

On-line Table 1: Findings on CT and/or MR imaging from first work-up after onset of symptoms in 75 patients with PCNSL

Findings	No. of Patients (%)		
	CT ($n_1 = 66$)	MRI ($n_2 = 52$)	CT and/or MRI ($n_3 = 75$)
No lesion	10* (15)	3 (6)	10* (13)
Single focal lesion	33 (50)	25 (48)	34 (45)
Multiple focal lesions	21 (32)	18 (35)	26 (35)
Disseminated lesions	2 (3)	6 (12)	5 (7)
Mean, median (range) no. of focal lesions†	1.4, 1 (0–6)	1.6, 1 (0–6)	1.5, 1 (0–6)
Lesion location			
Frontal lobe	31 (47)	24 (46)	37 (49)
Parietal lobe	7 (11)	6 (12)	5 (7)
Temporal lobe	7 (11)	12 (23)	14 (19)
Occipital lobe	3 (5)	7 (14)	6 (8)
Insula	1 (2)	2 (4)	1 (1)
Basal ganglia	18 (27)	20 (39)	24 (32)
Corpus callosum	9 (14)	10 (19)	14 (19)
Intraventricular	2 (3)	1 (2)	2 (3)
Brain stem	3 (5)	5 (10)	4 (5)
Cerebellum	3 (5)	8 (15)	8 (11)
Concomitant hemorrhage in lesion	1* (2)	5 (10)	6* (8)
Time from 1st symptom to imaging (weeks): mean, median (range)	13.8, 6.5 (0–208)	16.7, 7.0 (0–206)	14.2, 6.0 (0–206)
Time from imaging to histologic diagnosis (weeks): mean, median (range)	10.3, 4.0 (0–125)	7.0, 3.0 (0–42)	10.0, 3.0 (0–125)

Note:— n_1 indicates number of patients with available CT imaging; n_2 , number of patients with available MR imaging; n_3 , number of patients with available CT and/or MR imaging; MRI, MR imaging; PCNSL, primary central nervous system lymphoma.

* Includes 1 patient with tumor in a large chronic subdural hematoma.

† Disseminated lesions not included.

On-line Table 2: Features of 103 focal lesions on CT and/or MR imaging from the first work-up after onset of symptoms in 60 patients with PCNSL

	No. of lesions (%)		
	CT ($n_1 = 89$)	MRI ($n_2 = 74$)	CT and/or MRI ($n_3 = 103$)
Lesion location			
Frontal lobe	40 (45)	26 (35)	44 (43)
Parietal lobe	6 (7)	4 (5)	6 (6)
Temporal lobe	5 (6)	7 (10)	8 (8)
Occipital lobe	2 (2)	3 (4)	3 (3)
Insula	1 (1)	2 (3)	1 (1)
Basal ganglia	19 (21)	16 (22)	21 (20)
Corpus callosum	8 (9)	5 (7)	9 (9)
Intraventricular	3 (3)	3 (4)	4 (4)
Brain stem	3 (3)	2 (3)	1 (1)
Cerebellum	2 (2)	6 (8)	6 (6)
Right side	41 (46)	35 (47)	48 (47)
Left side	37 (42)	31 (42)	44 (43)
Midline	11 (12)	8 (11)	11 (11)
Gray matter	16 (18)	19 (26)	21 (20)
White matter	55 (62)	43 (58)	65 (63)
Gray and white matter	18 (20)	12 (16)	17 (17)
Periventricular	51 (57)	38 (51)	58 (56)
Bordering surface of the brain	38 (43)	37 (50)	46 (45)
Margins			
Sharp	44 (49)	45 (61)	60 (58)
Moderately sharp	25 (28)	14 (19)	23 (22)
Irregular	20 (23)	15 (20)	20 (19)
Edema			
Absent	18 (20)	15 (20)	24 (23)
Mild	31 (35)	39 (53)	38 (37)
Extensive	40 (45)	20 (27)	41 (40)
Mass effect			
Minimal	16 (18)	21 (28)	27 (26)
Mild	35 (39)	35 (47)	36 (35)
Extensive	38 (43)	18 (24)	40 (39)
Contrast enhancement*			
Mild	17 (21)	12 (17)	18 (18)
Pronounced	64 (79)	59 (83)	84 (82)
Homogeneous	50 (62)	30 (42)	57 (56)
Ringlike	12 (15)	8 (11)	13 (13)
Size of lesion, largest diameter in mm: mean, median (range)	28.0, 25.0 (4–85)	26.2, 23.5 (5–61)	28.4, 25.0 (4–85)

* $n_1 = 81$, $n_2 = 71$, $n_3 = 102$.

On-line Table 3: Clinical and diagnostic features of 10 patients having no lesion at first imaging

