

SH/EAHP WORKSHOP PRESENTATION

CASE: SH2017-0028

9-8-2017

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ASCP 2017
ANNUAL MEETING
Practical ▶ Personalized ▶ Innovative



UAMS
COLLEGE OF MEDICINE
DEPARTMENT OF PATHOLOGY
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Clinical history

- 73 year old male with history of elevated immunoglobulin(IgM) diagnosed with monoclonal gammopathy of undetermined significance (MGUS) in 2009.
- At that time per report his bone marrow findings were within normal limits.
- Since then pt. had slow increase in IgM levels and minimal cytopenia



- Clinical symptoms were significant for fatigue and night sweats.
- Eventually diagnosed with low grade symptomatic LPL and treated with one dose of Rituximab. Patient was transferred to our institution for second opinion and treatment

Case summary-BM biopsy & aspirate studies

CBC:

WBC	3.00-12.00 K/uL	8.95
RBC	4.50-6.00 M/uL	4.18 (L)
Hemoglobin	13.5-17.5 g/dL	11.9 (L)
Hematocrit	40.0-52.0 %	36.4 (L)
MCV	79.0-96.0 fL	87.1
MCH	27.0-36.0 pg	28.5
MCHC	30.0-36.0 g/dL	32.7
RDW	11.0-14.0 %	15.5 (H)
Platelet	150-500 K/ μ L	81 (L)
MPV	8.1-12.8 fL	10.4
Nucleated RBC		0

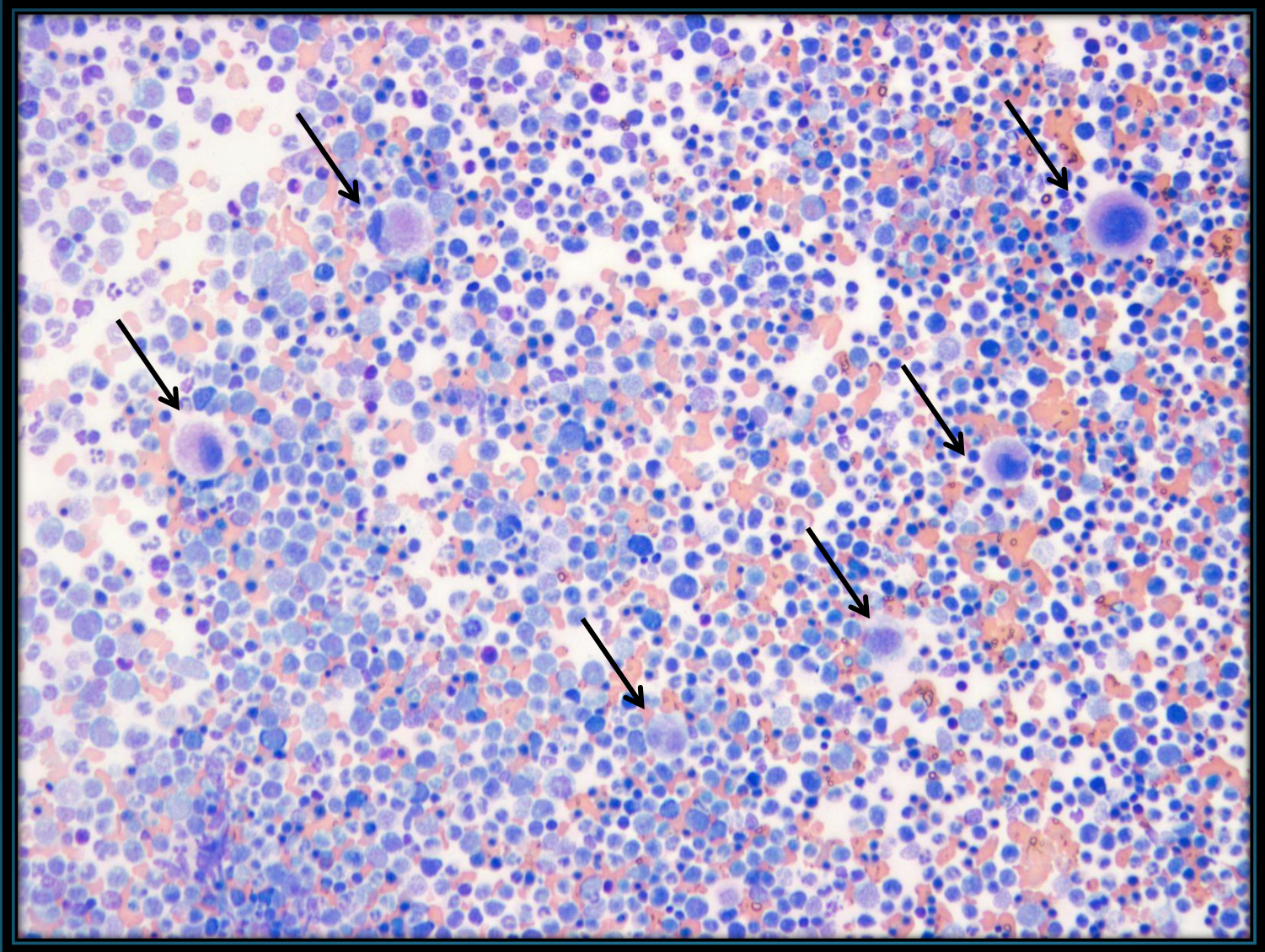
Metamyelocyte	%	3
Bands	0-20 %	4
Neutrophils, Manual	40-80 %	66
Lymphocytes, Manual	10-60 %	7 (L)
Monocytes, Manual	0-20 %	20
Eosinophils, Manual	0-10 %	1
Basophils, Manual	0-5 %	0
Bands, Manual Absolute	K/uL	0.3
Neutrophils, Manual Absolute	2.5-8.2 K/uL	5.9
Lymphocytes, Manual Absolute	1.0-4.8 K/uL	0.6 (L)
Monocytes, Manual Absolute	0.1-1.0 K/uL	1.8 (H)
Eosinophils, Manual Absolute	0.0-0.4 K/uL	0.1

Bone marrow aspirate & Bx - Significant for hypercellularity, trilineage dyspoiesis with mild monocytosis, small lymphoplasmacytic aggregates

