in particular) which necessitated a tissue biopsy in order to be confirmed. The patient was started on chemotherapy with CHOP protocol (Doxorubicin, cyclophosphamide, Vincristine, and Prednisone).

Keywords: Monomorphic T- cell; cyclophosphamide; CHOP protocol; hypertension.

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1. INTRODUCTION

Solid organ or bone marrow transplantation is the only curative treatment for a variety of diseases. Paradoxically, it accounts for several potentially life-threatening complications for the recipient that are often inevitable.

Transplant patients are compelled for never-ending immunosuppression to ward off the risk of rejection, and physicians carry the burden of closely monitoring their “volatile” patients for detrimental side effects [1].

Post-Transplant Lymphoproliferative Disorder (PTLD) is a heterogeneous multi-factorial type of lymphoma that can exclusively occur after solid organ or hematopoietic stem cell transplants and imposes serious morbidity and mortality on the affected patient.

In solid organ recipients, the incidence of PTLD varies according to the type of transplant. Liver and kidney transplants carry the lowest risk, whereas intestinal or multiorgan transplants top the list [2].

Epstein-Barr virus (EBV) is associated with the majority of affected individuals particularly those occurring less than 1 year after transplantation [3,4] but PTLD can also occur in EBV-negative patients. In Europe and the U.S., about 85% of PTLD are of B cell lineage and most of these (over 80%) are associated with EBV, whereas 10–15% of PTLD are of T cell lineage, around 30% of which are associated with EBV [5-7].

According to the World Health Organization (WHO) Classification of Tumors of Hematopoietic and Lymphoid Tissues, PTLD is divided into 4 broad categories (Table 1). The non-Destructive PTLD which is sub-classified into 3 pathologic types: Florid follicular hyperplasia, Plasmacytic hyperplasia, and Infectious mononucleosis, the Polymorphic PTLD, the Monomorphic PTLD, and the Classic Hodgkin’s Lymphoma [8].

The clinical presentation of PTLD is heterogeneous, ranging from incidental asymptomatic findings to a fulminant presentation, including organ failure and spontaneous tumor lysis [9]. The differential diagnosis includes allograft rejection (in particular, in the case of graft involvement) and infection or sepsis (especially if the patient has symptomatic disseminated disease) [9].

Table 1. Categories of ptld

Non-Destructive PTLD		
Floridfollicular		Hyperplasia
Plasmacytic		Hyperplasia
Infectious mononucleosis		
Polymorphic PTLD		
Monomorphic PTLD		
(Classified according to the Lymphoma they resemble)		
B-cell neoplasms		
DiffuseLarge	B-cell	Lymphoma
Burkitt		Lymphoma
Plasma	Cell	Myeloma
Plasmacytoma		
Other		
T-cell neoplasms		
Peripheral	T-cell	Lymphoma
Hepatosplenic	T-cell	Lymphoma
Other		
Classic Hodgkin’s Lymphoma		

Very few cases of T-cell PTLD have been reported in kidney transplant recipients [10].

Herein, we report a case of T-cell PTLD in a kidney recipient with a review of literature.

2. CASE PRESENTATION

A 53-year-old male patient presented to our hospital with dry cough and high-grade fever of 1 day duration. The patient had a history of diabetes mellitus and hypertension that were complicated by end-stage renal disease and hemodialysis until he underwent kidney transplant 3 years prior to presentation. His immunosuppressive regimen consisted of prednisone, cyclosporine and mycophenolate mofetil (MMF). Upon admission, chest Computed Tomography (CT) scan was done and showed lingular and left lower lobe areas of consolidation, loculated pleural effusion, hilar, mediastinal and paratracheal lymphadenopathy (Fig. 1). Covid 19 Polymerase chain reaction (PCR) was negative. Cyclosporine and MMF were discontinued to reduce immunosuppression. Empiric antibiotics (Meropenem and Vancomycin) were started, and blood cultures were withdrawn but bacterial growth was not detected. *Interferon gamma release assay* (*IGRA*) and both *Cytomegalovirus* (CMV) and *EBV* Bronchoalveolar lavage (BAL) PCR tests were added to the diagnostic work-up but an infectious diagnosis couldn't be established.

