

Table S1. Cardiac myxomas metastasizing to the brain reported in literature

Study year	Country	Total number of patients	Age (yr)	Sex	Family Hx (Carney complex, other, etc.)	Location of cardiac myxoma & size (if known)	Cardiac myxoma histopathology	Clinical/admission presentation	Method of detection (CT/MRI, other)	Location of brain lesions	Brain lesion histopathology	Interval; primary resection to recurrence (mo)	Other sites of metastasis	Surgery for brain lesions	Radio-therapy	Chemo-therapy	Other interventions	Outcome follow-up (mo)
Steinmetz et al. [1], 1973	USA	1	48	F	N/A	Left atrium, from superior fossa ovals (6.5 x 2 x 1 cm)	Round and polygonal cells with abundant cytoplasm and indistinct margins. No mitotic activity was seen.	Weakness of the left arm of 6 months duration.	Brain scan: uptake of isotope in right cerebral hemisphere, with labelling of small area in right superior parietal lobe	Right parietal lobe, left lateral cerebellum, right superior frontal gyrus	Post-mortem pathology: Meningeal vessels contained myxomatous cells and eosinophilic myxoid stroma like those seen in the heart; tumor cells occluded the lumen of numerous vessels; vessels occluded with tumor were found mostly in the sub-arachnoid space.	-2 (primary NOT resection)	No	No	No	N/A	DOD2	
Rankin and Desousa [2], 1978	USA	1	44	F	N/A	Left atrial myxoma (6 x 3 x 2 cm)	N/A	3 months with severe left-sided headache, vomiting, & episode of unexplained unconsciousness.	CT: mass deep within left temporal area	Left lateral ventricle, choroid plexus	Large, almost sinusoidal blood vessels; sleeves of myxomatous tissue with occasional connective tissue support; nuclei were uniformly small and without mitoses.	96 mo	Multiple bone (both humeri, pelvis, skull proximal femora, left scapula, left tibia)	Yes	No	No	N/A	Died 6 yr later
Frank et al. [4], 1979	USA	1	49	F	N/A	Atrial myxoma attached to superior rim of foramen ovale	Cords and nests of cells set in a pale, delicate stroma that was faintly positive with periodic acid-Schiff staining; conspicuous nuclear pleomorphisms; several mitotic figures.	6-month history of progressive deficits in memory, concentration; vertigo, unsteady gait.	CT: multiple well-circumscribed high-density contrast-enhancing lesions in posterior regions of both cerebral hemispheres	Right posterior parietal, left occipital regions	"Myxoid" tissue containing nests of cells with pleomorphic nuclei and variable amounts of cytoplasm.	-1 (primary NOT resection); 3 mo after resection	Right cerebral hemisphere	Yes	No	No	N/A	DOD6
Budzilovich et al. [5], 1979	USA	1	52	F	N/A	Cardiac myxoma	N/A	N/A	CT: mass; myxoid invasion of neural tissue	Cerebrum (parietal lobe), dura, cerebellum	Myxoid invasion of neural tissue.	0; Primary NOT resection (post-mortem)	No	No	No	N/A	DOD0; Died on arrival	
Markel et al. [6], 1986	USA	1	18	F	N/A	Left atrial myxoma; mitral valve	N/A	N/A	N/A	Brain	N/A	30	Bone (humerus)	No	No	No	N/A	AWD39
Kadota et al. [7], 1987	Japan	1	44	M	N/A	Atrial myxoma	N/A	Sudden dysarthria & left hemiparesis.	CT: infarct/ring-enhancing mass	Cerebrum (left fronto-parietal region)	Much cellularity was revealed and nuclei were large with mitoses.	12	Skin	Yes	No	No	N/A	NK
Bazin et al. [8], 1987	France	1	56	F	N/A	Left atrial myxoma	N/A	N/A	CT: multiple high density enhancing lesions	Cerebrum, cerebellum	Myxomatous features.	48	No	No	No	N/A	NK	
de Moraes et al. [9], 1988	Brazil	1	73	M	N/A	Left atrial myxoma	Gland-like structures; epithelial-like nature was supported by TEM and IPX studies, which showed positivity for carcinoembryonic antigen and H blood substance.	Myocardial infarct & coronary emboli.	N/A	brain	N/A	0	Kidney, pancreas, stomach	No	No	No	N/A	DOD0
Jungreis et al. [10], 1989	USA	1	34	M	N/A	Left atrial myxoma	N/A	N/A	CT: expansion of temporal bone with scattered calcifications within tumor	Skull base (right temporal bone) tumor	N/A	-60	Distal branch of middle cerebral artery	Yes	No	No	N/A	NK
Rupp et al. [11], 1989	Hong Kong	1	54	M	N/A	Left atrial myxoma	Typical appearance of an atrial myxoma, with no sarcomatous elements present.	Blurred vision (right homonymous hemianopsia, impaired visual acuity).	CT: left hyperdense space-occupying lesion in occipital region	left occipital region	Myxoma tissues, admixed with recent and old hemorrhages, hemosiderin deposits, and fibrosis. Tumor tissue consisted of islands of stellate and polygonal cells with scant eosinophilic cytoplasm.	4 mo; 6 mo; 12 mo	No	No	No	N/A	AWD18	

