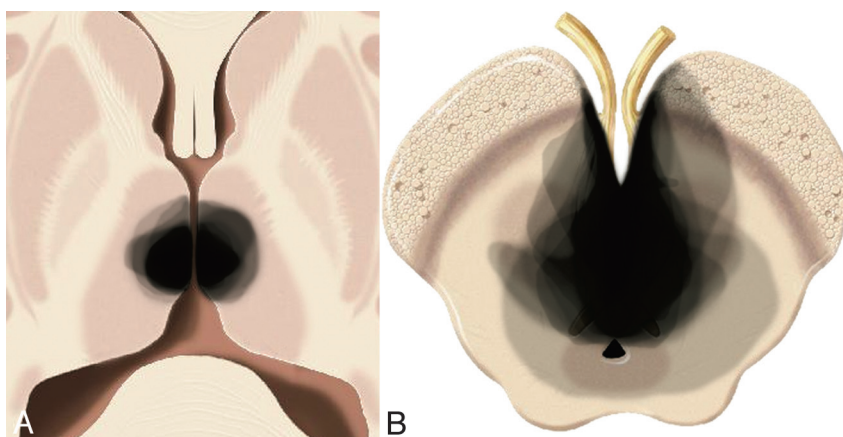
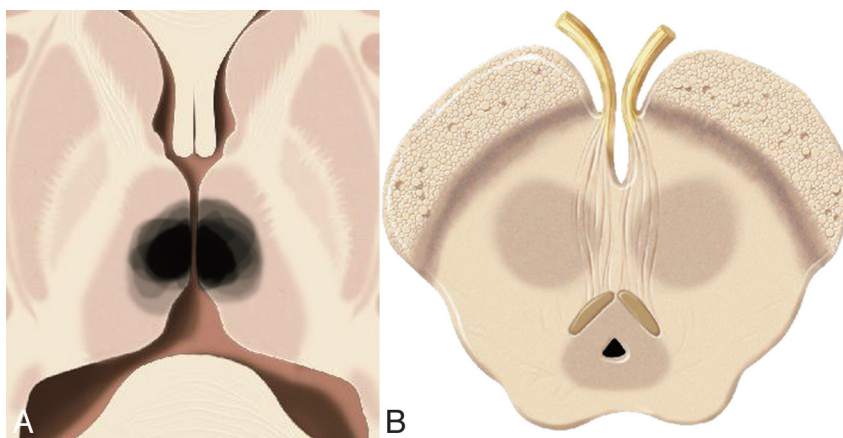


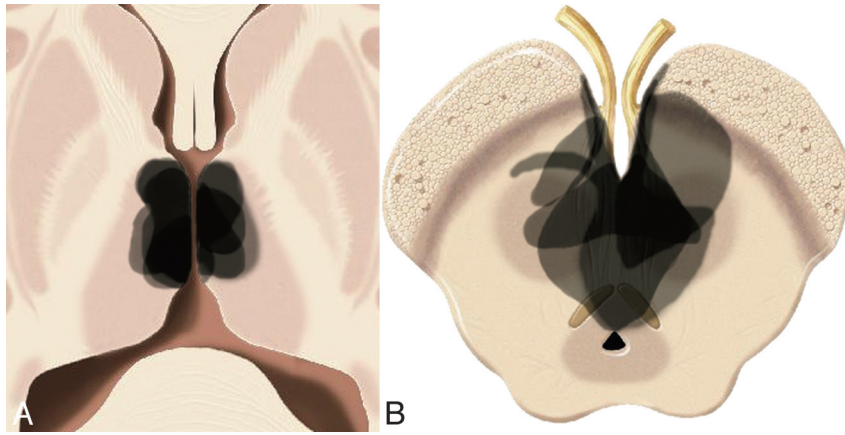
On-line Fig 1. Four main vascular territories of the thalamus: anterior (the polar or thalamotuberal artery from the PcomA), paramedian (the paramedian or thalamoperforate artery from P1), inferolateral (the thalamogeniculate artery from P2), and posterior (posterior choroidal arteries from P2).



