



Figure S1 Two illustrations demonstrating the identification of vascular perfusion in meningeoma through t-ASL. (A-C) 32-year-old woman, headache for 1 month, with meningeoma closed to the superior sagittal sinus supplied by left ECA. (A) Axial CET1 showed the mass was heterogenous enhanced. (B) Axial t-ASL of the left ICA did not exhibit any perfusion in the tumor region. (C) On the left ECA show slightly hyper-perfusion (76.00%) in 90.58% region of the whole meningeoma. (D-F) A 64-year-old patient with meningeoma in the right occipital region supplied by both right ICA and basilar artery. (D) The signal intensity of the mass was hypointense, accompanied by peripheral edema and right ventricular compression. (E) Axial t-ASL of right ICA show hyper-perfusion (176.47%) in 64.61% region of the whole meningeoma. (F) t-ASL of BA show hyper-perfusion (128.57%) in 40.77% region of the whole meningeoma. CET1, contrast-enhanced T1WI; T1WI, T1-weighted images; L, left; R, right; ICA, internal carotid artery; ECA, external carotid artery; t-ASL, territorial arterial spin labelling; BA, basilar artery.

Table S1 GCS and KPS

Parameters	Score	Description
GCS		
Eye opening (E)	4	Spontaneous
	3	To speech
	2	To pressure
	1	None
Verbal response (V)	5	Orientated
	4	Confused
	3	Words
	2	Sounds
	1	None
Best motor response (M)	6	Obedying commands
	5	Localizing
	4	Normal flexion (withdrawal)
	3	Abnormal flexion
	2	Extension
	1	None
GCS		
	100	Normal: no complaints, no evidence of disease
	90	Able to carry on normal activity; minor symptoms
	80	Normal activity with effort; some symptoms
	70	Cares for self; unable to carry on normal activity
	60	Requires occasional assistance cares for most needs
	50	Requires considerable assistance;
	40	Disabled; requires special care and assistance
	30	Severely disabled; hospitalized, death not imminent
	20	Very sick; active supportive care needed
	10	Moribund; fatal processes are progressing rapidly
	0	Dead

GCS, evaluating the level of activity and requirements of patients after surgery for meningioma, could be communicated as three numbers (E, V, M) and added together. KPS, evaluating the status of prognosis before patients discharged, assign scores to patients on a scale of 0-100. KPS, Karnofsky Performance Score; GCS, Glasgow Coma Score.

Table S2 Agreement for classification of feeding arteries of meningiomas by t-ASL

Parameters	ICA	ECA	ICA co-supplied group	Non-ICA co-supplied group
Radiologist 1	6	10	11	6
Radiologist 2	7	10	10	6
Consensus	7	10	10	6

Agreement of the two radiologists: $\kappa=0.959^*$. *, indicates an excellent κ value. The criteria of kappa value: $\kappa<0.20$, poor; $\kappa=0.21-0.40$, fair; $\kappa=0.41-0.60$, moderate; $\kappa=0.61-0.80$, good; $\kappa=0.81-0.90$, very good; and $\kappa>0.90$, excellent agreement. t-ASL, territorial arterial spin labelling; ICA, internal carotid artery; ECA, external carotid artery.

Table S3 Multigroup comparison among four groups of meningiomas

Parameter	Group Comparison	T value	P value	Adjusted P value
Pre-operative GCS score	ICA vs. ECA	3.638	0.002	0.058
	ICA vs. ICA Co-supplied Group	2.248	0.040	0.961
	ICA vs. non-ICA Co-supplied Group	3.265	0.008	0.181
	ECA vs. ICA Co-supplied Group	-0.709	0.487	>0.99
	ECA vs. non-ICA Co-supplied Group	0.000	>0.99	>0.99
	ICA Co-supplied vs. non-ICA Co-supplied Group	0.601	0.558	>0.99
Pre-operative KPS score	ICA vs. ECA	5.557	<0.001	0.001
	ICA vs. ICA Co-supplied Group	2.614	0.020	0.469
	ICA vs. non-ICA Co-supplied Group	4.386	0.001	0.026
	ECA vs. ICA Co-supplied Group	-0.696	0.496	>0.99
	ECA vs. non-ICA Co-supplied Group	-0.549	0.591	>0.99
	ICA Co-supplied vs. non-ICA Co-supplied Group	0.367	0.719	>0.99
Post-operative GCS score	ICA vs. ECA	3.232	0.006	0.134
	ICA vs. ICA Co-supplied Group	1.722	0.106	>0.99
	ICA vs. non-ICA Co-supplied Group	2.780	0.018	0.430
	ECA vs. ICA Co-supplied Group	-0.805	0.431	>0.99
	ECA vs. non-ICA Co-supplied Group	0.250	0.806	>0.99
	ICA Co-supplied vs. non-ICA Co-supplied Group	0.786	0.445	>0.99
Three-year post-operative KPS score	ICA vs. ECA	5.694	<0.001	0.001
	ICA vs. ICA Co-supplied Group	1.802	0.092	>0.99
	ICA vs. non-ICA Co-supplied Group	3.784	0.003	0.073
	ECA vs. ICA Co-supplied Group	-1.000	0.331	>0.99
	ECA vs. non-ICA Co-supplied Group	-1.703	0.111	>0.99
	ICA Co-supplied vs. non-ICA Co-supplied Group	0.367	0.719	>0.99

KPS, Karnofsky Performance Score; GCS, Glasgow Coma Score; ICA, internal carotid artery; ECA, external carotid artery.