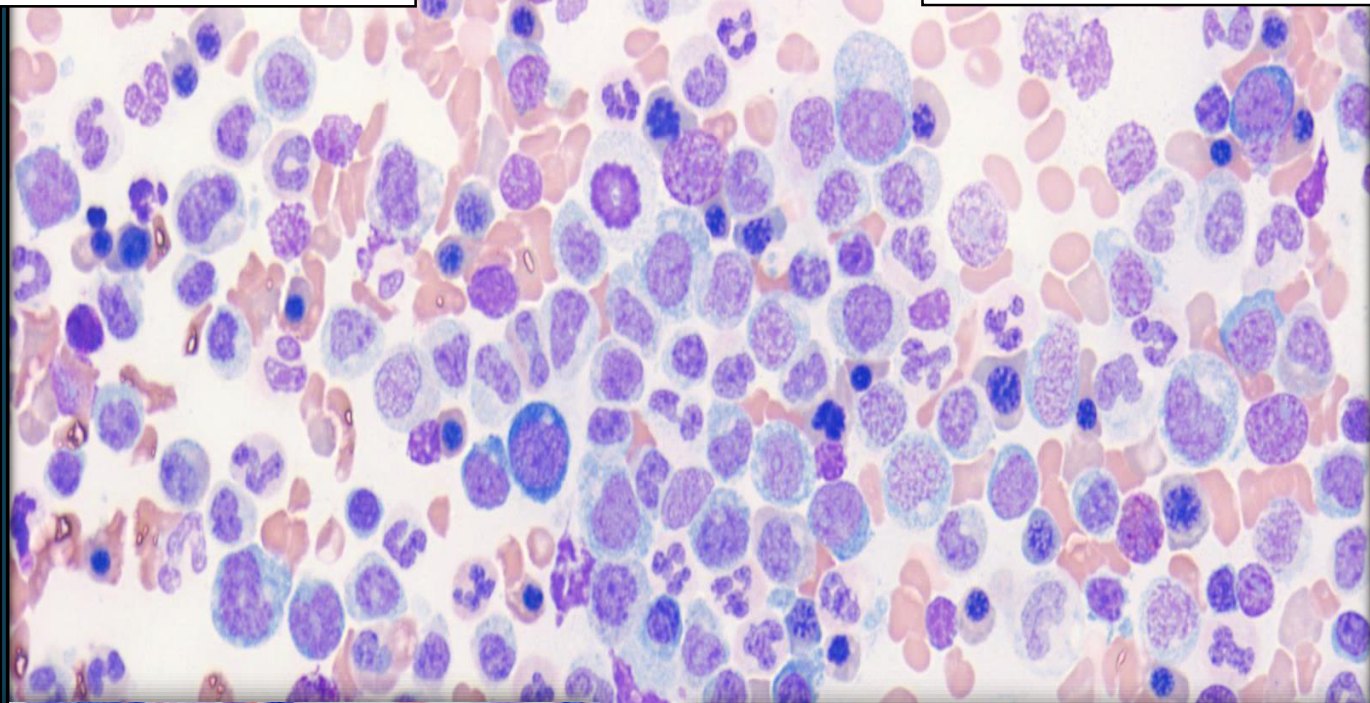
Ancillary studies

- Flow cytometry – myeloid, lymphoid and plasma cell immunophenotype
- Cytogenetics
 - Karyotype
 - FISH analysis:- MDS panel
- Molecular (foundation 1)

