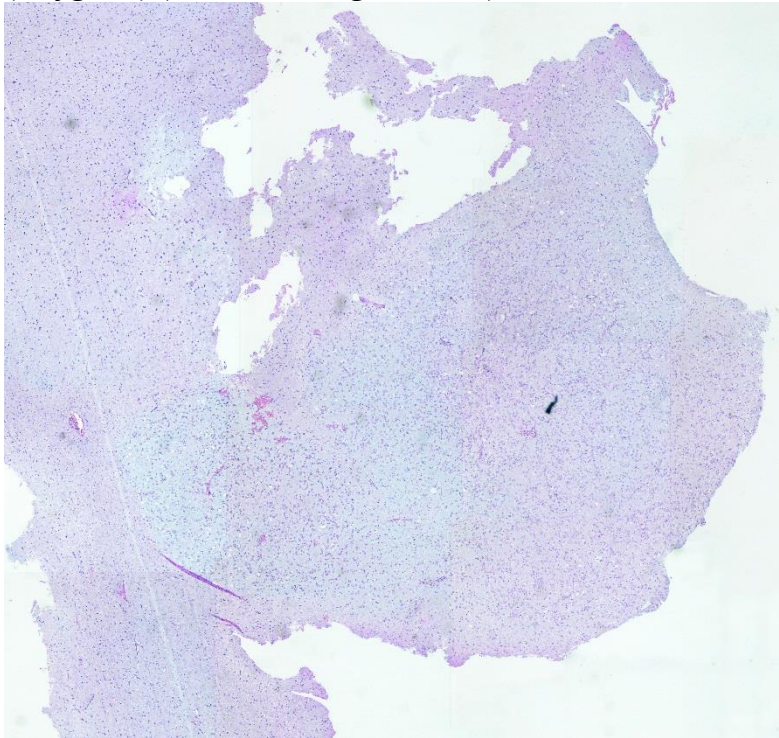


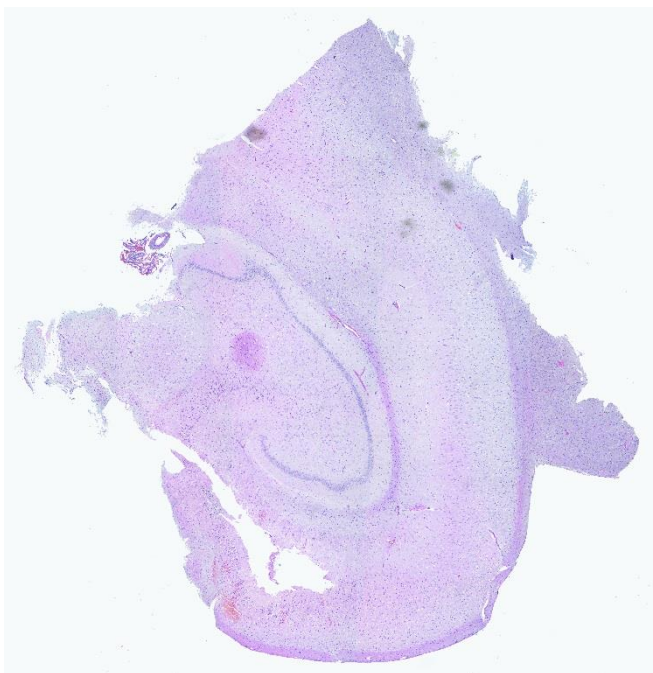
Supplementary figure 1.

Multiple nodular infiltrates of vacuolated tumour cells in the mesial temporal region (amygdala) (H&E; x10 magnification).



Supplementary figure 2.

Multiple nodular infiltrates of vacuolated tumour cells in the mesial temporal region (hippocampus) (H&E; x10 magnification).



Supplementary table 1.

Currently published cases and series of cases of MVNT.

