



Limbic Cognitive and Psychotic Disorders as onset of Multiple Sclerosis: a case report

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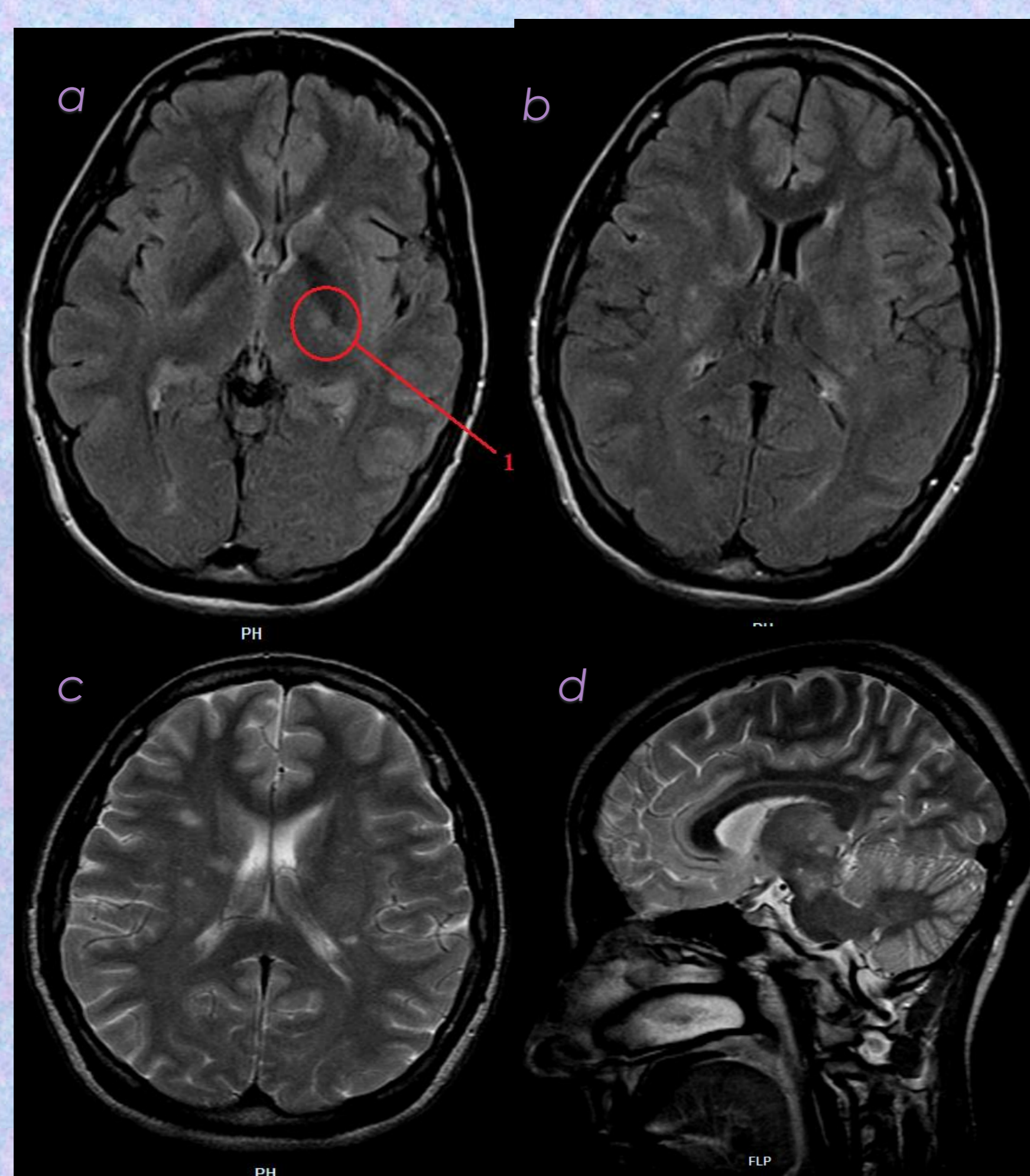
Objectives

Cognitive and Behavioural symptoms are common in Multiple Sclerosis (MS), but they rarely represent the onset and predominant manifestation of the disease¹. The limbic system, relevant to memory and emotions, can be easily overlooked in conventional magnetic resonance imaging (MRI). We report a case of psychotic and cognitive onset of multiple sclerosis in which MRI has revealed limbic pathway lesions and multiple lesions in white matter in patient affected by multiple sclerosis.