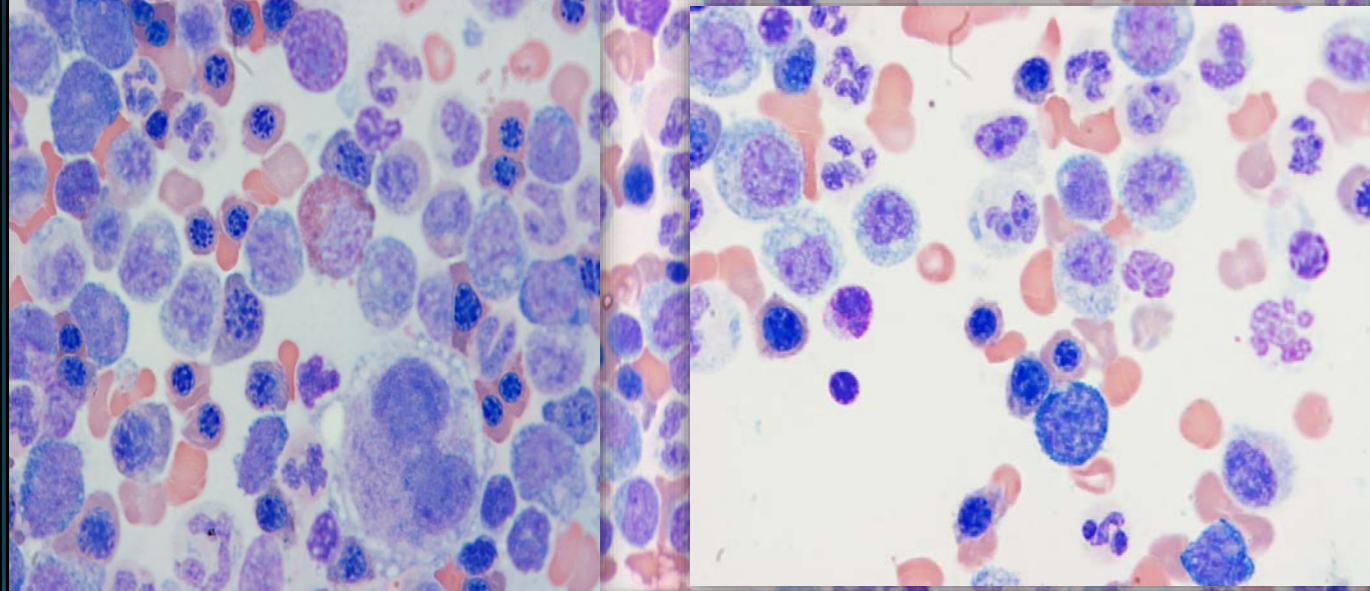
Dysmegakaryopoiesis



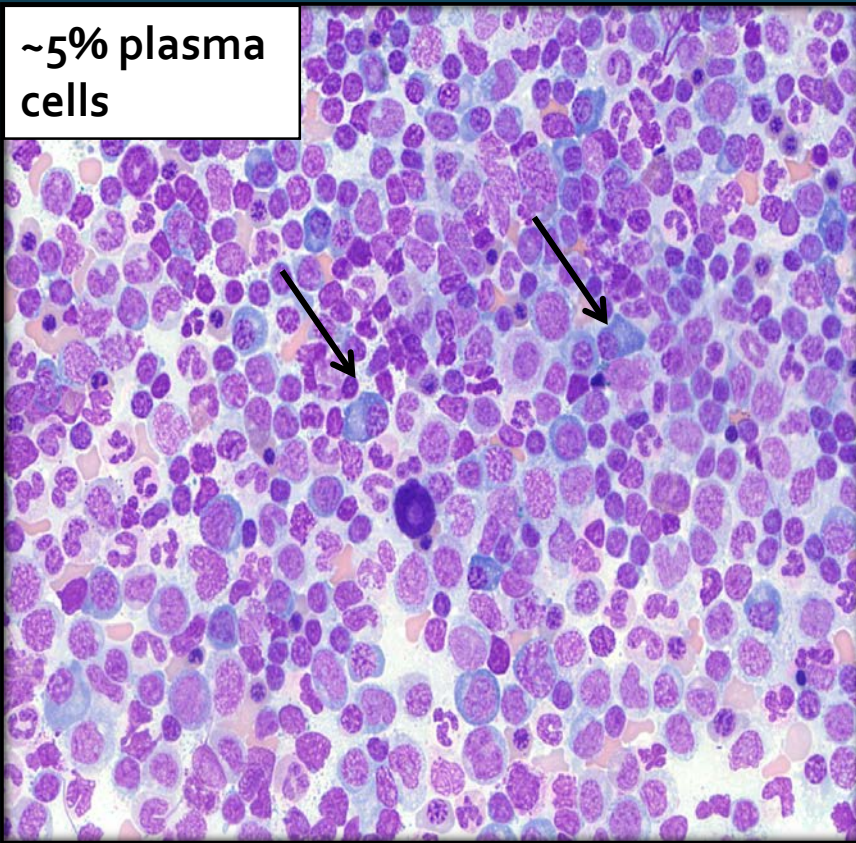
Dysgranulopoiesis



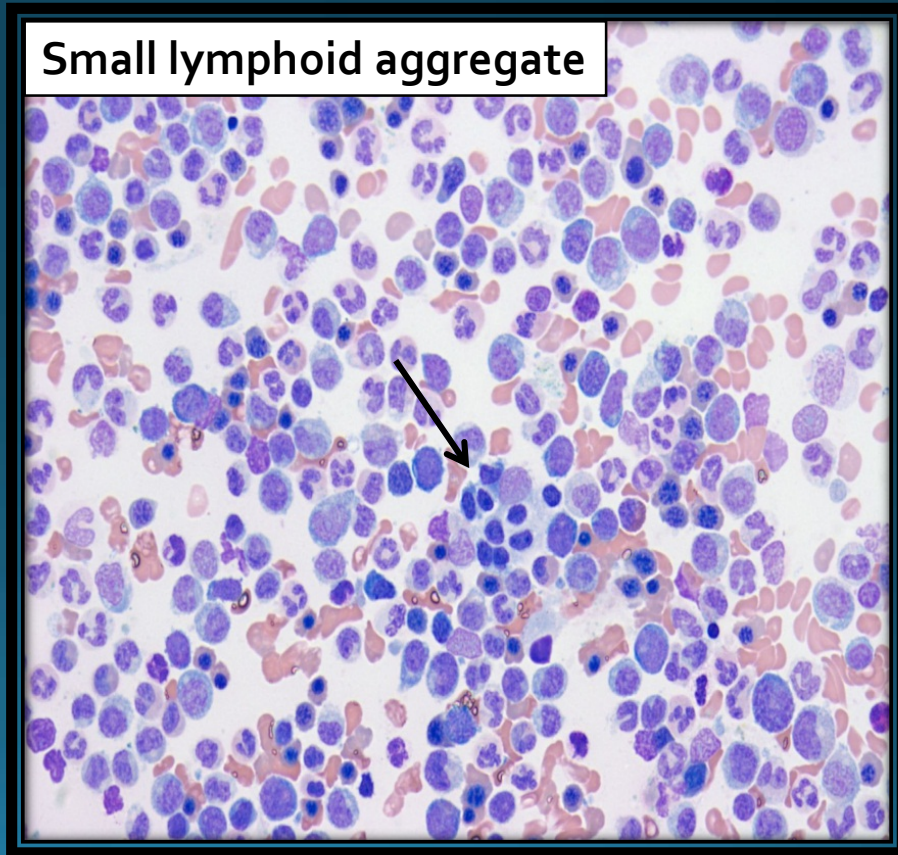
Mild dyserythropoiesis

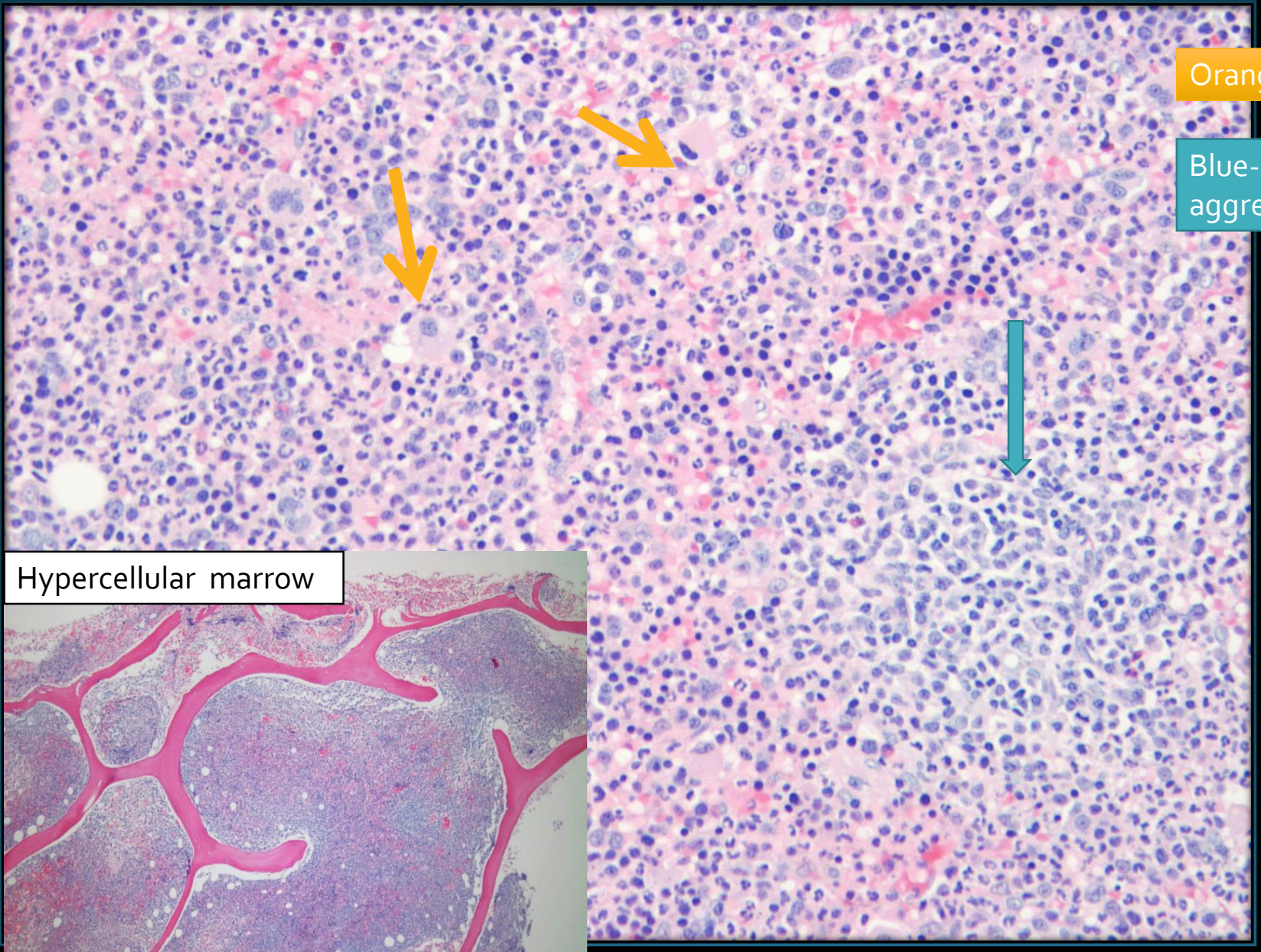


~5% plasma