Case number	1st author (year)	Age (year), gender	Symptoms	Location of the tumour (lateralization)	Surgery	Follow-up (months)
1	Ratilal (2007)	60, F	seizures	(L) T	T lobectomy	3
2	Huse (2013)	38, M	dizziness, loss of attention	(R) T	subtotal resection	8
3		54, F	dizziness, dysarthria, blurred vision, right numbness (one episode)	(L) T	gross total resection	72
4		38, F	seizures	(R) P	subtotal resection	16
5		35, M	episodic confusion	(R) T	subtotal resection	6
6		54, M	seizures	(R) T	T lobectomy	11
7		31, F	seizures	(L) T	subtotal resection	12
8		41, M	confusion (one episode)	(R) T	gross total resection	60
9		63, F	left hand's fingers numbness and tingling	(R) T	gross total resection	36
10		64, M	staring and mumbling (one episode)	(L) T	biopsy	N/A
11		52, F	episodic vertigo	(L) F	gross total resection	N/A
12	Bodi (2014)	34, F	seizures	(L) F	gross total resection	24
13		71, F	accidental finding	(L) T	post-mortem HV	24
14	Fukushima (2014)	37, M	seizures	(L) P	gross total resection	18
15	Nagaishi (2015)	22, F	headache	(L) F	subtotal resection	6
16	Yamaguchi (2016)	41, M	seizures	(R) T	subtotal resection	N/A
17	Monté (2017)	17, M	accidental finding	(L) O	no	19
18	Cathcart (2017)	29, M	seizures	(R) T	biopsy	N/A
19	Nunes (2017)	47, F	headache	(L) TP	no	60
20		55, M	headache	(R) P	no	27
21		28, F	seizures	(R) F	no	26
22		58, M	seizures	(R) TP	no	58
23		16, F	headache	(L) FP	no	24
24		34, F	upper extremity weakness	(L) P	no	24
25		32, F	headache	(L) P	no	30
26		41, M	headache	(L) TP	no	24
27		31, F	seizures	(L) TPO	no	36
28		15, F	psychiatric	(R) O	gross total resection	N/A
29		54, M	suspected right middle cerebral artery stroke	(L) P	no	41
30		35, M	seizures	(L) TP	no	48
31		50, F	headache	(L) TP	no	24
32		47, M	headache	(L) P	no	26

33		50, M	follow-up of skin melanoma	(R) F	no	25
34		46, F	headache	(L) P	no	30
35		32, F	follow-up of right frontal meningioma	(L) F	no	24
36		55, M	Bell palsy	(L) P	no	36
37		35, F	seizures	(L) T	no	24
38		32, F	headache	(L) P	no	24
39		28, F	headache	(L) T	no	24
40		21, F	headache	(L) F	no	24
41		48, M	follow-up of left temporal lobe glioblastoma	(R) T	no	25
42		56, M	headache	(L) F	no	27
43		46, M	expressive dysphasia (one episode)	(L) TP	no	54
44		25, M	seizure	(R) T	gross total resection	96
45		48, F	headache	(R) O	no	24
46		27, F	seizures	(L) F	no	144
47		41, F	headache	(R) F	no	25
48		51, F	headache	(R) P	no	26
49		53, M	seizures	(L) T	gross total resection	N/A
50		28, F	headache	(L) T	no	25
51		43, M	headache	(L) F	biopsy	N/A
52	Alsufayan (2017)	58, F	headache	(R) P	no	19
53		53, F	follow-up of the lesion	(L) F	no	19
54		24, M	left-sided optic neuritis	(L) O	no	2
55		48, F	transient visual disturbance	(R) F	no	3
56		24, M	concussion	(L) F	no	15
57		38, F	seizures	(L) T	no	73
58		24, F	headache	(L) F	no	4
59		42, F	headache	(R) FT	no	6
60		45, F	dry mouth, tendency to suck the inside of cheeks	(L) T	no	28
61		34, M	seizures	(R) FP	no	37
62		27, F	seizures and headache	(L) F	no	35
63		32, M	headache	(R) F	no	54
64		28, F	headache	(R) F	no	12
65		58, F	headache	(R) O	no	/
66		59, F	intermittent dysarthria, right facial twitching, right hand paraesthesia, neck tightness, right hemifacial spasm	(L) F	no	5
67		51, M	brief episodes of memory loss	(L) P	no	5
68		27, F	seizures	(R) F	no	N/A
69		28, F	loss of consciousness	(R) F	no	N/A