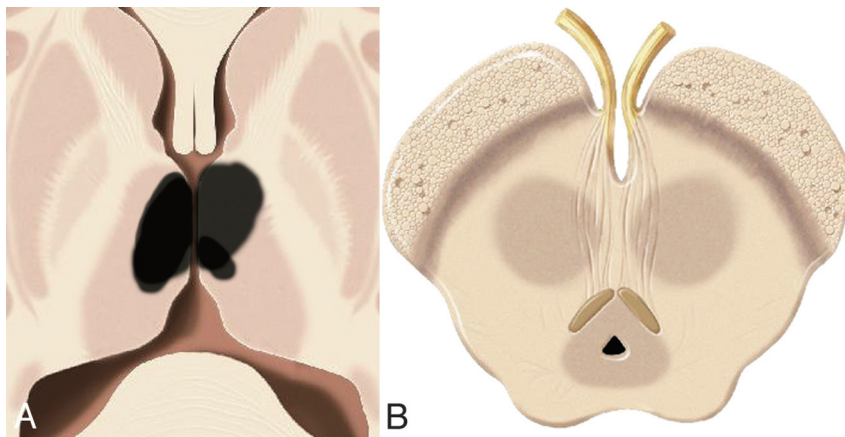
On-line Fig 2. Pattern 1 (43%). Bilateral paramedian thalamic (A) with midbrain (B) infarction. Sixteen of 37 cases are superimposed with increased opacity representing more commonly affected regions.



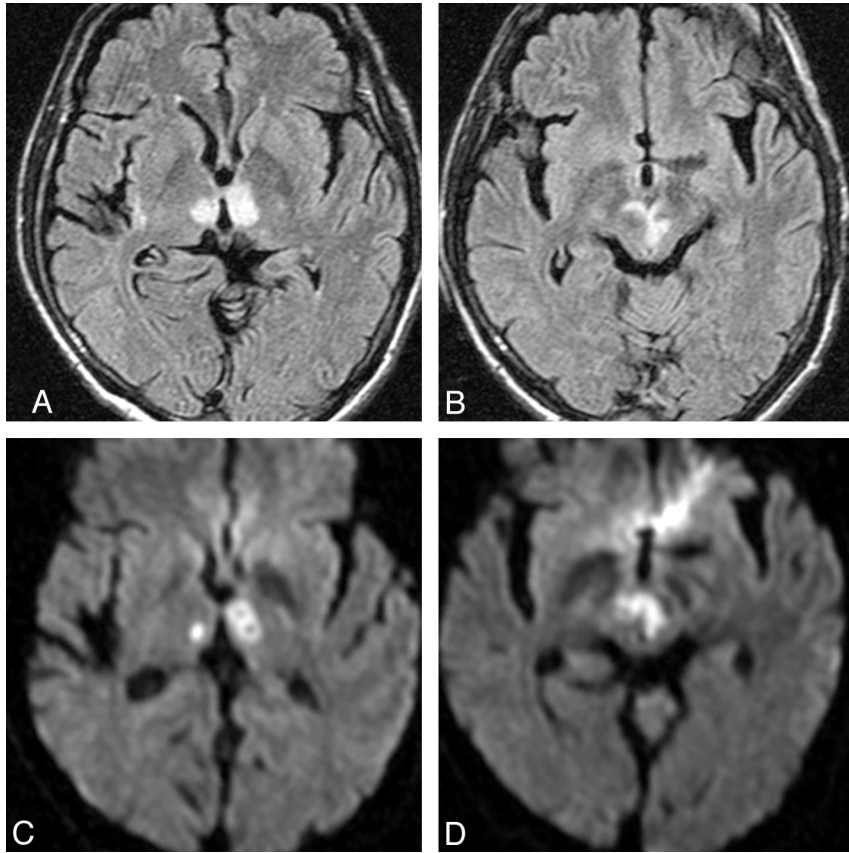
On-line Fig 3. Pattern 2 (38%). Bilateral paramedian thalamic (A) without midbrain (B) infarction. Fourteen of 37 cases are superimposed, with increased opacity representing more commonly affected regions.