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Table S1. Continued

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Kotani et al. [13], 1991	Japan	1	48	M	N/A	Left atrial myxoma, near the appendage	Typical benign myxoma.	N/A	N/A	Intracranial tumor	N/A	12	skin (3 mo), soft tissue, aorta (4 mo), leg (3 mo)	Yes	No	No	N/A	DOD53
Hufmann et al. [14], 1992	Germany	12	39	F	N/A	Left atrial myxoma	N/A	Parinaud syndrome due to mesencephalic mass.	CT and MRI: lacunar infarct in left thalamus; suspected midbrain metastasis; slight ventricular enlargement; unspecific white matter lesions.	Midbrain	N/A	N/A	N/A	No	No	No	N/A	AWD36
Todo et al. [15], 1992	Japan	1	32	F	N/A	Cardiac myxoma	N/A	N/A	CT: heterogeneous density and partly cystic mass	cerebrum (right temporal lobe)	Sarcoma with a myxomatous change.	10	Jejunum	Yes	Yes (total 60 Gy)	No	N/A	DOD10
Chozick et al. [16], 1992	USA	1	61	F	N/A	Left atrial myxoma	Poorly cellular neoplasm containing numerous small blood vessels surrounded by cuffs of spindle cells, in a loose myxoid matrix, with pigment filled histiocytes.	Fever, fatigue, dyspnea on exertion.	CT: non-enhancing, hyperdense lesion in the right frontal lobe with surrounding edema (1983) CT and MRI: an enhancing mass lesion in the right frontal lobe (1990)	cerebrum (right frontal lobe)	Neoplastic astrocytic proliferation with mitoses, vascular proliferation, and hemorrhage consistent with a malignant astrocytoma, Grade 2/3 (1990).	8mo; 72mo	No	Yes	No (1983); Yes (1990)	No	Steroids (1990)	NED?; discharged to nursing home after several months in rehab for left hemiparesis
Kanda et al. [17], 1993	Japan	1	70	M	N/A	Left atrial myxoma (50 x 40 x 40 mm)	Yellowish-red, elastic-hard, polypoid mass; tumor cells were spindle-shaped or stellate and contained vascular structures.	Left hemiparesis.	CT: two masses in left & right parietal lobes	Cerebrum (left and right parietal lobe)	Polygonal structures including round or spindle cells surrounded by a mucoid matrix.	-7 (primary NOT resection)	No	Yes	No	No	N/A	NED9
Chen et al. [18], 1993	China	1	68	F	N/A	Left atrial myxoma	N/A	Headache, visual disturbances.	N/A	Left occipital lobe	Presence of myxoma invasion of the vascular wall with aneurysmal formation and organized hematoma.	12	N/A	Yes	No	No	N/A	AWD24
Samaratunga et al. [19], 1994	Australia	1	60	F	N/A	Left atrial myxoma at septum (50x45x20 mm)	Spindled cells in a myxoid matrix that contains some fibrin; polygonal and stellate cells that formed small, solid nests and cords.	15-month history of Jacksonian seizures.	CT: enhancing subcortical lesion high in left anterior parietal lobe	Cerebrum (anterior part of parietal lobe)	Spindled and polygonal cells arranged singly and in groups in a myxoid matrix; some groups of tumor cells form vascular channels.	-7, primary NOT resection	No	Yes	No	No	N/A	NED21
Scarpelli et al. [20], 1997	Italy	1	64	M	N/A	Cardiac myxoma	N/A	N/A	N/A	Cerebrum (right parieto-occipital)	Metastatic atrial myxoma: glandular variant.	144	No	Yes	No	No	N/A	NK
Bennet et al. [21], 1998	Switzerland	1	31	N/A	N/A	Left atrial myxoma originating from interatrial septum (4 x 6 x 4 cm)	Macroscopically polypoid, multilobulated, and friable; tumor included a large amount of spindle and polygonal cells with polymorphic and hyperchromatic nuclei and demonstrated a high mitotic rate.	Fever, exertional dyspnea.	CT: multiple frontal & occipital bilateral metastases	Cerebrum (bilateral frontal, occipital regions)	N/A	2	Scapula, gastrocnemius, right lung	No	Yes (5,000 Gy)	Yes (5 courses of chemotherapy with doxorubicin and ifosfamide)	N/A	NED120
Hou et al. [22], 2001	Taiwan	1	37	F	N/A	Left atrial myxoma	Myxoid sarcoma.	Left ankle tumor	CT: brain tumor in left posterior frontal lobe	Posterior frontal lobe	N/A	10	Ankle, neck, left forearm, chest wall	No	No	No	N/A	DOD12
Ackel et al. [23], 2004	Turkey	1	58	F	N/A	Left atrial myxoma (prolapsing through mitral valve into LV during diastole; 3.5 x 6 cm)	N/A	Syncope, episodes of palpitation, cough.	CT: low-density areas in left frontal and parietal regions	Left frontal & parietal regions	N/A	0	No	No	No	No	Physical therapy	NK