cells



Small lymphoid aggregate

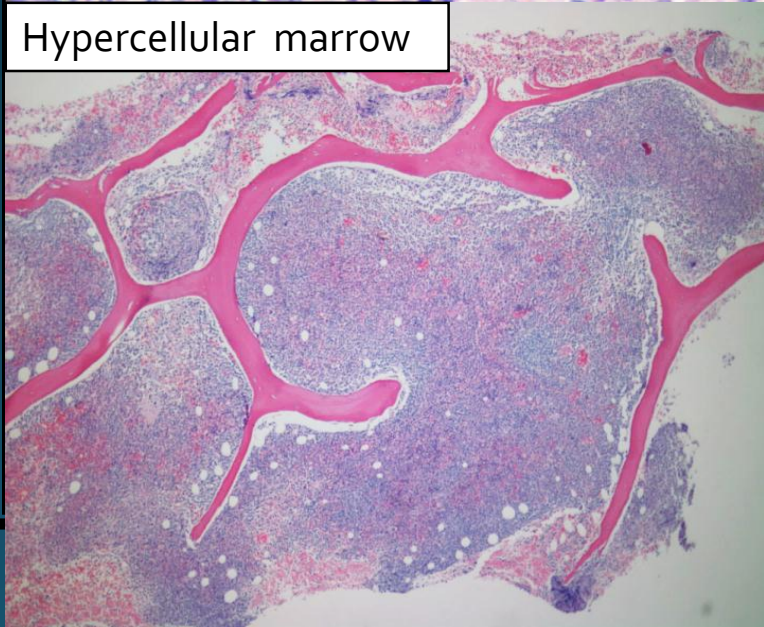




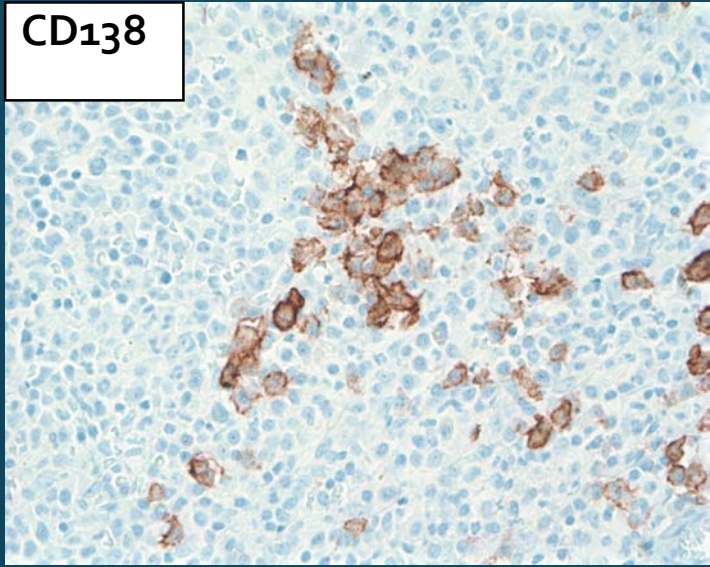
Orange-Megakaryocyte

Blue- Lymphoid aggregate

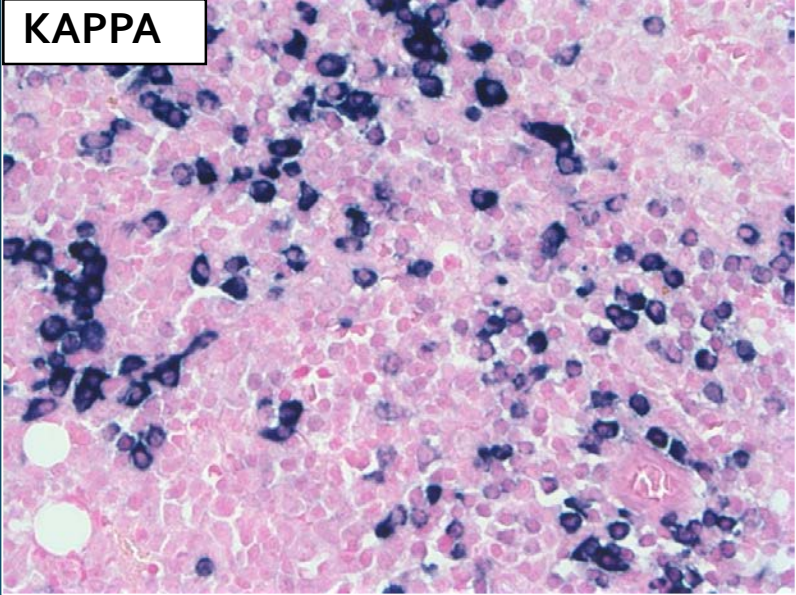
Hypercellular marrow