Diagnostic thoracentesis was performed, and according to light's criteria, the pleural fluid was consistent with lymphocytic exhudate. Pleural fluid was sent to cytology which demonstrated numerous small mature lymphocytes whereas flow cytometry showed a non-significant small population of CD19 and CD20 positive B-cells.

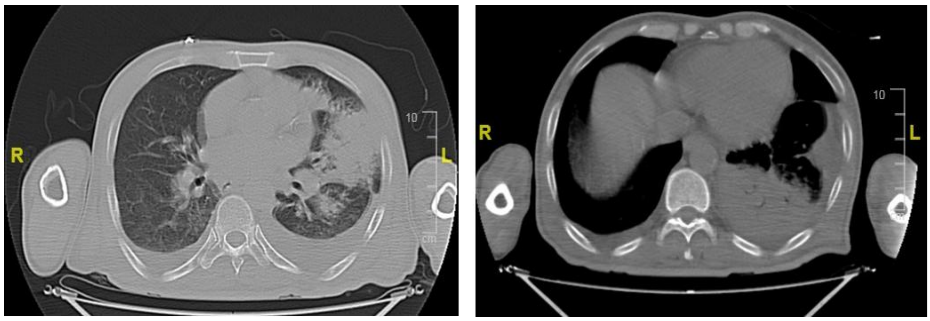

Fig. 1. Chest CT. Subpleural confluent area of consolidation of lingula and left posterobasal segment with minimal underlying pleural effusion

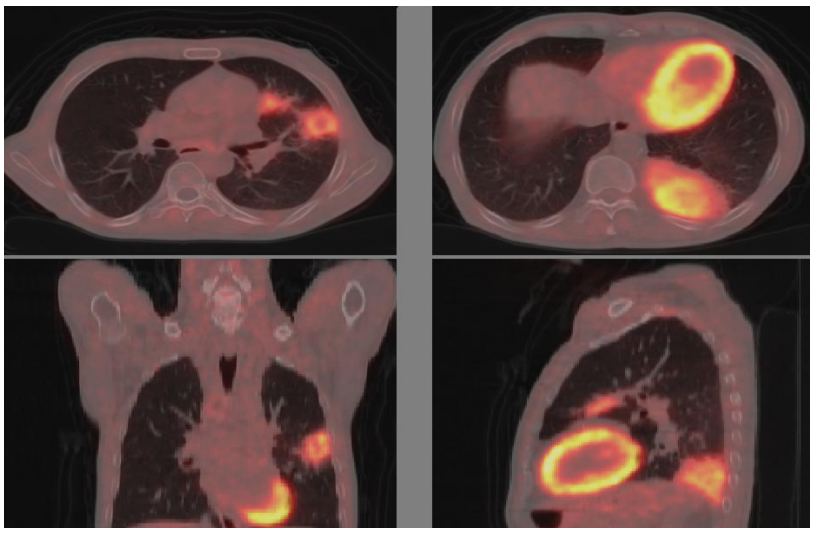

Fig. 2. PET- CT scan. Hypermetabolic lesions of the lingula and left posterobasal segment

