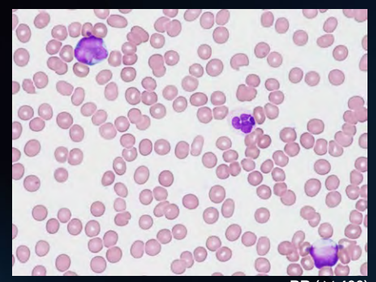
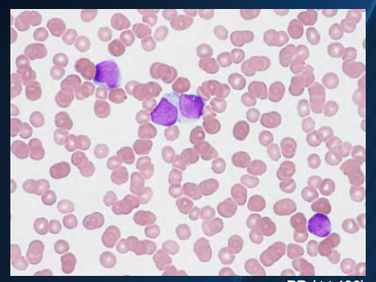
Case 4

AML, myelodysplasia related(AML-MR)

A female patient, age in her 70s, attended the hospital with essential thrombocythemia (*CALR* mutation positive). HU (hydroxyurea) was prescribed, but 10 years later, blasts began to appear. The patient was diagnosed with MDS-IB1 and is currently under observation.

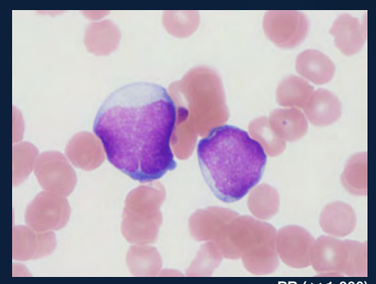
Blood smear (May-Giemsa staining)


PB (× 400)


PB (× 400)


PB (× 1,000)


PB (× 1,000)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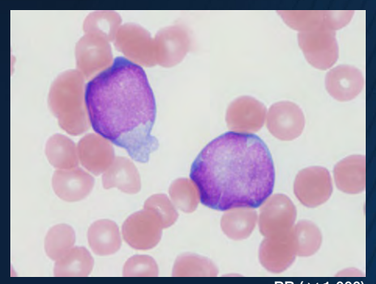

PB (× 1,000)

Visual differential counts

Blast	78.0
Promyelo	0.0
Myelo	0.0
Meta	1.0
Band	1.0
Seg	11.0
Eosino	0.0
Baso	0.0
Mono	1.0
Lympho	8.0
At-Ly	0.0
NRBC	0.0
Other	0.0

Explanation of case

A complete blood count revealed an elevated number of white blood cells, anemia, and thrombocytopenia. A visual white blood cell differential count revealed that 78.0 % was blast cells. Dysplasia of degranulated neutrophils was also observed in the neutrophils. Due to the history of chemotherapy, it was considered that the patient had developed a treatment-related myeloid neoplasm (AML-MR) as a result of chemotherapy. On the smear sample, the blasts were 15 to 20 µm in size, with basophilic cytoplasm, fine chromatin, nucleoli, and some notches. Degranulated neutrophils and hyper segmented neutrophils with degranulation were also observed.

Celltac Data

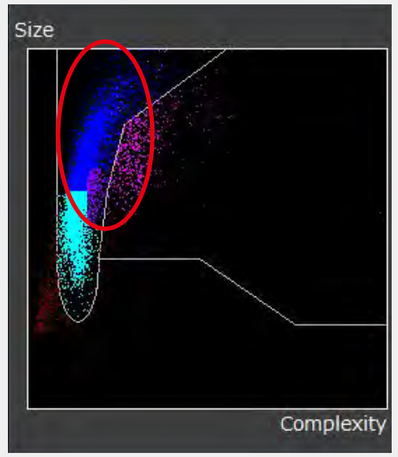
Numerical results

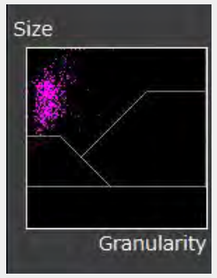
WBC	11.60	H	$10^3/\mu L$
RBC	2.89	L	$10^6/\mu L$
HGB	8.65	L	g/dL
HCT	25.3	L	%
MCV	87.5		fL
MCH	29.9		pg
MCHC	34.2		g/dL
RDW-CV	12.8		%
RDW-SD	44.8		fL
PLT	20.7	*	$10^3/\mu L$
PCT	0.02	L	%
MPV	9.2		fL
PDW	20.4	H	%
P-LCR	50.4		%
P-LCC	10.4	L	$10^3/\mu L$
NE	0.80	*	$10^3/\mu L$
LY	4.89	*	$10^3/\mu L$
MO	5.33	*	$10^3/\mu L$
EO	0.00	*	$10^3/\mu L$
BA	0.58	*	$10^3/\mu L$
NE%	6.91	*	%
LY%	42.13	*	%
MO%	45.94	*	%
EO%	0.00	*	%
BA%	5.02	*	%
RET	0.0020	L	$10^6/\mu L$
RET%	0.07	L	%
IRF	14.3		%
LFR	85.7	L	%
MFR	14.3		%
HFR	0.0		%

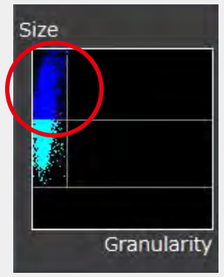
Flags

Morphological Flags	Numerical Flags
Blast	Neutropenia
Left Shift	Lymphocytosis
Atypical Ly	Monocytosis
Ly-Mo Interference	Basophilia
	Anemia
	Thrombocytopenia

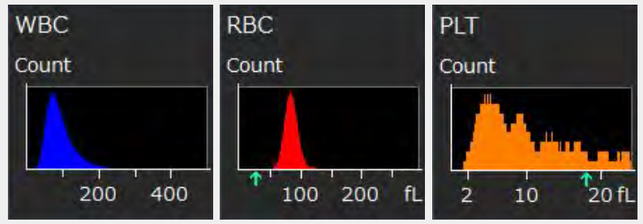
Scattergrams



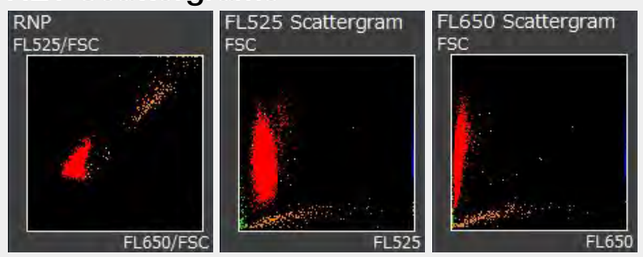




Histograms



RET Scattergrams



Explanation of scattergram/histogram

Monocyte plots on the MAIN scattergram and MO-BA scattergram showed an abnormal distribution extending to the top (○) and distributed even in the blast cell flag detection area, suggesting the appearance of blast cells. The "Blast" flag was displayed to indicate this. On the RET scattergram, the reticulocyte plot was almost unidentifiable, indicating a decrease in reticulocytes.

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