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Hrudayaraj et al. [24], 2004	UK	1	50	F	N/A	Left atrial myxoma	Vascularised myxoid neoplasm without mitotic activity or significant pleomorphism.	1 month history of transient left arm weakness.	MRI: strongly enhancing lobulated 4 cm soft tissue mass in the right parietal region suggestive of a meningioma	Right parietal region	Vascular tumour with fibroblastic areas, some ectatic vascular channels and evidence of haemorrhage with very mild cytological pleomorphism without mitoses.	-1 (primary NOT resection)	No	Yes	No	No	Yes (dexamethasone)	NED24	
Altundag et al. [25], 2005	Turkey	1	41	F	N/A	Left atrial myxoma	Histopathologic diagnosis was reported as "benign myxoma."	Palpitation, exertional dyspnea	MRI: multiple hemorrhagic lesions (largest one with 3cm diameter) located in both cerebrum and cerebellum. Right parietal lesion was excised to confirm the diagnosis.	Multiple lesions in cerebrum, cerebellum	Pathologic diagnosis was again reported as benign myxoma consistent with emboli.	15	No	Yes	No	N/A	N/A	AWD63 (cranial lesions did not change in size or number)	
Rodriguez et al. [26], 2006	UK	1	65	F	N/A	Left atrial myxoma	N/A	Local focal seizures, hemiparesis.	CT: two lesions in the right parietal lobe (1989) CT: lesions bilaterally on occipital lobes (2004)	Right parietal lobe	The macroscopic appearance revealed a well-circumscribed mass measuring 35 x 20 x 20 mm, the centre of which largely contained clot; histologically, the lesion showed features consistent with atrial myxoma as seen in the previous specimens	12 mo; 72 mo	No	Yes	No	N/A	N/A	AWD at the time of writing	
Rodriguez et al. [27], 2006	USA	1	41	F	N/A	Small atrial septal lesion diagnosed as atrial myxoma	N/A	12-month history of transient left-sided paraesthesia and a 5-month history of recurrent visual disturbances.	MRI: multiple areas of decreased T2 signal within the frontal lobes bilaterally and the left parietal cortex (2001) MRI: 3cm lesion in lateral aspect of anterior right frontal lobe (2003)	Frontal & parietal lobe	Hypocellular proliferation of bland stellate to spindle cells lacking pleomorphism, hyperchromatism and mitotic activity immersed in a myxoid background. Stellate cells stained with calretinin and vimentin by immunohistochemistry; power photomicrograph from the centre of the parietal specimen showed a paucicellular proliferation of stellate and spindle cells in a mucoid background typical of myxoma.	-21 (primary NOT resection); atrial myxoma missed multiple times)	Bone (right pelvis, femur)	Yes	No	No	Prednisone for AWD23	(wrong diagnosis); discontinued after 6 mo for poor tolerance	
Mojiyali et al. [28], 2007	India	1	35	M	N/A	Left atrial myxoma	Immunohistochemistry of both the primary cardiac tumour and metastatic tumour demonstrated identical patterns with strong cyokeratin positivity in the glandular epithelium surrounded by stromal component highlighted by vimentin.	4-yr history of left facio-brachial focal motor seizures unresponsive to anti-epileptic drugs.	MRI: multiple lesions of heterogeneous intensity, partly solid and cystic situated in the right fronto-parietal, left temporal and occipital lobes Repeat CT: two more lesions, one in the right parietal lobe just posterior to the previous large posterior frontal mass, as well as another in the left frontal lobe	Right fronto-parietal, left temporal, and occipital lobes; right parietal, left frontal lobe	Prominent glandular differentiation, identical in morphology to the primary cardiac lesion of a glandular variant of atrial myxoma.	48 (primary NOT resection)	No	Yes	No	Yes (focal radiotherapy to brain, 25 Gy)	N/A	N/A	AWD6
Suzuki et al. [29], 2008	Japan	1	68	M	N/A	Left atrial myxoma	N/A	Cerebral infarction.	CT: multiple high-density areas	N/A	N/A	6	No	Yes	Yes (40.8 Gy whole brain radiation)	No	N/A	Alive	
Kumar et al. [30], 2011	India	1	30	F	N/A	Left atrial myxoma	N/A	Generalized tonic-clonic convulsions, transient loss of memory.	CT: multiple hemorrhages in different regions MRI: hypointense lesions	Brain	Histopathology was consistent with myxomatous lesions.	24 mo	No	Yes	No	No	long-term anti-ticoulsants	NK	