Age*	Sex	Primary Symptoms; Duration Prior to 1st Imaging		1st Imaging Indication	CSF Sample†	Renewed Imaging Prior to Diagnosis	Weeks from 1st Imaging to Renewed Imaging		Renewed Imaging Report Indication	Clinical Course	Diagnosis of PCNSL While Alive	Histologic Diagnosis	Weeks from 1st Imaging to Diagnosis
		1st MR + k	Headache (2)	Normal	Yes‡§	MR + k	35	Enhancement in the meninges					
15	F	MR + k	Headache (2)	Normal	Yes‡§	MR + k	35	Enhancement in the meninges		Diagnosis from cytology of spinal fluid; chemotherapy; alive 5.5 years after diagnosis	Yes	Precursor B lymphoblastic lymphoma	35
59	F	MR + k	Headache (161)	Hydrocephalus	Yes‡§	CT + k¶	34	Single lesion		Primary radiotherapy; chemotherapy at relapse; died 27 months after diagnosis	Yes	B-cell lymphoma, NOS	36
64	M	MR + k#	Cerebellar (6)	Diffuse white matter disease	Yes‡	MR + k	12	Diffuse white matter disease		Clinically suspected viral encephalitis or Creutzfeldt-Jakob disease; died 5 months after 1st imaging	No	Intravascular large B-cell lymphoma	20
71	M	CT + k	Headache (3)	Normal	Yes	CT + k	22	Single lesion		Radiotherapy, chemotherapy; died 7.5 years after diagnosis	Yes	Diffuse large B-cell lymphoma	30
76	M	CT + k	Visual disturbance (8)	Normal	Yes‡§	MR + k	30	Multiple lesions		Radiotherapy; died 9 months after diagnosis	Yes	Diffuse large B-cell lymphoma	33
56	M	CT – k	Personality change (40)	Normal	Yes‡¶	CT + k	20	Multiple lesions		Rapid deterioration on chemotherapy; died 3 months after diagnosis	Yes	Diffuse large B-cell lymphoma	31
68	M	CT – k	Cerebellar (2)	Cerebral atrophy	Yes‡	CT – k	57	Cerebral atrophy		Slowly developing dementia; died 28 months after 1st imaging	No	Diffuse large B-cell lymphoma	125
71	M	CT – k	Headache (14)	Normal	Yes‡	CT + k	33	Multiple lesions		Chemotherapy; died of treatment-related complications 4 months after diagnosis	Yes	Diffuse large B-cell lymphoma	37
72	M	CT – k	Focal neurologic (3)	Subdural hematoma	No	No				Sudden death 10 days after evacuation of hematoma (diagnosis)	Yes	Peripheral T-cell lymphoma	0
77	M	CT – k	Personality change (13)	Old infarction	No	No				Arterial embolus to a limb led to rapid death 3 days after 1st imaging	No	Diffuse large B-cell lymphoma	0

Note:—NOS indicates not otherwise specified; MR +k, contrast-enhanced MR imaging; CT +k, contrast-enhanced CT; CT –k, noncontrast CT.

* Age at first imaging (years).

† CSF sampling performed with a mean (median, range) of 24 (23, 0–58) weeks after first imaging.

‡ Elevated CSF protein level.

§ Elevated CSF white cell count.

¶ MR + k (twice) and CT (–k) (twice) showing almost normal findings, except enhancement in the meninges at MR imaging.

CT – k was performed twice (showing hydrocephalus) between first imaging and this renewed imaging; this was the first imaging identifying a lesion.

§ Steroid treatment for 2 days.

On-line Table 4: Findings on CT and/or MR images from first work-up after onset of symptoms, according to clinical factors, in 75 patients with PCNSL

	Total Sample (<i>n</i> = 75)		No lesion (<i>n</i> ₁ = 10)		Single Lesion (<i>n</i> ₂ = 34)		Multiple Lesions (<i>n</i> ₃ = 26)		Disseminated Lesions (<i>n</i> ₄ = 5)		<i>P</i> Value*
	No.	%	No.	%	No.	%	No.	%	No.	%	
Diagnosed while alive	64	85	7	70	32	94	22	85	3	60	.06
Year of diagnosis											.59†
1989–1993	8	11	2	20	3	9	3	12	0	0	
1994–1998	33	44	4	40	17	50	8	31	4	80	
1999–2003	34	45	4	40	14	41	15	58	1	20	
Symptoms prior to CT and/or MR imaging											
Personality change	48	64	7	70	20	59	16	62	5	100	.37
Cerebellar symptoms/vertigo	25	33	2	20	11	32	9	35	3	60	.52
Headache	32	43	3	30	17	50	11	42	1	20	.53
Visual disturbance	18	24	3	30	7	21	8	31	0	0	.53
Epilepsy	10	13	1	10	6	18	3	12	0	0	.91
First biopsy, prior to death, of lesions at CT/MR imaging‡											.06
Diagnostic	50	85			30	94	18	75	2	67	
Nondiagnostic	9	15			2	6	6	25	1	33	
											.05
Open	35	59			23	72	12	50	0	0	
Stereotactic	21	36			8	25	10	42	3	100	
Endoscopic	3	5			1	3	2	8	0	0	
Prior steroid treatment	49	83			26	81	20	83	3	100	1.0
Time from 1st symptom to 1st CT and/or MR imaging (weeks): mean, median (range)	14.2; 6.0 (0–206)		24.2; 7.0 (2–151)		6.6; 4.5 (0–27)		18.8; 8.5 (0–206)		21.6; 19.0, (0–54)		.18§
Time from 1st CT and/or MR imaging to histologic diagnosis (weeks): mean, median (range)	10.0, 3.0; (0–125)		34.3, 31.5; (0–125)		5.9, 3.0; (0–45)		6.4, 5.0; (0–22)		8.0, 3.0 (1–23)		.01§

Note:—*n* indicates number of patients in total sample; *n*₁, number of patients with no lesion; *n*₂, number of patients with single lesion; *n*₃, number of patients with multiple lesions; *n*₄, number of patients with disseminated lesions.

* Fischer exact test.

† Mantel-Haenszel exact test for linear association.

‡ *n* = 59, *n*₂ = 32, *n*₃ = 24, *n*₄ = 3.

§ Kruskal-Wallis test.