A 30 years-old woman was admitted in our department in July 2014, presenting with a sneaky memory disorder begun about two years before associated with "grimaces" of the face and psychotic somatoform delirium with visual and auditory hallucinations. The neurological examination showed awkward gait associated with choreic movements of the trunk and upper limbs, hypotonus spread to the four limbs; the talking revealed form and content disturbance of the thought and emotional lability.

Materials

Results



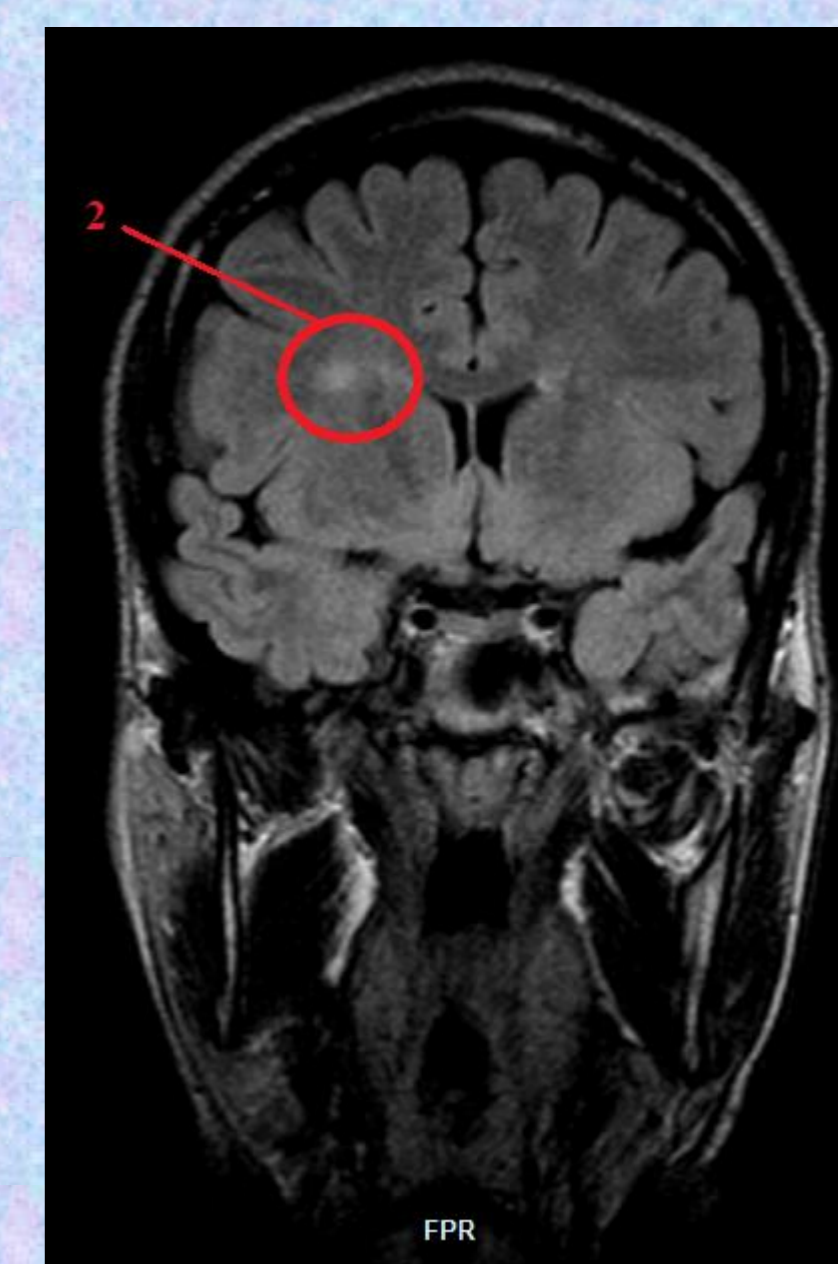
MRI imaging: mammilo-thalamic lesion circle in Fig.a, hyperintense lesions in frontal periventricular white matter in Fig. c, thalamic lesion in sagittal T2 scan in Fig.d