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Kim et al. [31], 2011	South Korea	1	49	F	N/A	Left atrial myxoma	Microscopic findings showed spindle and stellate cells with eosinophilic cytoplasm without significant cytologic atypia.	Sudden onset of left side weakness.	MRI: multifocal areas of high signal intensity (S1) in bilateral cerebral hemispheres, cerebellar hemispheres, pons, and right thalamus.	Cerebrum (bilateral cerebral hemispheres)	N/A	12	No	No	Whole brain radiation treatment 35 Gy/24 fractions for 3 weeks and follow-up MRI revealed slight improvement of the multiple enhancing cerebral lesions	No	N/A	NK	
Lee et al. [32], 2011	Taiwan	1	33	F	N/A	Multiple tumors in the left atrium, measuring 2.9 x 3.0 cm, 2.0 x 3.0 cm, and 4.3 x 2.3 cm, respectively; malignant cardiac myxoma (myxosarcoma) diagnosis.	Spindle cells set within a myxoid ground substance with transition to pleomorphic and hyperchromatic cells arranged in solid sheets. Immunohistochemical studies showed positive staining for smooth muscle actin and HHF35, and focally for desmin. Stainings for myoglobin, myogenin, myoD1, S100, CD31, CD34, and calretinin were negative.	2-mo history of intermittent productive cough, palpitation and dyspnea.	CT: multiple mass-like lesions in the left frontoparietal, left occipital and right high parietal regions. MRI and MRA: multiple intracranial tumors and aneurysms.	Left frontoparietal, left occipital, right high parietal regions	Tumor showed brain tissues infiltrated with neoplastic spindle cells that were similar to those of the cardiac tumor; the immunohistochemical staining results were also the same.	12	No	Yes	radiotherapy (4,500 cGy/25 fractions)	Yes	N/A	N/A	DOD 1w after admission due to brainstem failure
Badriyah et al. [33], 2012	Malaysia	1	15	F	N/A	Left atrial myxoma	N/A	Progressive right-sided headache, nausea, vomiting.	CT: multiple enhancing solid-cystic lesions with significant perilesional edema	Cerebrum (right parietal and occipital lobes)	Circumscribed fragments of fibrocollagenous tissue with extensive area of hemorrhage. Under light microscopy, myxomatous component is seen. It is characteristically composed of stellate or fusiform shaped cells surrounded by loose stroma with abundant basophil cells infiltration. Tying together the patient's background history of atrial myxoma, the lesion represents metastasis from its cardiac origin.	36	No	Yes	No	No	N/A	N/A	NED/2

