Plasmablastic lymphoma arising in a patient with refractory chronic lymphocytic leukemia: case report

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INTRODUCTION

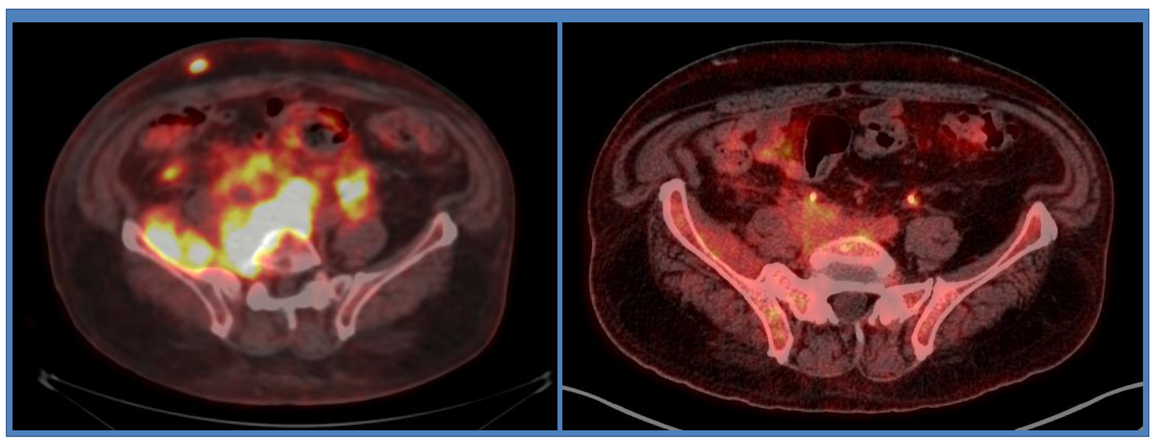
Plasmablastic transformation is an exceptionally rare form of Richter transformation (<1%) associated with an aggressive clinical course and limited therapeutic evidence[2]. We report a case of plasmablastic transformation of heavily pretreated chronic lymphocytic leukemia (CLL), characterised by CD20 loss and requiring a shift toward plasma-cell–directed treatment.

CASE REPORT

A 52-year-old man was diagnosed with CLL in 2021 and subsequently received multiple lines of chemoimmunotherapy and targeted therapy, including BTK inhibitors. Despite nine lines of treatment, progressive bulky lymphadenopathy developed, complicated by obstructive nephropathy and renal dysfunction, requiring nephrostomy.

In March 2026, epcoritamab plus pirtobrutinib was initiated as salvage therapy. Treatment was complicated by tumor flare, PET/CT subsequently demonstrated Lugano stage IV disease, showing hypermetabolic, locally infiltrative mass in the pelvis as well as metabolically active cervical lymphadenopathy.

A repeat lymph node biopsy revealed a biphasic infiltrate: 70% large plasmablastic cells (CD138+, CD38+, CD56+, MUM1+, cMYC+, kappa-restricted; CD20/CD19/PAX5/CD79a–, Ki67 90%), admixed with 30% residual small CLL lymphocytes retaining a mature B-cell phenotype (CD20+, PAX5+, CD5+, CD23+, LEF1+, BCL2+, Ki67 5%), consistent with plasmablastic transformation of CLL. EBER and HHV8 were negative, and the patient was HIV-negative. FISH confirmed MYC/IGH t(8;14)(q24;q32) rearrangement, without BCL2 or BCL6 rearrangement. A concurrent bone marrow biopsy showed no lymphomatous involvement.



a) PET/CT before salvage therapy b) PET/CT before autoSCT

The findings supported plasmablastic transformation of CLL (RT-PBL). Treatment was redirected toward plasma-cell-directed therapy. Pola-ICE and lenalidomide added for potentiation achieved a partial response with regression of lymphadenopathy and mass-like infiltration. A second course of DaraPola-DHAP followed, with successful stem cell collection. Whole-body CT demonstrated reduction of cervical lymphadenopathy and marked regression of retroperitoneal and pelvic disease. In June 2026, autoSCT with BEAM conditioning was performed. Response assessment by PET/CT is pending.

DISCUSSION

Repeat biopsy in rapidly progressive CLL may reveal a biologically distinct transformation requiring a fundamental change in therapeutic strategy. Plasmablastic transformation is an exceptionally rare, with only 15 reported cases and dismal outcomes, and is characterised by loss of pan-B-cell markers and acquisition of a plasma-cell phenotype, distinguishing it from CD20/PAX5-retaining DLBCL-RT.[1,2] The isolated MYC/IGH t(8;14) and high proliferation (Ki-67 ~90%) further supported the plasmablastic phenotype.

The emergence of a CD20-negative plasmablastic clone during epcoritamab raises the possibility of CD20-directed immune escape and clonal selection. Prior BTK-inhibitor exposure may also have contributed to plasmacytic differentiation and clonal selection, although a causal relationship remains hypothetical.[3]

Currently, there is no standard treatment regimen for PBL. Dose-adjusted EPOCH or V-EPOCH is often utilized.[4] In this case, treatment was guided by phenotype: CD38+/CD138+ expression supported a switch to plasma-cell–directed therapy (daratumumab, lenalidomide) combined with intensive chemotherapy and autologous SCT, achieving a partial response despite progression during CD20-directed therapy.

CONCLUSION

Plasmablastic transformation represents a rare and aggressive variant of RT requiring prompt re-biopsy and immunophenotyping. Shifting and therapeutic strategy toward plasma-cell-directed protocols (incorporating daratumumab, lenalidomide, bortezomib, and intensive multi-agent chemotherapy) alongside autologous stem cell transplantation offers a feasible pathway to achieve disease control and facilitate clinical response in heavily pretreated, refractory settings.

References

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