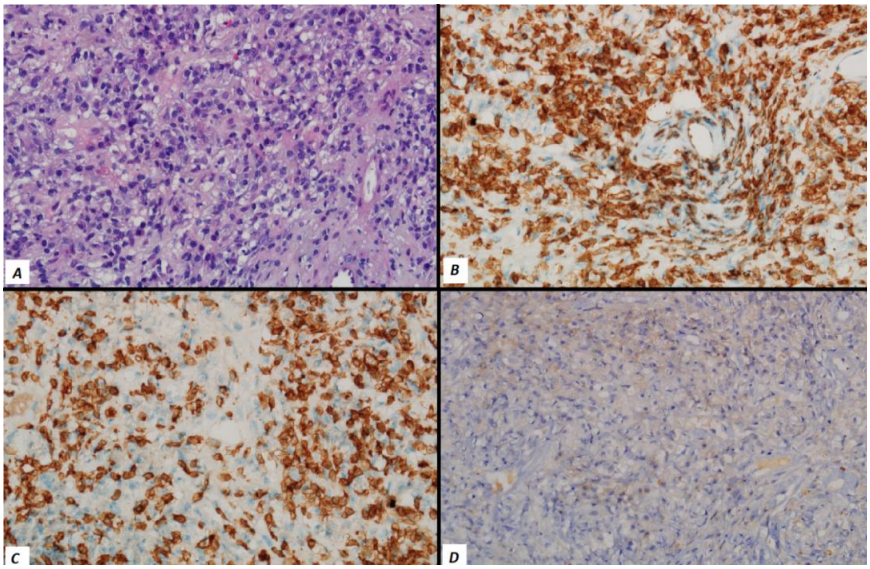

Fig. 3. A: Diffuse lymphoid proliferation (HEx40); B: CD3 positive (CD3x40); C: CD8 positive (CD8x40); D: proliferating lymphocytes are CD30 negative (CD30x20)

3. CONCLUSION

This result raised the concern of an underlying malignancy (PTLD in particular) which necessitated a tissue biopsy in order to be confirmed. Mediastinoscopy was done and multiple enlarged lymph nodes were excised and sent to pathologic analysis which, unfortunately, was non-conclusive and revealed an inflammatory process without the evidence of lymphoma. Positron Emission Tomography – Computed Tomography (*PET-CT*) scan was a mandatory step to unveil the obscurely underlying malignancy. Significant pleural based hypermetabolic lesions of the lingula and left posterobasal segment (measuring approximately 9 cm) were noted (Fig. 2). Thereafter, tissue biopsy under CT guidance was done and the diagnosis of monomorphic peripheral T-cell PTLD was attained (Fig. 3). The patient was started on chemotherapy with CHOP protocol (Doxorubicin, Cyclophosphamide, Vincristine, and Prednisone).

CONSENT

As per international standard or university standard, patient's written consent has been collected and preserved by the authors.

ETHICAL APPROVAL

It is not applicable.

COMPETING INTERESTS

Authors have declared that no competing interests exist.

REFERENCES

1. Gill JS, Lan J. In Gilbert SJ, Weiner DE, Bomback AS, Perazella MA, Tonelli M (Authors). National kidney foundation's primer on kidney diseases. Philadelphia, PA, USA: Elsevier. 2018;577-607.
2. Cockfield SM. Identifying the patient at risk for post-transplant lymphoproliferative disorder. Transpl Infect Dis. 2001;3(2): 70-78. DOI:10.1034/j.13993062.2001.003002070.x
3. Loren AW, Porter DL, Stadtmauer EA, Tsai DE. Post-transplant lymphoproliferative disorder: A review. Bone Marrow Transplant. 2003;31(3):145–55
4. LaCasce AS. Post-transplant lymphoproliferative disorders. The Oncologist. 2006;11:674-680. DOI:10.1634/theoncologist.11-6-674
5. Shapiro RS, McClain K, Frizzera G, Gajl-Peczalska KJ, Kersey JH, Blazar BR, et al. Epstein-Barr virus associated B cell lymphoproliferative disorders following bone marrow transplantation. Blood. 1988;71(5):1234–43
6. Ghobrial IM, Habermann TM, MaurerMJ, Geyer SM, Ristow KM, Larson TS, et al.

Prognostic analysis for survival in adult solid organ transplant recipients with post-transplantation lymphoproliferative disorders. J Clin Oncol. 2005;23(30):7574–82.

7. Dotti G, Fiocchi R, Motta T, Mammana C, Gotti E, Riva S, et al. Lymphomas occurring late after solid-organ transplantation: Influence of treatment on the clinical outcome. Transplantation. 2002; 74(8):1095–102.
8. Swerdlow SH, Campo E, Harris NL, Jaffe ES, Pileri SA, Stein H, Thiele J (Eds): WHO Classification of Tumours of Haematopoietic and Lymphoid Tissues (Revised 4th Edition). IARC: Lyon; 2017.
9. Dierickx D, Habermann TM. Post-Transplantation Lymphoproliferative Disorders in Adults. N Engl J Med. 2018;378(6):549-562. DOI: 10.1056/NEJMra1702693
10. Rajakariar R, Bhattacharyya M, Norton A, et al. Post-transplant T-cell lymphoma: A case series of four patients from a single unit and review of the literature. Am J Transplant. 2004;4(9): 1534-1538. DOI: 10.1111/j.1600-6143.2004.00521.x

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