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Raza et al. [34], 2012	Pakistan	1	47	F	N/A	Left atrial myxoma attached to intra-atrial septum (6 x 3 x 4 cm)	Histopathology report revealed the mass to be a benign atrial myxoma.	New onset chest pain, dyspnea, on-and-off low grade fever for last 4 weeks.	MR: multiple hyper-intense lesions with surrounding edema in the cerebellar and cerebral hemispheres bilaterally (Feb 2011) Repeat MRI: growing contrast-enhancing, space-occupying left occipital haemorrhagic lesion, measuring 5.4 x 2.3cm and causing a midline shift (April 2011) Repeat MRI: multiple cerebral and cerebellar haemorrhagic lesions, with the latter having grown considerably since previous imaging (July 2011)	Cerebrum, cerebellum	No myxomatous or malignant features were seen on histology.	4; 6; 10; 13	No	No	No	Phenytoin for seizures (initial conservative management); steroids, mannitol (short course), oral tranexamic acid (600mg, 4x/3days)	AMD at the time of writing	
Radoi et al. [35], 2012	Romania	1	45	M	N/A	Left atrial myxoma	N/A	Headache, nausea, gait disturbances and weakness of the left extremities. Two episodes of generalized seizures documented in previous month.	MR: three intracranial tumours, with calcification, located in both parietal and left frontal lobes	Bilateral parietal lobes, left frontal lobe	Details of the stellate and spindle-shaped cells embedded in a loose eosinophilic matrix are obvious	18	No	Yes	N/A	N/A	AMD12	
Kierdaszuk et al. [36], 2014	Poland	1	41	F	N/A	Left atrial myxoma, floating and fragmented	N/A	Sudden onset of the left limb weakness which lasted for a few minutes.	CT: seven heterogeneous haemorrhagic lesions surrounded by edema. The lesions were spread through both hemispheres - one in the right frontal lobe, one in the right parietal lobe, four in the left parietal lobe and one in the left occipital lobe MRI: confirmed the presence of multiple lesions which were surrounded by edema and contained hemosiderin deposits	Parietal lobes, right frontal lobe, left occipital lobe	Haemorrhagic areas with calcifications; chronic inflammation and hemosiderin-laden macrophages, and glial and mesodermal sequestration with vessel and collagen fiber calcifications.	-6 (primary NOT resection)	Yes	No	N/A	N/A	AMD19	
Côté et al. [37], 2015	Canada	1	46	F	N/A	Inter-atrial septal cardiac myxoma	Benign features such as a stellate or pseudo vascular pattern; a brown, lobed, well circumscribed structure.	3-month history of seizures manifesting as paresis in left lower abdomen and upper thigh.	CT: three hypodense lesions surrounded by vasogenic oedema, interpreted as hemorrhagic MRI: confirmed the presence of three hypointense lesions on T1 and gradient echo sequences	Right central sulcus, right inferior frontal gyrus, left precentral gyrus	Paucicellular, markedly myxoid lesion; spindle cells dispersed randomly and in perivascular and pseudo-vascular patterns on a myxoid background. Also present were hemosiderin-laden macrophages, Gamma-Dandy fibres, and multinucleated giant cells.	24mo	Yes	No	No	Anticonvulsant therapy 1 year post-op (discontinued with no recurrent seizures)	AMD12	
Brijniji et al. [38], 2015	USA	47	41	F	N/A	Cardiac myxoma	N/A	Visual changes.	CT: intraparenchymal hemorrhagic with surrounding edema MRI: hemorrhage with surrounding edema and mass effect and a thin enhancing rim DSA: small fusiform aneurysm at a distal left middle cerebral artery branch	Right frontal lobe	Stellate and polygonal tumor cells surrounded by loose stroma with myxoid appearance.	N/A	Yes	N/A	N/A	N/A	NK	