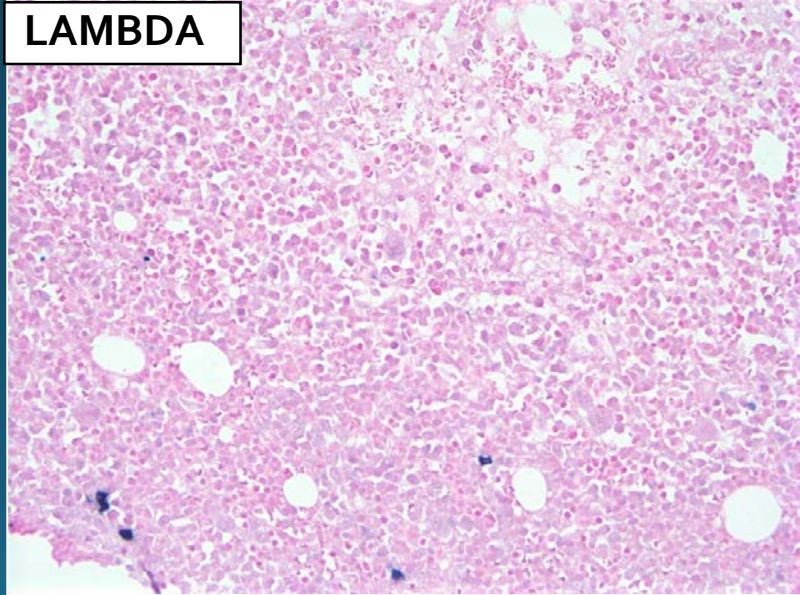
CD138



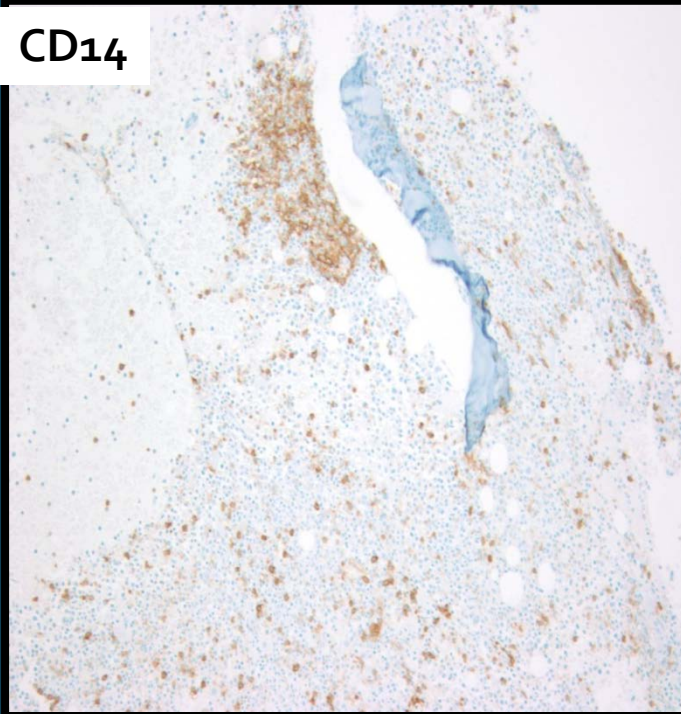
KAPPA



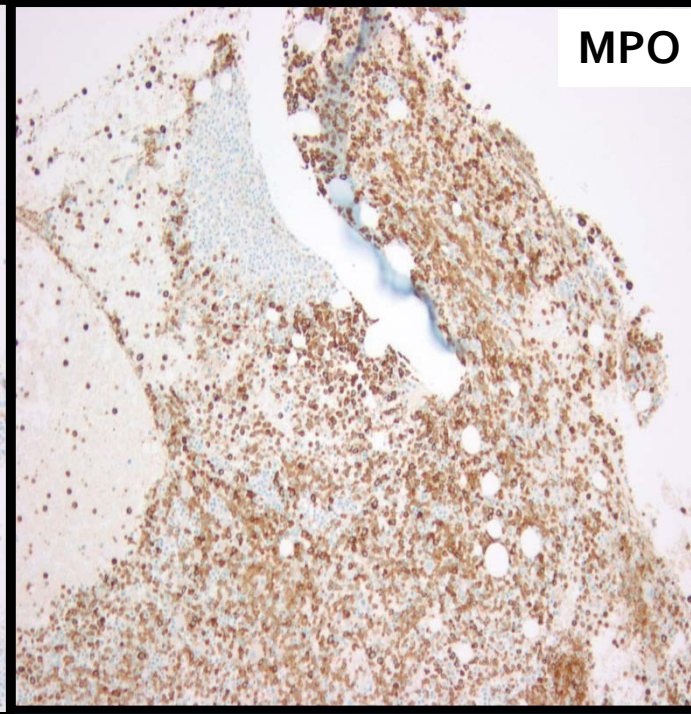
LAMBDA



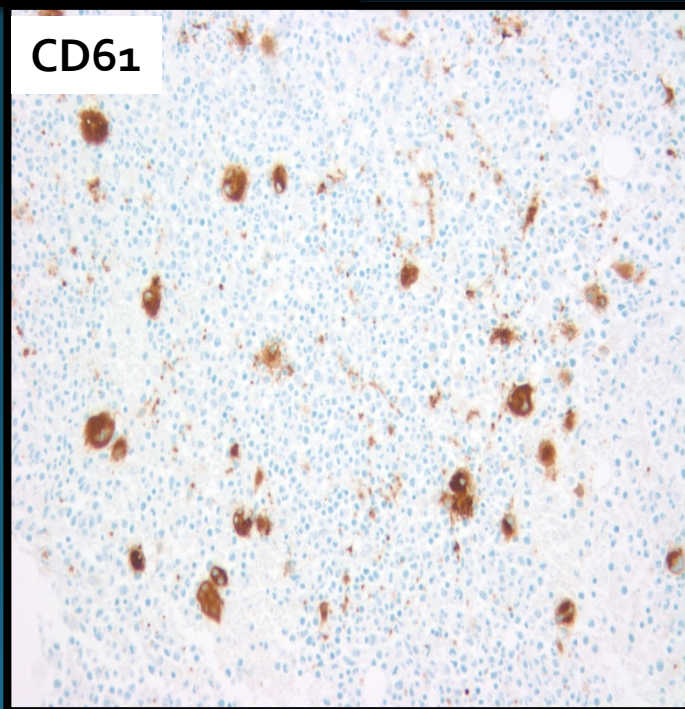
CD14



MPO



CD61



Case summary: Ancillary tests findings:

