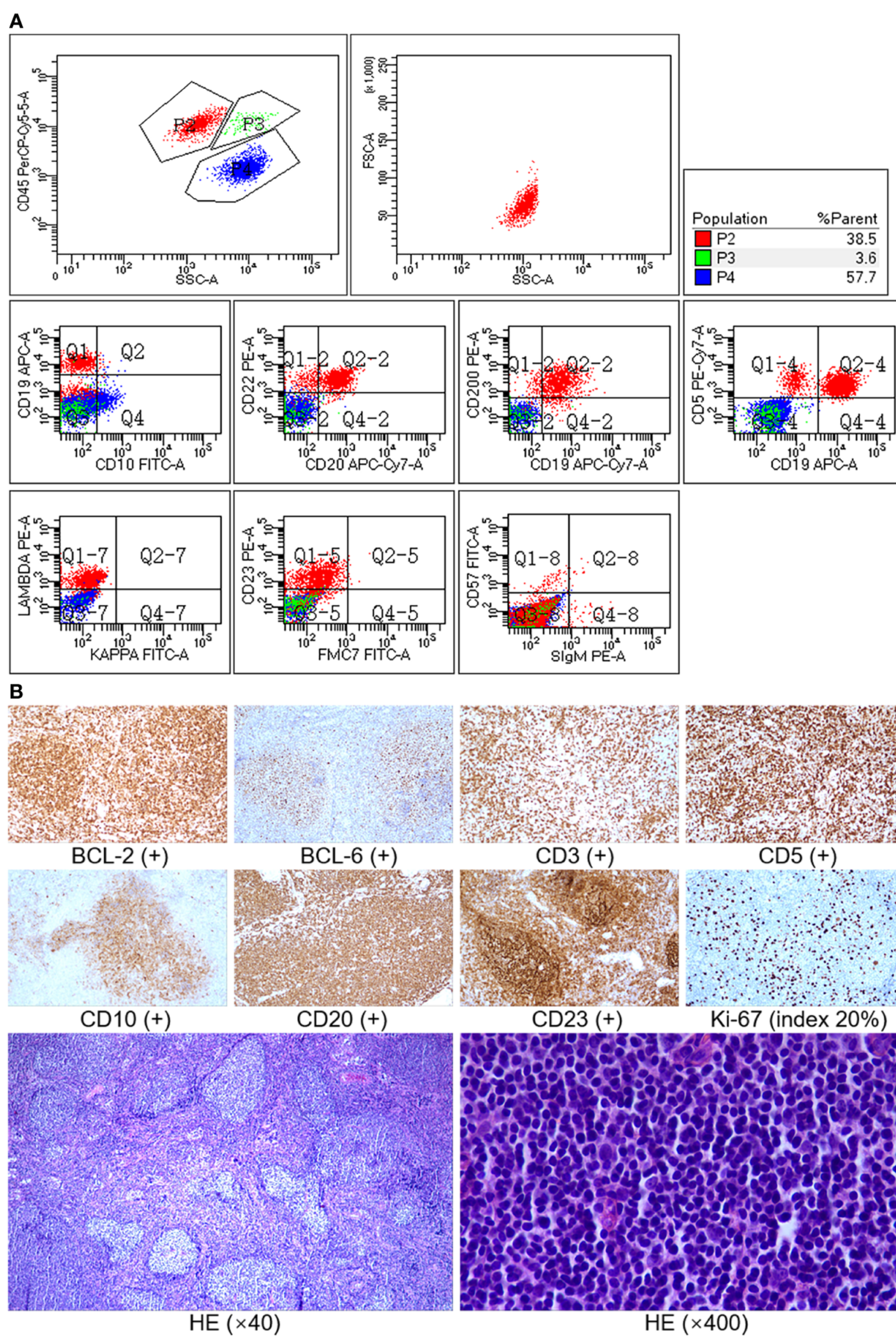


MATURE B-CELL LYMPHOMAS

Discordant compartments, phenotype overlap & diagnostic escalation

CFCM / CLINICAL POSTER SERIES / SPECIALIST CLINICAL FLOW CYTOMETRY

Literature-based diagnostic reasoning: a published follicular lymphoma case with a CLL-like marrow phenotype. No new patient data or CFCM gates.

