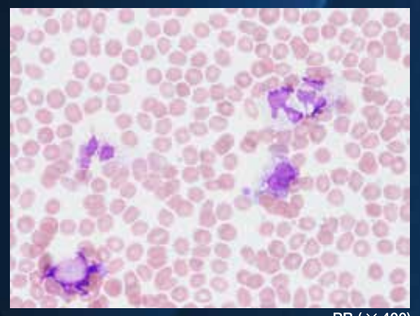
Case 11

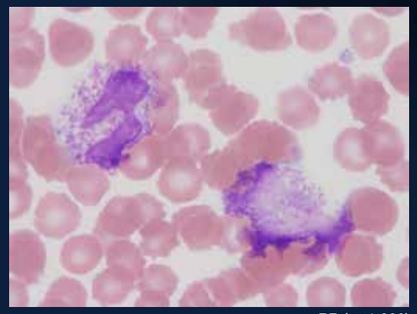
Neutrophilia (Toxic Granulation)

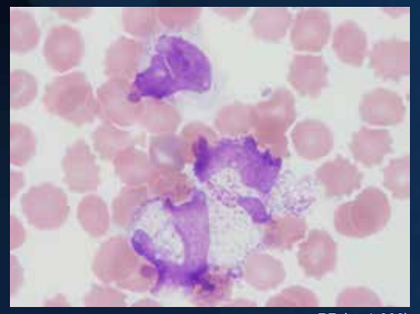
The patient was urgently admitted due to impaired consciousness and suspected cerebral embolism.

Blood smear (May-Giemsa staining)


PB (×400)


PB (×400)


PB (×1,000)


PB (×1,000)

Visual differential counts

	(%)
Blast	0.0
Promyelo	0.0
Myelo	3.0
Meta	2.5
Band	18.0
Seg	60.5
Eosino	1.0
Baso	0.0
Mono	8.5
Lympho	6.5
Reactive-Ly	0.0
Other	0.0
NRBC	3/100WBC

Explanation of case

The complete blood count revealed an increased leukocyte level of 44.69 × 10^3/μL, and anemia was observed. The white blood cell differential count indicated an increase in neutrophils. Biochemical tests revealed elevated C-reactive protein (CRP) at 8.46 g/dL and LD at 578 U/L, indicating inflammation and increased LD levels. Peripheral blood smear showed the appearance of immature neutrophils, including myelocytes and band neutrophils, with toxic granulation in these neutrophils.

Celltac Data

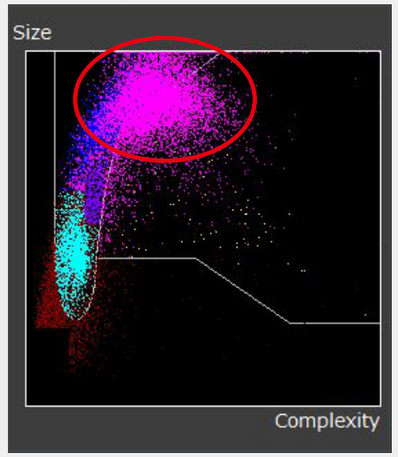
Numerical results

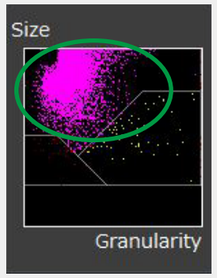
WBC	44.69	H	10^3/μL
RBC	3.98		10^6/μL
HGB	11.77		g/dL
HCT	35.1		%
MCV	88.2		fL
MCH	29.6		pg
MCHC	33.5		g/dL
RDW-CV	15.0	H	%
RDW-SD	52.9		fL
PLT	222.1		10^3/μL
PCT	0.22		%
MPV	9.8		fL
PDW	19.0		%
P-LCR	53.4		%
P-LCC	118.6		10^3/μL
NE	28.51	*	10^3/μL
LY	5.66	*	10^3/μL
MO	8.92	*	10^3/μL
EO	0.16	*	10^3/μL
BA	1.44	*	10^3/μL
NE%	63.79	*	%
LY%	12.66	*	%
MO%	19.97	*	%
EO%	0.35	*	%
BA%	3.23	*	%
RET	0.0915		10^6/μL
RET%	2.30		%
IRF	37.7	H	%
LFR	62.3	L	%
MFR	20.0	H	%
HFR	17.7	H	%

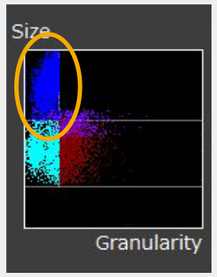
Flags

Morphological Flags	Numerical Flags
Blast	Leukocytosis
Immature Granulocyte	Neutrophilia
Left Shift	Lymphocytosis
	Monocytosis
	Basophilia

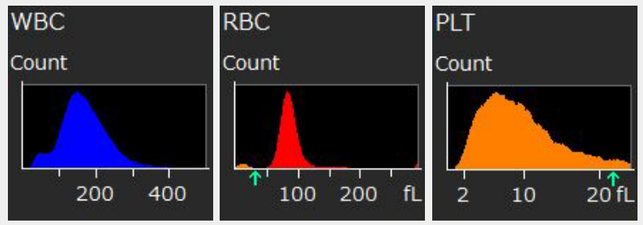
Scattergrams



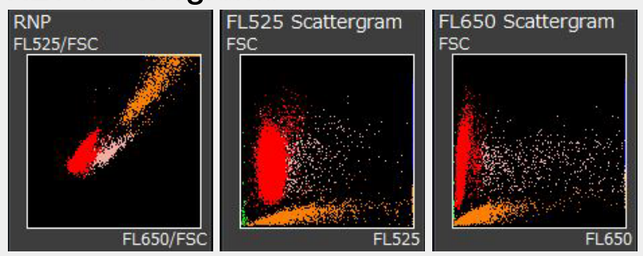




Histograms



RET Scattergrams



Explanation of scattergram/histogram

The neutrophil plot on the MAIN scattergram shows a shift to the left (○). The neutrophil plot on the NE-EO scattergram exhibits a distribution extending to the upper part (○), suggesting the appearance of immature cells. An “Immature Granulocyte” flag indicating this is shown. Additionally, the MO-BA scattergram shows an abnormal distribution where the monocyte plot extends to the Blast flag detection area in the upper part (○). A “Blast” flag indicating the appearance of blasts is shown. This could be due to immature neutrophils, with toxic granulation being plotted in the MO area.

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11246 SP74-0042 '25.6. SE. PDF