- Flow cytometry- Immunophenotype:
 - CD5 negative kappa light chain restricted B cell population (0.5% of all analyzed events)
 - Kappa restricted plasma cell population
 - No increase in myeloblasts (0.6% by flow with normal immunophenotype)
 - Mild increase in monocytes

Chromosomal analysis: normal male karyotype, and no evidence of an acquired clonal abnormality.

FISH: No evidence of numeric or structural abnormalities of chromosomes 5, 7, 8, 11, 13, or 20

NGS (F1) CD19 sorted-DNA : (genomic alterations in MYD88 L265P, ARID2 N156fs*3 and ASXL1 E635fs*15.)

Diagnosis:

- CHRONIC MYELOMONOCYtic LEUKEMIA (CMML-o)
- LOW LEVEL INVOLVEMENT BY LYMPHOPLASMACYTIC LYMPHOMA

Case summary: Clinical correlation

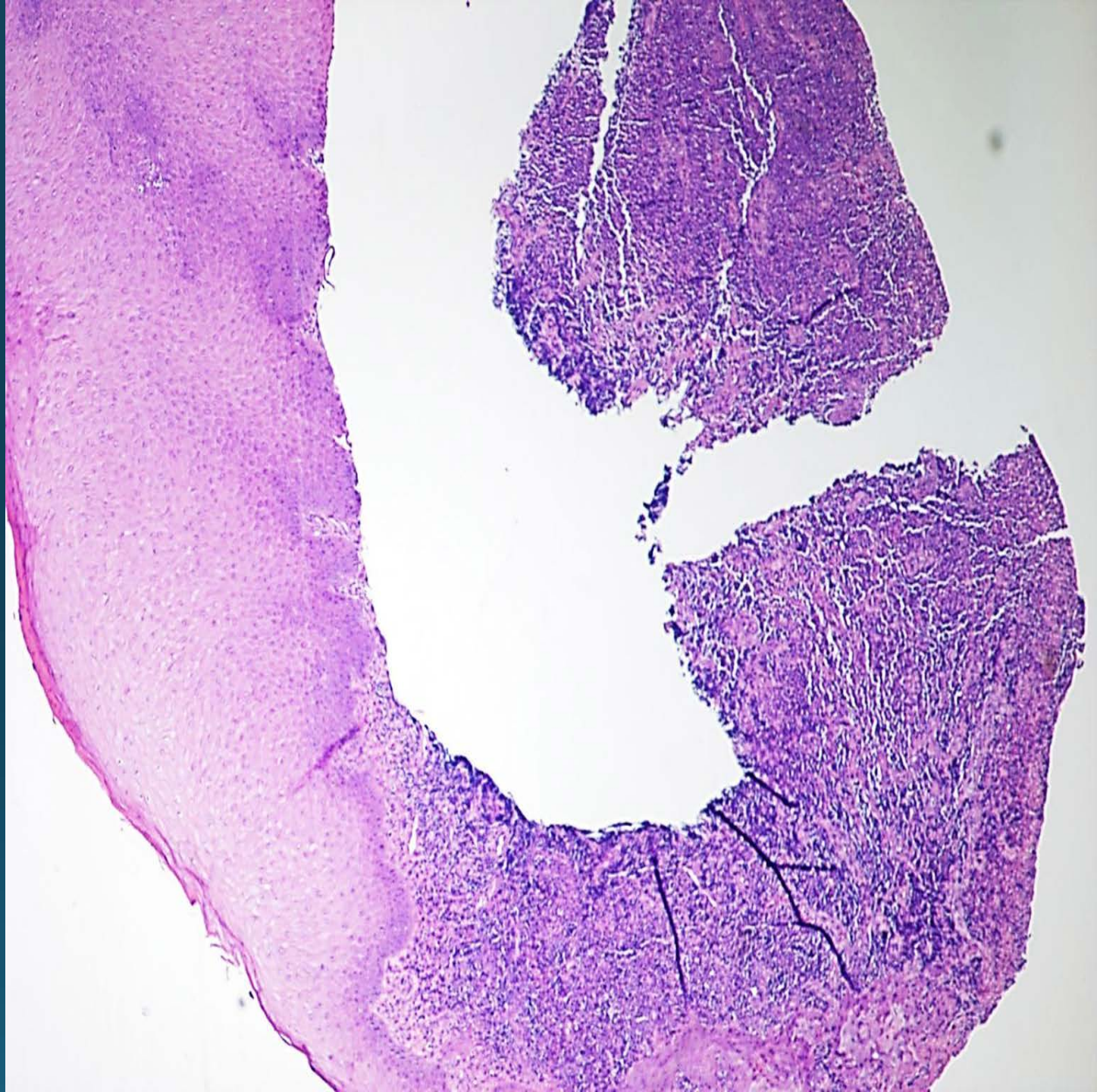
Upon discussion with the clinician and with the concern for bone marrow involvement by CMML, the clinician mentioned noticing patients gum hyperplasia – which lead to gum biopsy.