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	USA		34	F	N/A	Left atrial myxoma	N/A	Acute thalamic infarction, headache.	Pre- and post-contrast T1: two enhancing lesions in the posteromedial left temporal and posterior left occipital lobes Gradient echo: hypo-intensity with 'blooming' in the two lesions consistent with blood products FLAIR: moderate edema signal surrounding the left posterior temporal lesion DSA: two oncotic fusiform aneurysms	Left temporal and posterior left occipital lobes	N/A	24	N/A	N/A	N/A	N/A	N/A	NK
Rose et al. [39], 2016	UK	2	44	M	N/A	Left atrial myxoma (10.5 x 3.4 cm)	Myxomatous matrix containing stellate or myxoma cells.	Slurred speech, headache associated with blurred vision, nausea, and vomiting.	CT and MR: multiple lesions with mixed irregularities and distortion of the fourth ventricle. There was no evidence of hydrocephalus. MR angiography: confirmed metastatic aneurysmal deposits with tumor emboli.	Cerebrum, cerebellum	N/A	5	No	No	Yes (whole brain radio-therapy, 30Gy in 15 fractions)	No	Dexamethasone 4 mg 2x/daily	DOD17
	UK		52	F	N/A	Left atrial myxoma	N/A	Breathlessness	CT and MRI: multiple brain lesions	Cerebrum, cerebellum	N/A	0	No	No	Yes (fosfamide and doxorubicin)	N/A	N/A	AWD6
Castano-Leon et al. [40], 2016	Spain	1	40	F	N/A	Left atrial myxoma (6.2 x 2.4 cm)	Tumor cells arranged in an abundant mucoid stroma with a loose/cancellular pattern, minimal atypia; intense positive expression of calretinin.	Vomiting and severe headache, palpitations, dyspnea.	MRI: four heterogeneous hemorrhagic supratentorial lesions with contrast enhancement and no mass effect	Cerebrum (left pre-rolandic frontal gyrus, left superior parietal lobe, left occipital lobe); Cerebellum; Brainstem	Intrapancrechymal myxoma implants with the same benign histologic characteristics as the cardiac tumor; tumor cells were fusiform and dispersed in a mucin-rich myxoid matrix that stained strongly with alcian blue; calretinin expression in tumor cells was strong with a cytoplasmic and nuclear pattern.	4	No	Yes	Holocranial fraction radiotherapy (5 x 150 cGy) receiving a total dose of 35 Gy	No	N/A	NED18
Roque et al. [41], 2019	USA	1	48	F	Whole exome sequencing of her tumor revealed multiple mutations in PRKAR1A not found in her germline DNA, suggesting that the myxoma in this patient was sporadic.	Left atrial myxoma (3.5 x 2.5 x 2.5 cm)	Complex papillary structure comprising grape-like clusters organized into an arborizing network; myxoid matrix was interspersed with clusters and linear strings of cells comprising abortive endowell-like structures.	Daily headaches	MRI: small, scattered fluid-attenuated inversion recovery (FLAIR) hyperintensities and areas of susceptibility weighted imaging (SWI) signal intensity in her bilateral occipital lobes, right frontal lobe, and left parietal lobe.	Bilateral parietal, frontal occipital lobes	Clusters of rounded hyperchromatic cells displaying a lack of cohesion, forming small collections of cells separating from the surface of the myxoma; stained positively for SMA and CD31.	12	No	No	Yes (whole brain radiation with hippocampal sparing, 37.750 cGy in 15 fractions)	No	6 mo of methotrexate for prevention of cognitive dysfunction post-radio-therapy	AWD 18 (lesions stable on MRI)