70		59, M	pale right optic disc	(R) O	no	13
71		48, M	headache, right ptosis, bilateral decrease of lateral gaze	(R) F	no	N/A
72		46, F	seizures	(R) P	no	93
73		54, F	right sided hemiparesis	(L) F	no	10
74		45, F	transient episodes of difficulty with speech, right visual field obscuration, right cheek tingling, impaired writing, headache and vertigo	(L) P	no	N/A
75		52, M	episodes of numbness in right shoulder	(R) P	no	13
76	Badat (2017)	31, F	headache	(R) P	no	60
77		59, F	seizures	(L) T	T lobectomy	108
78		32, F	seizures	(R) T	T lobectomy	72
79		27, F	seizures	(L) T	T lobectomy	168
80		62, M	breathing difficulties	(R) O	post-mortem HV	N/A
81		67, M	seizures	(R) TP	gross total resection	24
82		48, F	seizures	(L) T	gross total resection	24
83		6, M	seizures	(L) T	T lobectomy	17
84		54, M	seizures	(R) T	T lobectomy	10
85		41, F	seizures	(R) T	T lobectomy	N/A
86		55, M	seizures	T	T lobectomy	N/A
87	Kapucu (2017)	34, F	tingling sensation in all extremities	(R) PO	no	6
88		27, F	headache	(L) P	no	36
89	Gökçe (2017)	21, M	seizures	(R) F	no	24
90	Lobo (2018)	19, M	headache	(L) O	no	N/A
91		54, F	headache	(R) T	N/A	N/A
92		11, F	seizures	(L) T	N/A	N/A
93		19, F	seizures	(R) T	N/A	N/A
94		12, F	seizures	(R) T	N/A	N/A
95	Gonzalez-Quarante (2018)	52, M	seizures	(R) T	T lobectomy	12
96	current case	48, F	seizures	(L) T	T lobectomy	20

F: female; M: male; L: left; R: right; T: temporal; P: parietal; F: frontal; O: occipital.

Supplementary table 2.

Clinical details of currently published cases of MVNT associated with the epileptic seizures.

Case numberA2:O51	1st author (year)	Age (year), gender	Age of the index seizure (year)	Seizure semiology	Location of the tumour (lateralization)	AED therapy	PRE*	Interictal EEG	Ictal EEG (lateralization)	Major comorbidities	Neuropsychology (preoperative)	Surgery	Follow-up (months)	Outcome (Engel Epilepsy Surgery Outcome Scale)
1	Ratilal (2007)	60, F	43	1. déjà vu-> sGTC 2. myoclonic seizure (right hand)	(L) T	yes	yes	non-specific dysfunction T (bill)	(L) T	1. HTA 2. hypothyroidism	verbal memory impairment	T lobectomy	3	III
2	Huse (2013)	38, F	33	GTC	(R) P	yes	no	N/A	N/A	none	N/A	subtotal resection	16	I
3		35, M	29	episodic confusion	(R) T	N/A	N/A	N/A	N/A	none	N/A	subtotal resection	6	I
4		54, M	14	CPS, GTC	(R) T	yes	yes	N/A	N/A	none	progressive cognitive difficulties	T lobectomy	11	I
5		31, F	26	SPS, CPS, GTC	(L) T	yes	yes	N/A	N/A	none	N/A	subtotal resection	12	IV
6		64, M	62	staring and mumbling	(L) T	N/A	N/A	N/A	N/A	none	N/A	biopsy	N/A	N/A
7	Bodi (2014)	34, F	8	CPS	(L) F	yes	yes	SPKs	N/A	none	N/A	gross total resection	24	III
8	Fukushima (2014)	37, M	37	seizure with speech arrest	(L) P	N/A	N/A	N/A	N/A	none	N/A	gross total resection	18	I
9	Yamaguchi (2016)	41, M	19	epigastric aura-> dialeptic seizure	(R) T	yes	yes	N/A	N/A	none	N/A	subtotal resection	N/A	N/A
10	Cathcart (2017)	29, M	29	dialeptic seizure	(R) T	N/A	N/A	R T slow	N/A	none	N/A	biopsy	N/A	N/A