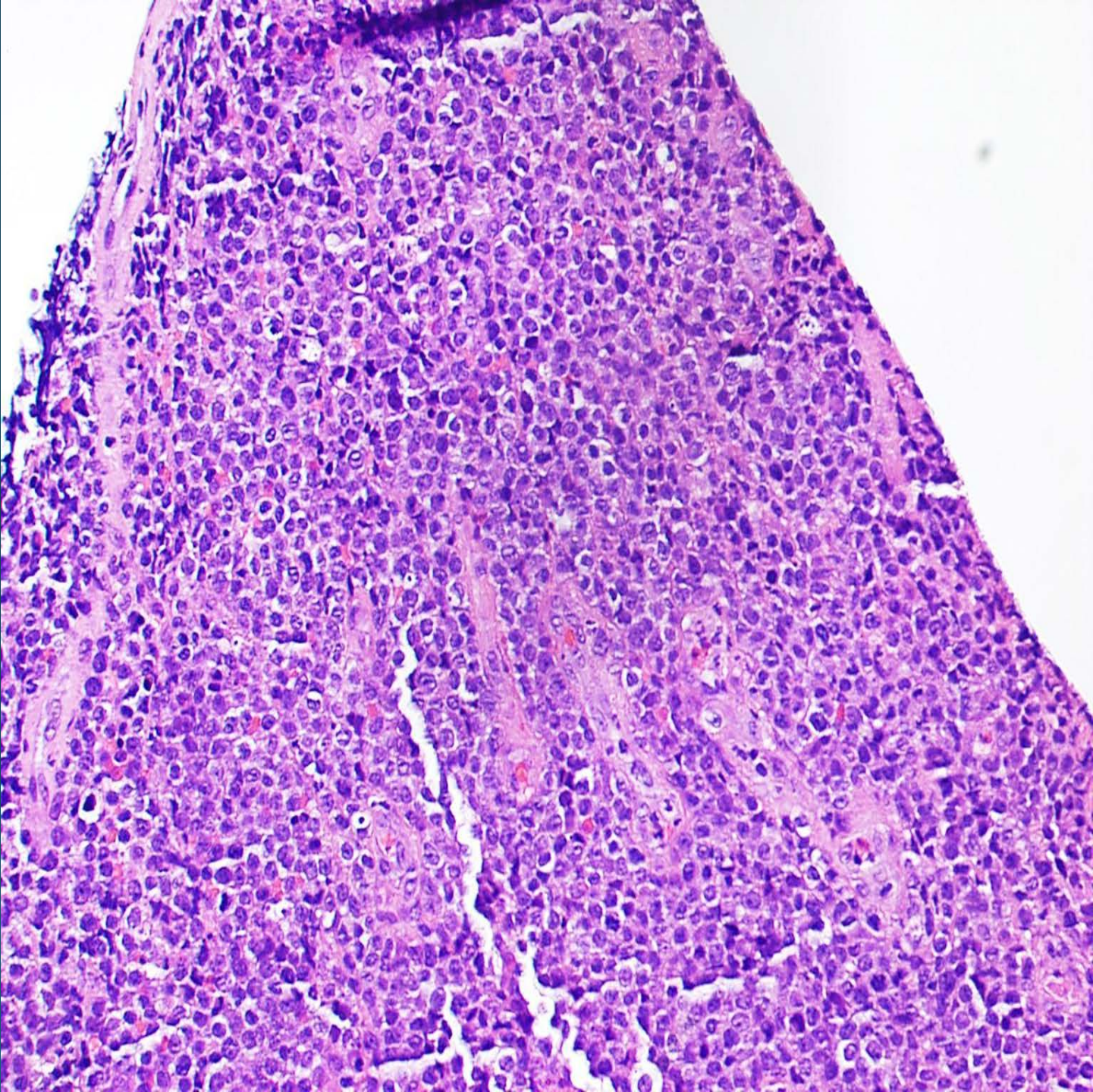
Case summary: Gum biopsy

Gum biopsies from right, left and middle gum, all were received fresh and a repeat bone marrow biopsy

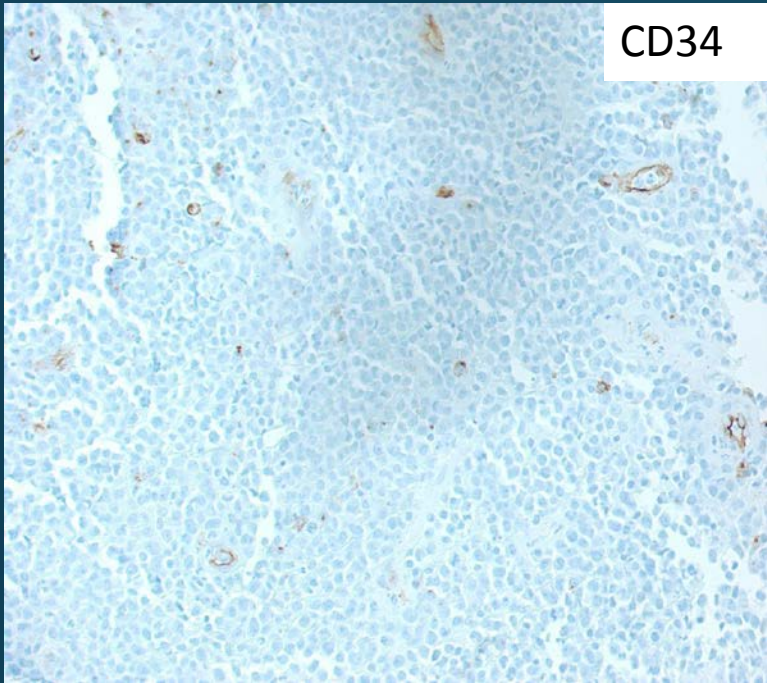
Ancillary studies

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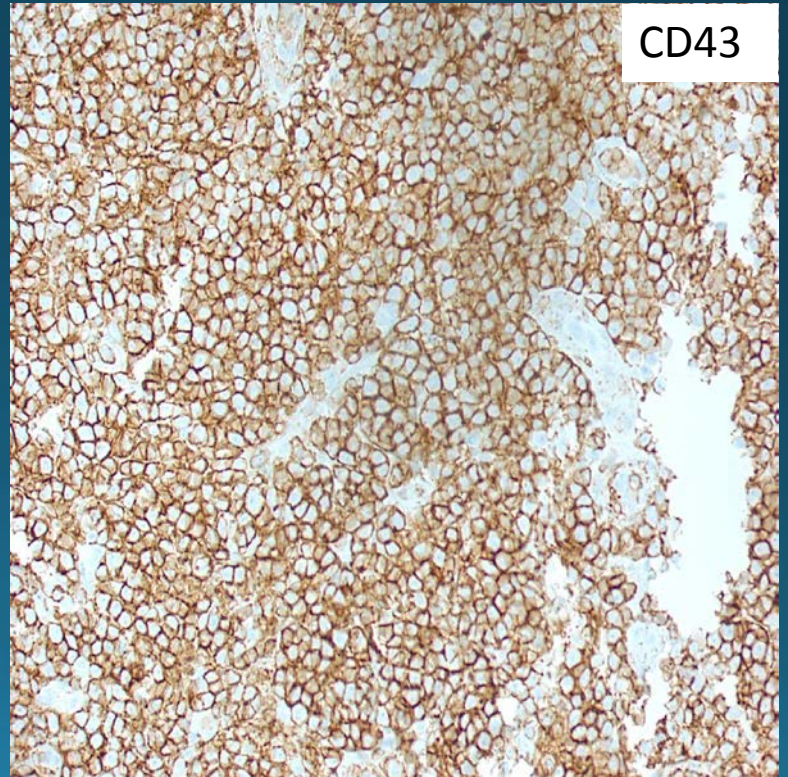