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Wan et al. [42], 2019	China	1	39	F	N/A	Left atrial myxoma	N/A	1 mo history of progressive, headaches with nausea, vomiting	CT: heterogeneous hemorrhagic lesions surrounded by edema, largest on left frontal lobe MRI, MRA, SWI: confirmed multiple brain metastases of myxoma & cerebral aneurysm formation from myxoma involving bilateral ACA, MCA, right PCA, and SCA	Multiple cerebral metastases	Hematoxylin and eosin staining of both tissues disclosed typical atrial myxoma cells embedded in a loose myxoid matrix.	7	No	No	No	Anti-platelet treatment post-op	AMD18 (brain lesions became smaller, but edema around them became larger than before and the metastatic aneurysms rarely changed)	
Ghoadsara et al. [43], 2020	India	1	63	M	N/A	Left atrial myxoma	N/A	Moderate left-sided hemi-cranial headache for 1 mo, with associated vomiting, giddiness, gait imbalance.	MRI: left parieto-occipital multi-cystic hemorrhagic SOL with the potential of being a hemorrhagic metastasis or a cavernoma Positron emission tomography: mildly hypermetabolic enhancing lesion in the left parieto-occipital area	Left parieto-occipital region	Hypocellular tumor with scattered bland spindle cells in basophilic matrix.	12	No	No	N/A	N/A	AMD at the time of writing	
Rajeshwari et al. [44], 2020	India	2	56	F	N/A	Left atrial myxoma (8 mm)	N/A	Recurrent episodes of sudden-onset neurological deficits and seizures for 1 yr.	CT and MRI: a left occipital hematoma with enhancing, an acute right parietal infarct and multiple chronic infarcts involving both the cerebral hemispheres and thalami	Left occipital, right temporo-parietal, bilateral hemispheres and thalami	Thickened vessels showed the accumulation of an abundant myxoid material, highlighted by Alcian blue staining, in the tunica media with embedded stellate to spindle cells; stellate cells were immune-positive for calretinin while being immune-negative for alpha-smooth muscle actin (SMA), clinching the diagnosis of metastatic emboli from a myxoma.	-6	No	No	N/A	N/A	DOD6	
	India	17		M	Negative Fx	Left atrial myxoma	N/A	Right muscle weakness and seizures for 6 months, and headache and vomiting for 2 days.	MRI: multiple space-occupying lesions in the left fronto-temporo-occipital regions with the largest lesion in the left frontotemporal lobe	Left fronto-temporo-occipital region	Stellate to fusiform cells scattered in the abundant myxoid matrix and at places closely associated with capillaries.	18	No	Yes (10 cycles of whole brain radio-therapy planned at 30 Gy, completed 8 and re-admitted with increased ICP that was conservatively managed)	N/A	N/A	N/A (patient lost after discharge)	
Maas et al. [45], 2020	USA	1	62	M	N/A	Left atrial myxoma (4.2 x 2.4 cm)	N/A	Mild chest discomfort, left arm numbness, visual changes, and gait instability.	MRI: enlarged heterogeneously enhancing hemorrhagic masses in the right posterior occipital-parietal region with increased vasogenic edema and mild mass-effect on the posterior horn of the right lateral ventricle	posterior occipital-parietal region	N/A	12	Fingertips, lymphoma	Yes	No	No	N/A	NED48

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Table S1. Continued

Study, year	Country	Total number of patients	Age (yr)	Sex	Family Hx (Camey complex, other, etc)	Location of cardiac myxoma & size (if known)	Cardiac myxoma histopathology	Clinical/admission presentation	Method of detection (CT/MRI, other)	Location of brain lesions	Brain lesion histopathology	Interval; primary resection to recurrence (mo)	Other sites of metastasis	Surgery for brain lesions	Radio-therapy	Chemo-therapy	Other inter-ventions	Outcome follow-up (mo)
Panos et al. [46], 2020	Switzerland	1	63	M	N/A	Cardiac myxoma attached to left interatrial septum (7 x 3 cm, 2.8 x 1.2 in)	Atrial tumor was of myxoid appearance, with hemorrhagic and cystic degeneration areas. The stellate cells with round, hyperchromatic nuclei, and scant, eosinophilic cytoplasm in a myxoid matrix are typical for myxoma.	Generalized tonic-clonic seizure; dysarthria; non-fluent partial aphasia.	MRI: multiple supra- and infratentorial lesions with partial hemorrhagic transformation and gadolinium enhancement	Left parieto-occipital lesion	Stellate myxoma cells and extensive regenerative changes with inflammation and signs of hemorrhage.	9	N/A	No	Fractionated whole-brain radiotherapy (10 cycles of 3 Gy)	Levetiracetam was switched to lamotrigine (target dose 3.5 mg/kg/day), quetiapine (0.3 mg/kg/day) was added, and dexamethasone was phased out.	Docamethasone (4 mg/day)	AWD36
Aguilar et al. [47], 2021	Peru	1	69	F	N/A	Left atrial myxoma	Papillary pattern, benign histological features, and uniform expression of calretinin into the myxoma cells.	Drug-resistant epilepsy for the past four months; acute left-sided hemiparesis, distal tremor in both hands	CT: cortical and subcortical hyperdense nodules surrounded by the vasogenic edema zone in the posterior fossa and cerebral hemispheres	Frontal, occipital, cerebellar regions	Abundant lepidic cells in a myxoid stroma infiltrating brain parenchyma; tumor cells exhibit nuclear pleomorphism and mitotic figures.	10	No	No	No	No	N/A	DOD30
Wang et al. [48], 2021	China	1	66	F	N/A	Left atrial myxoma	N/A	Headache and numbness of the right hand for 2 weeks.	MRI: multiple brain lesions; cerebral tumors had variable and increased FDG uptake in general	Left parietal lobe, right occipital lobe	Degenerated mucous cells.	6	No	Yes	No	No	N/A	NK
Agely et al. [49], 2022	Saudi Arabia	1	73	M	N/A	Left atrial myxoma	N/A	Acute left-side weakness, slurred speech, gait imbalance.	CT: sellar/suprasellar mass with mild ventricular dilation	Pituitary macroadenoma	N/A	0	Lung, thyroid, adrenal glands, bone	No	No	No	N/A	DOD3
Ma et al. [50], 2023	China	1	47	F	N/A	Left atrial myxoma (27 x 13 mm)	Immunohistochemical stain showed positive expression of CD34; small, plump, spindle to ovoid tumor cells with abundant eosinophilic cytoplasm and minimal cytological atypia.	Convulsions in right hand, repeated generalized seizures (6x/month).	CT: multiple rounded lesions in left frontal & parietal areas	Cerebrum (left frontal, parietal lobes)	Under light microscopy, myxomatous component was seen composed of stellate or fusiform shaped cells surrounded by loose stroma with abundant basophil cells infiltration.	8 mo (primary NOT resection of atrial myxoma; pt denied surgery multiple times)	No	Yes	Gamma knife radiosurgery	Temozolomide 150 mg/m2 for 5 days	N/A	AWD24
Samia et al. [51], 2023	USA	1	59	M	N/A	left atrial-ventricular myxoma (5.5 x 4 x 3.7 cm)	Mass showed low cellularity and abundant extracellular matrix, papillary projections from the surface, and spindle-shaped and stellate cells without mitotic figures surrounded by a myxoid stroma.	Persistent headaches, visual changes, fatigue, word-finding difficulty	CT and MRI: left occipital lobe mass measuring 2.0 x 2.1 x 2.3 cm with surrounding subacute and chronic hemorrhage, multiple other hemorrhagic lesions in the cerebral hemispheres and cerebellum, and multiple chronic lacunar infarcts	Left occipital lobe	Myxoid regions, areas of acute, subacute, and chronic hemorrhages, spindle-shaped and stellate cells, and macrophages containing hemosiderin. Alcian blue 2.5 pH staining showed that the extracellular matrix contains abundant acid mucin and mucopolysaccharides.	2.5	No	Yes	No	No	N/A	NK