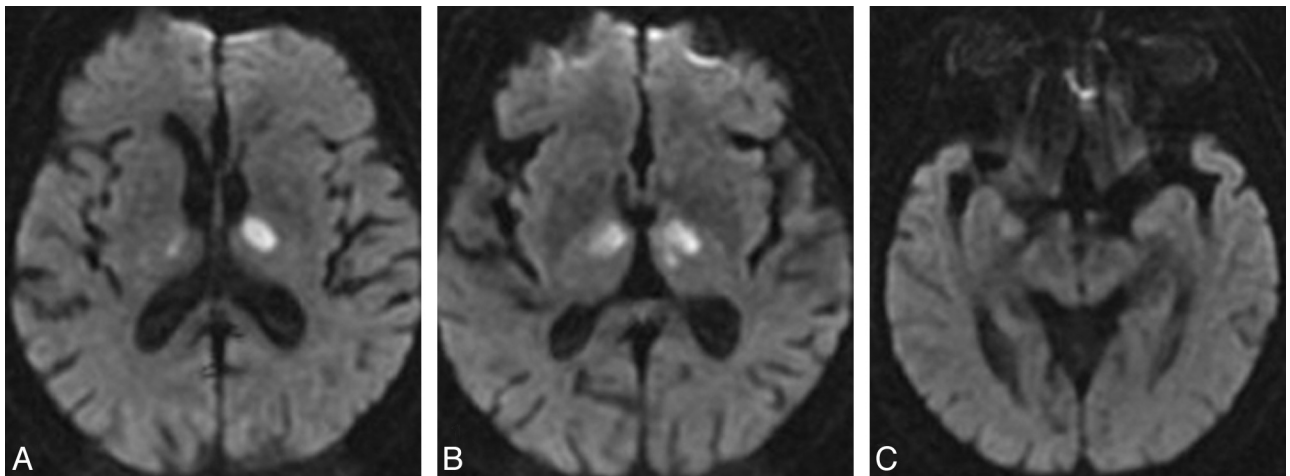
On-line Fig 4. Pattern 3 (14%). Bilateral paramedian thalamic with anterior thalamus (A) and midbrain (B) infarction. Five of 37 cases are superimposed, with increased opacity representing more commonly affected regions.



On-line Fig 5. Pattern 4 (5%). Bilateral paramedian thalamic with anterior thalamus (A) without midbrain (B) ischemia. Two of 37 cases are superimposed, with increased opacity representing more commonly affected regions.



On-line Fig 6. Case 35. Axial FLAIR (A and B) and DWI (C and D) images at the level of the thalamus (A and C) and midbrain (B and D) demonstrate bilateral paramedian thalamic with anterior left thalamic and midbrain infarction (pattern 3). Notice the hyperintense signal intensity along the pial surface of the midbrain interpeduncular fossa representing the V sign (B).



On-line Fig 7. Case 36. Axial DWI images demonstrate bilateral paramedian and anterior thalamic ischemia without midbrain involvement (pattern 4).

On-line Table 1: Summary of all cases

No.	Age (yr)/ Sex	Pattern	Paramedian Thalamus	Anterior Thalamus	Midbrain	V Sign	Additional Infarcts	Imaging
1	82/F	1	Asymmetric, L>R		Y	Y	Temporal	MR
2	52/F	1	Asymmetric, R>L		Y	Y	Cerebellar	MR, CTA, CT
3	44/F	1	Asymmetric, R>L		Y	Y	Cerebellar	MR, CT
4	45/M	1	Symmetric		Y	Y	Cerebellar, frontal	MR, CT
5	70/F	1	Asymmetric, L>R		Y	Y		MR, CT
6	39/M	1	Symmetric		Y			MR
7	72/M	1	Asymmetric, R>L		Y	Y		MR
8	63/M	1	Asymmetric, R>L		Y			MR, MRA, CTA
9	Unknown	1	Asymmetric, L>R		Y	Y		MR
10	Unknown	1	Symmetric		Y	Y		MR
11	93/F	1	Asymmetric, R>L		Y	Y		MR, MRA, CT
12	71/F	1	Asymmetric, L>R		Y	Y		MR, MRA, CTA, CT
13	44/F	1	Asymmetric, L>R		Y			MR, MRA, CTA
14	63/?	1	Asymmetric, R>L		Y			MR, CT
15	65/M	1	Asymmetric, L>R		Y	Y		MR, MRA
16	48/?	1	Symmetric		Y	Y		MR
17	49/M	2	Asymmetric, L>R					MR, MRA
18	62/M	2	Symmetric					MR, CT, angio
19	28/M	2	Asymmetric, L>R					MR, CT
20	72/F	2	Symmetric					MR, CT, CT perf
21	62/M	2	Symmetric					MR
22	66/M	2	Asymmetric, L>R				Occipital	MR, MRA
23	31/F	2	Asymmetric, L>R					MR, CTA, angio
24	47/F	2	Asymmetric, R>L					CT
25	88/F	2	Asymmetric, R>L					MR
26	77/F	2	Symmetric				Cerebellar, occipital, frontal	MR
27	61/F	2	Asymmetric, R>L					MR
28	Unknown	2	Symmetric					CT
29	Unknown	2	Symmetric					CT
30	Unknown	2	Symmetric					CT
31	65/F	3	Asymmetric, R>L	Right	Y	Y	Occipital, basal ganglia	MR, CT
32	50/M	3	Asymmetric, R>L	Bilateral	Y		Cerebellar	MR, CT
33	34/M	3	Symmetric	Bilateral	Y		Cerebellar	MR, CTA, CT
34	41/M	3	Asymmetric, L>R	Left	Y		Cerebellar	CT
35	59/M	3	Asymmetric, L>R	Left	Y	Y		MR, CTA
36	77/M	4	Asymmetric, L>R	Bilateral				MR, MRA, CTA, CT
37	82/F	4	Asymmetric, R>L	Right			Occipital, frontal	MR, CT