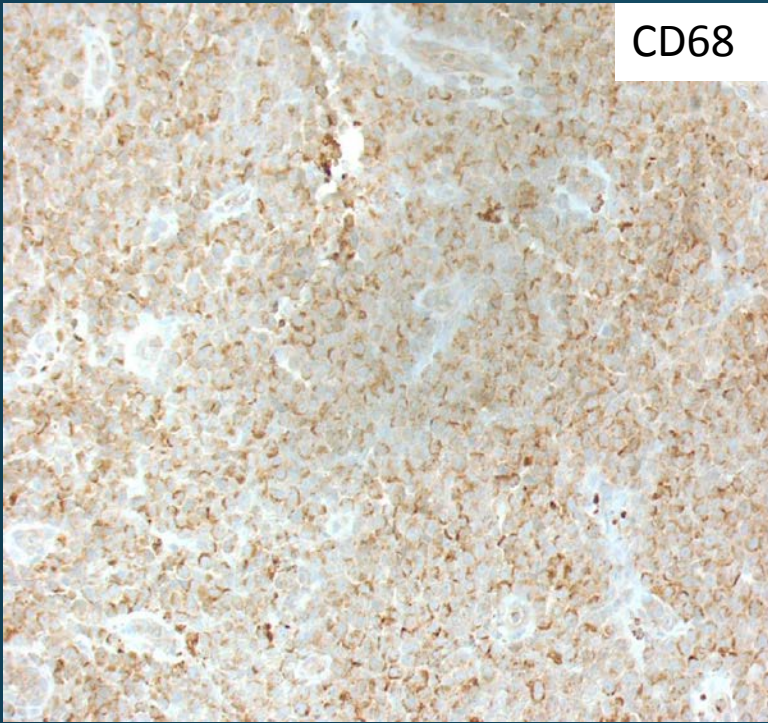
CD34



CD43

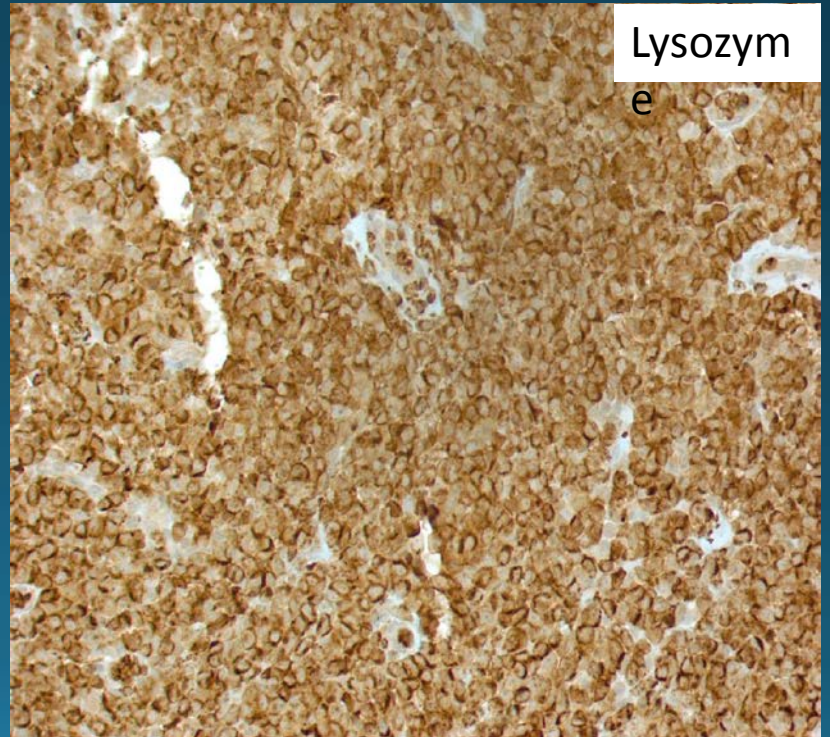


CD68



Lysozyme

e



Ancillary tests findings: Gum biopsy

- Chromosome analysis: Unsuccessful cell culture
- FISH: No evidence of monosomy 5, deletion 5q, t(8;21), t(11q23) or inv(16).
- NGS (F1) unsorted-DNA: Genomic alterations in STAG2 T244fs*7 and ASXL1 E635fs*15
- NGS performed on concurrent whole bone marrow aspirate showed:
 - NGS(F1) CD34 sorted-DNA: ASXL1 E635fs*15 and STAG2 T244fs*7
 - NGS(reference lab) unsorted-DNA: ASXL1 E635fs*15

Summary of NGS studies and points to discuss:

Tissue	sample	lab	Results	/ VAF- %
BM (at presentation)	CD19+ cells (low purity)	F1	ASXL1	28
			ARID2	15
			MYD88	10
Gum(4 weeks after presentation)	unsorted	F1	ASXL1	47
			STAG2	44
BM (4 weeks after presentation)	CD34+ cells	F1	ASXL1	34
			STAG2	58
BM(4 weeks after presentation)	unsorted	Reference lab*	ASXL1	NA

* The panel didn't include MYD88, STAG2 and ARID2

CASE: SH2017-0028

Proposed Diagnosis:

ASXL1 positive Incidental myeloid sarcoma diagnosed in a patient with lymphoplasmacytic lymphoma (LPL).

Panel Diagnosis:

Occult myeloid sarcoma (in a patient with lymphoplasmacytic lymphoma).

Thank you