11	Nunes (2017)	28, F	N/A	N/A	(R) F	N/A	N/A	non-specific dysfunction	N/A	N/A	N/A	no	26	N/A
12		58, M	N/A	N/A	(R) TP	N/A	N/A	non-specific dysfunction	N/A	N/A	N/A	no	58	N/A
13		31, F	N/A	N/A	(L) TPO	N/A	N/A	non-specific dysfunction	N/A	N/A	N/A	no	36	N/A
14		35, M	N/A	N/A	(L) TP	N/A	N/A	N/A	N/A	N/A	N/A	no	48	N/A
15		35, F	N/A	N/A	(L) T	N/A	N/A	non-specific dysfunction	N/A	N/A	N/A	no	24	N/A
16		25, M	N/A	N/A	(R) T	N/A	N/A	R T SPKs	N/A	N/A	N/A	gross total resection	96	I
17		27, F	N/A	N/A	(L) F	N/A	N/A	N/A	N/A	N/A	N/A	no	144	N/A
18		53, M	N/A	N/A	(L) T	N/A	N/A	L T SPKs	N/A	N/A	N/A	gross total resection	N/A	N/A
19	Alsufayan (2017)	38, F	32	GTC	(L) T	N/A	N/A	unremarkable	N/A	N/A	N/A	no	73	N/A
20		34, M	34	N/A	(R) FP	N/A	N/A	N/A	N/A	N/A	N/A	no	37	N/A
21		27, F	27	N/A	(L) F	N/A	N/A	unremarkable	N/A	N/A	N/A	no	35	N/A
22		51, M	49	brief episodes of memory loss	(L) P	N/A	N/A	N/A	N/A	N/A	N/A	no	5	N/A
23		27, F	17	N/A	(R) F	N/A	N/A	F SPKs	N/A	N/A	N/A	no	N/A	N/A
24		46, F	N/A	N/A	(R) P	N/A	N/A	unremarkable	N/A	N/A	N/A	no	93	N/A
25	Thom (2017)	59, F	39	PS, GS	(L) T	yes	yes	N/A	N/A	depression	N/A	T lobectomy	108	II
26		32, F	N/A	PS	(R) T	N/A	N/A	N/A	N/A	migraine	non-verbal memory impairment	T lobectomy	72	I
27		27, F	10	PS, GS	(L) T	N/A	N/A	N/A	N/A	none	N/A	T lobectomy	168	I
28		67, M	65	PS	(R) TP	N/A	N/A	N/A	N/A	none	N/A	gross total resection	24	I
29		48, F	47	PS, GS	(L) T	N/A	N/A	N/A	N/A	none	N/A	gross total resection	24	I
30		6, M	N/A	N/A	(L) T	N/A	N/A	N/A	N/A	none	N/A	T lobectomy	17	I
31		54, M	21	PS, GS	(R) T	N/A	N/A	N/A	N/A	none	N/A	T lobectomy	10	I
32		41, F	N/A	N/A	(R) T	N/A	N/A	N/A	N/A	none	N/A	T lobectomy	N/A	N/A
33		55, M	N/A	CPS	T	N/A	N/A	N/A	N/A	none	N/A	T lobectomy	N/A	N/A
34	Gökçe (2017)	21, M	N/A	N/A	(R) F	N/A	N/A	N/A	N/A	none	N/A	no	24	N/A
35	Pekmezci (2018)	11, F	N/A	N/A	(L) T	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
36		19, F	N/A	N/A	(R) T	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
37		12, F	N/A	N/A	(R) T	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

38	Gonzalez-Quarante (2018)	52, M	50	dialeptic seizure	(R) T	N/A	N/A	dysfunction R T (HVN)	N/A	none	N/A	T lobectomy	12	I
39	current case	48, F	47	ictal dystonia of right hand/automatisms of left hand -> oroalimentary automatisms -> postictal aphasia	(L) T	yes	yes	T SPKs (bill)	(L) T	bipolar affective disorder	verbal memory impairment	T lobectomy	20	I

AED: antiepileptic drug; PRE: pharmacoresistant epilepsy; F: female; M: male; L-left; R: right; T: temporal; P: parietal; F: frontal; O: occipital; sGTC: secondary generalised tonic-clonic seizures; SPS: simple partial seizures; CPS: complex partial seizures; SPKs: spikes; HVN: hyperventilation; HTA: arterial hypertension; HV: histopathologically verified.