1 Clinical question & context What is the B-cell process? Establish an abnormal mature B-cell compartment and assess its phenotype in blood, marrow or tissue. Preserve specimen-specific interpretation. When a score and the patient disagree The published case initially supported CLL by marrow flow, but nodal histology established follicular lymphoma [1]. Flow has a defined role Architecture, morphology, immunohistochemistry and appropriate genetics resolve disease categories that flow alone cannot establish.	2 Pattern-led differential CD5-positive mature B cells CLL / SLL and mantle cell lymphoma can overlap. CD23 or CD200 positivity does not absolutely exclude mantle cell lymphoma [2]. CD10-positive mature B cells A germinal-centre pattern prompts tissue correlation; marker loss or compartment differences can obscure it. Discordance is informative Do not hide an unexpected marker, compartment or morphology to improve a diagnostic score. Escalate the discrepancy and document it.	3 12-marker design brief Identity / clonality CD45 CD19 CD20 kappa lambda Co-expression / overlap CD5 CD10 CD23 CD200 Intensity / refinement CD79b CD81 FMC7 Choose extensions by question Add CD11c / CD25 / CD103 / CD123 for a relevant hairy-cell differential, or a dedicated T-cell work-up when indicated. The brief is not a validated universal lymphoma tube [3].	
4 Published dot plots & visual interpretation Published compartment discordance: marrow flow versus lymph node  Figure 2 reproduced from Ren et al. [1], © 2023 authors, CC BY. Original data, gates and labels unchanged; layout resized. Panel A is the authors' marrow analysis; panel B is nodal immunohistochemistry. Positive CD3 / CD5 background T cells and CD23-positive follicular dendritic cells must not be mistaken for tumour-cell positivity [1].	5 Diagnostic reasoning Read the original gates The plotted percentages and boundaries belong to the source case, not to a CFCM reanalysis. Raw FCS files were not available for independent review. Resolve the discordant compartment The source reports CD5 / CD23 / CD200-positive, CD10-negative marrow cells; the node supported follicular lymphoma [1]. Do not overclaim clonality The source's wording about surface Ig and light-chain restriction is not fully consistent. Do not infer a new kappa / lambda result from a reproduced image. Return to tissue A CLL-like score must not override a discordant lymph node. Request integrated review rather than presenting the marrow phenotype as a final diagnosis.		
6 Gating pitfalls Residual normal cells Compare abnormal B cells with internal B- and T-cell controls. Mixed populations can produce misleading averaged intensities. Clonality needs context Check staining, viable events and adequate light-chain expression; absence of surface Ig alone is not proof of polyclonality or clonality. Back-gate Confirm scatter and marker coherence. Exclude doublets and nonspecific binding before assigning a rare population.	7 Final interpretation For this published case Follicular lymphoma was established by integrated nodal assessment, despite a misleading marrow pattern [1]. For a new specimen Report the demonstrated phenotype, the leading differential and the evidence needed to resolve it. Do not transplant the published diagnosis. MCL overlap In the appropriate context investigate CCND1 / cyclin D1 and SOX11 rather than relying on one surface marker [2].	8 Follow-up / MRD Disease-specific assay A broad diagnostic panel is not automatically a validated MRD method. Baseline heterogeneity Preserve useful phenotypes across compartments; recognise treatment and sampling effects. Low-event findings Require coherent multiparameter identity and validated event-count limits. Report detected but not quantifiable at or below the local quantification boundary when justified.	9 Concise evidence [1] Ren Y et al. Front Oncol 2023;13:1170598. doi:10.3389/fonc.2023.1170598. Funding corrigendum:1229649. [2] Qiu L et al. Hum Pathol 2022;119:59–68. doi:10.1016/j.humpath.2021.11.001. [3] Ortolani C. Flow Cytometry of Hematological Malignancies. Wiley-Blackwell;2011. Supporting differential framework; no book figures reproduced. Technical support: Shapiro HM. Practical Flow Cytometry. 4th ed. Wiley-Liss;2003. doi:10.1002/0471722731. No book figures reproduced.

Compartment discordance should trigger diagnostic escalation, not a stronger claim based on the same flow score.