Extensive neuropsychological evaluation showed the presence of slowness of thought, deficit of verbal fluency and long-term memory and a lack of attention and working memory.

Brain MRI showed in T2 and Flair multiple hyperintense lesions interesting the frontal periventricular white matter, corona radiata, corpus callosum, caudate nuclei, lenticulo-striate and mammilo-thalamic lesions as part of limbic pathway and infratentorial midbrain lesions.

After administration of gadolinium two lesions showed enhancement and the site and number of lesions were compatible with demyelinating disease. Therefore the patient was submitted to lumbar puncture that revealed the presence of oligoclonal bands in cerebrospinal fluid. Other exams were negative and the patient received diagnosis of multiple sclerosis. After introduction of haloperidol she had a great improvement and reduction of choreic movements and psychotic status.

MRI imaging: lenticulo-striatal lesion in red circle, coronal FLAIR



Neuropsychological evaluation

NEUROPSYCHOLOGICAL TEST	RAW SCORE	CORRECT SCORE	EQUIVALENT SCORE
Mini Mental State Examination (MMSE)	30/30	29.42	≥ 23.8
ATTENTIONAL AND EXECUTIVE FUNCTIONS			
Frontal Assessment Battery (FAB)	14/18	13.5	1
Attentional Matrices	30/50	28.75	0
Stroop Test: time	43.5"	62.25"	0
Stroop Test: interfered Color Naming	0	0	4
Phonological Verbal Fluency	14	14	0
Paasik Test- A (1')	22/50	27.8	≤ 28.4
Paasik Test- A (2')	24/50	27.8	≤ 17.1
SHORT-TERM MEMORY			
Digit Span Forward	5	4.75	3
Digit Span Backward	5	7	28
Visual-Spatial Span	4	3.75	1
LONG-TERM VERBAL MEMORY			
Story recall test: immediate recall	6.3/8	5.9	3
Story recall test: delayed recall	5.3/8	5.9	4
Ray & 15 word learning test: immediate recall	2/7.5	24.1	0
Ray & 15 word learning test: delayed recall	0/15	3.9	0
Learning pairs of words	10	9.5	2
LONG-TERM VISUO-SPATIAL MEMORY			
Ray Osterrieth Complex Figure: Delay Test	15.5/36	12.5	2
CONSTRUCTIONAL PRAXIS ABILITIES			
Ray Osterrieth Complex Figure: Copy	36/36	34.5	4
Clock Drawing Test (CDT): number correct	10/10	-	28
LANGUAGE ABILITIES			
Semantic Verbal Fluency	21	19	0
Object Naming: BADA	28/30	-	≥ 25
NON-VERBAL REASONING ABILITIES			
Raven's Coloured Progressive Matrices	30/36	29.5	4

Discussion and conclusions

Our case shows an atypical onset of multiple sclerosis characterized by cognitive and psychotic symptoms associated with lesions in limbic pathway. Instead of cortical and frontal lesions we correlate the syndrome to lesions in limbic pathway and in particular in thalamus nuclei¹. A relatively high frequency of lesions involving the limbic tracts may explain memory deficits and emotional dysfunction commonly experienced by patients with MS². A choreic syndrome, as onset symptom of multiple sclerosis is never reported in literature, and it is probably related to lenticulo-striatal nuclei lesion³. This lesion, are reported in literature and often it's very difficult to identify them but sporadic case or clinical study detected caudate and striatum lesions responsible also for behavior and cognitive impairment.

Bibliography

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