

As per medical records available, patient received 6 cycles of R-CHOP (rituximab, cyclophosphamide, hydroxydaunorubicin, vincristine, prednisone). For maintenance therapy, the patient was advised to undergo 10 cycles of Rituximab, followed by Bendamustine-Rituximab to achieve complete response (CR).

In June 2023, with a clinical suspicion of relapse, we received whole blood sample (EDTA) having a TLC of 74,070 cells/ul. Peripheral blood smear showed abnormal lymphoid cells having reticular chromatin, inconspicuous nucleoli and scant cytoplasm. (Microphotograph 3)

On flow cytometry, relapse of Mantle cell lymphoma was ascertained expressing CD45 (bright), CD19, CD20, CD5, CD38, CD79b, FMC-7 and kappa light chain restriction. (Photograph 4&5)

For management of relapsed disease the patient was prescribed with Tablet Acalabrutinib 100mg twice daily and regular follow up with CBC was advised.

On regular follow up in August 2024, CBC showed lymphocytosis. The imaging study (PET-CT) findings revealed relapsed disease.

For confirmation, whole blood (EDTA) sample was sent to our referral lab which had a TLC of 10,240/ul. On peripheral smear examination two abnormal population of cell were detected. One showed, small to medium sized cells having nuclear cleft, reticular chromatin, scant cytoplasm ; other population had a blastoid appearance with high N:C ratio, coarse chromatin, 0 to 1 prominent nucleoli and moderate cytoplasm with few vacuoles. (Wright-giemsa stain 100x objective) (Microphotograph 6)

Flowcytometry analysis showed 2 abnormal population in CD45 dim and CD45 bright region respectively. (Photograph 7 to 10)

<b>CD45 bright</b>	<b>CD45 dim</b>
Bright CD20, CD19	Moderate CD34, TdT (immaturity marker)
Moderate CD5	Moderate CD79a, CD19, dim CD22 (B lineage)
Moderate CD38	Moderate CD200
Moderate Kappa	Moderate CD123 (Heterogeneous)
Dim FMC-7	Moderate CD38, HLA-DR (activation markers)
Dim CD79b	Dim CD103 (Heterogeneous)

Thus, immunophenotyping by flow-cytometry analysis revealed- persistence of Mantle cell lymphoma /leukemia with B-Acute lymphoblastic leukemia transformation.