On-line Table 2: Clinical data

No.	Age (yr)/		Risk Factors	Etiology	Mental Status	Ocular Deficit	Other Notable Findings	Outcome at Discharge
	Sex	Pattern						
1	82/F	1	HTN, HHC, CardAbn, ValvAbn	CE	Comatose	Anisocoria	Bilateral plantar extension	Death
2	52/F	1	H/o cocaine	LAA	Stuporous	INO	L VA dissection	Partial recovery
3	44/F	1	CVA-P, PFO, ValvAbn, CardAbn, tamoxifen	CE	Obtunded	R III palsy, vertical gaze palsy	R Babinski	Partial recovery
4	45/M	1	HTN, HL, CAD, CVA-P, AF	CE	Comatose	R III palsy	LV assist device	Death
5	70/F	1	AF, TIA-P, HTN	CE	Waxing, waning	L III palsy, vertical gaze palsy	Aphasia	Partial recovery
7	72/M	1	HTN, Tob	UND	Comatose	Bilateral mydriasis	L Babinski	Death
11	93/F	1	PFO	CE	Confused	Vertical gaze palsy, anisocoria		?
12	71/F	1	HTN, TIA-P, FMD	LAA	?	L III palsy, vertical gaze palsy	R weakness, ataxia, fetal L PCA, FMD	?
13	44/F	1	CVA-P, amphetamines	UND	?	R III palsy	Basilar tip aneurysm treated with coils	?
17	49/M	2	TIA-P, CAD, DM	SVO	Confused	R miosis/ptosis, R homonymous hemianopsia	L weakness, ataxia	Unchanged
18	62/M	2	Tob, HL, CAD	ODC	Obtunded	Bilateral miosis	S/p cardiac catheterization	Complete recovery
19	28/M	2	PFO, DVT, HL	UND	Confused	Diplopia	Ataxia, slurred speech	Complete recovery
20	72/F	2	Tob, EtOH, AF	CE	Alert	R gaze preference, L homonymous hemianopsia	Dysarthria, L weakness	Complete recovery
21	62/M	2	HTN, DM, HL, CAD, Tob	SVO	Confused	None	Memory impairment	Unchanged
22	66/M	2	HTN, CHF, HL	LAA	Waxing, waning	None	Aphasia, R weakness, thrombus in aortic arch	Significant impairment
23	31/F	2	OCP, HL	ODC	Confused	None	Dysarthria, R facial weakness	Complete recovery
24	47/F	2	EtOH	UND	Confused	None	Chronic paranoid schizophrenia	Complete recovery
31	65/F	3	HTN, HL, CAD, CVA-P	UND	Obtunded	Bilateral ptosis, INO	Severe ataxia, dysphagia	Partial recovery
32	50/M	3	None	UND	Obtunded	None	Aphasia, ataxia, thalamic movement disorder	Partial recovery
33	34/M	3	HTN, HL	LAA	Obtunded	Fixed upward gaze	L VA dissection	Partial recovery
34	41/M	3	DM	LAA	Alert	Vertical gaze palsy, INO	Dysarthria, R weakness, L VA dissection	Partial recovery
35	59/M	3	?	ODC	Comatose	Diplopia, R mydriasis		Partial recovery
36	77/M	4	HTN, HL, CAD	LAA	Obtunded	?	Dysphagia, L VA stenosis	?

Note:—? Indicates unknown.

On-line Table 3: Additional infarcts

No.	Age (yr)/Sex	Pattern	Timing	Regions	Territories
1	82/F	1	Acute	Left temporal	MCA
2	52/F	1	Remote	Lacunar left cerebellar	SCA
3	44/F	1	Acute	Lacunar right cerebellar	PICA
4	45/M	1	Acute	Left cerebellar and bilateral frontal	PICA, MCA
22	66/M	2	Remote	Right occipital	PCA
26	77/F	2	Acute	Bilateral cerebellar, bilateral occipital, and right frontal	PCA, PICA, MCA
31	65/F	3	Remote	Left occipital and left basal ganglia	PCA, MCA
32	50/M	3	Acute	Left cerebellar	PICA
33	34/M	3	Acute	Left cerebellar	PICA
34	41/M	3	Acute	Bilateral cerebellar	Left PICA, right AICA
37	82/F	4	Acute	Bilateral occipital and bilateral frontal	PCA, MCA