(Continued to the next page)

Table S1. Continued

Study, year	Country	Total number of patients	Age (yr)	Sex	Family Hx (Camey complex, other, etc.)	Location of cardiac myxoma & size (if known)	Cardiac myxoma histopathology	Clinical/admission presentation	Method of detection (CT/MRI, other)	Location of brain lesions	Brain lesion histopathology	Interval: primary resection to recurrence (mo)	Other sites of metastasis	Surgery for brain lesions	Radio-therapy	Chemo-therapy	Other inter-ventions	Outcome follow-up (mo)
Abdow et al. [52], 2023	USA	1	63	F	N/A	Left atrial myxoma	N/A	Acute onset of left-sided facial droop, numbness, and weakness concerning for right middle cerebral artery stroke	CT: right frontal intracranial hemorrhage (ICH) in her stroke bed, as well as small left frontal and occipital ICHs. MRI and MRA: multifocal hemorrhagic lesions in these areas concerning hemorrhagic metastatic lesions	left frontal and occipital lobes, right frontal lobe	Myxoid neoplasm, consistent with intracranial metastasis.	8	No	Yes	Stereotactic radiosurgery (not successful in reducing multifocal lesions)	No	N/A	AWD29
Our case	Canada	1	56	F	N/A	Left atrial myxoma	Scalate and polygonal tumor cells within a myxoid stroma; prominent eosinophilic cytoplasm, blurred cellular borders, and ovoid nuclei featuring open chromatin and subtle nucleoli.	Headaches, right arm weakness, blurry vision.	MRI: Popcorn-like lesions with areas of low and high intrinsic T1 signal intensity.	Medial regions of the right frontal, parietal, and occipital lobes, as well as the medial left parietal and occipital lobes	N/A	3	No	No	Whole brain radiation treatment (20 Gy/5 fraction regimen)	No	N/A	AWD48

AWD, alive with disease; DOD, died of disease; NED, no evidence of disease; NK, not known; N/A, not available
See Table S2 for detailed information on all the studies listed in Table S1.