An Atypical case of Posterior Reversible Encephalopathy in a Multiple Sclerosis Patient

R Reniè, C Romano[1], E Morena[1], M.C Buscarinu[1], A.Fornasiero[1], M. Ferraldeschi[1], S.Romano[1], G.Ristori[1],M Salvetti[1]

[1] *Department of Neurological Sciences, Mental Health and Sensory Organs (NESMOS)-AO Sant'Andrea-Sapienza University of Rome*

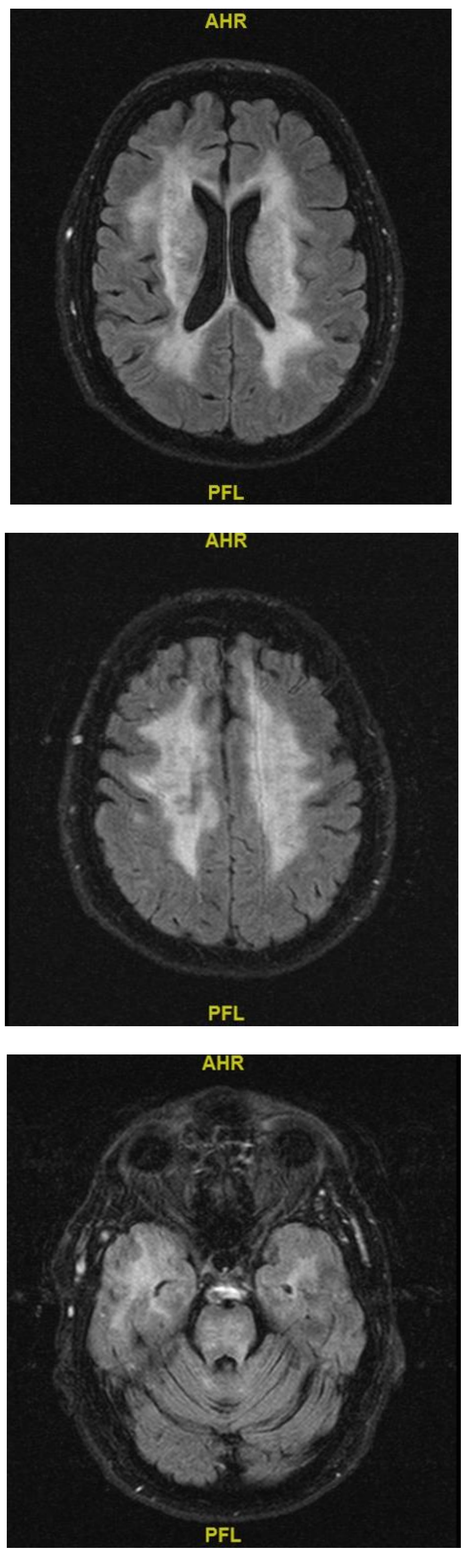
Introduction

Subacute headache onset, altered mental status and occasionally other focal neurological signs characterize posterior reversible encephalopathy syndrome. Imaging studies reveal bilateral vasogenic edema in the white matter of parieto-occipital lobes, but changes can also be seen in frontal and temporal lobes, brainstem, cerebellum, cortical as well as deep gray matter

Case Report

A 53-year-old caucasian man affected by relapsing remitting Multiple Sclerosis from 1996 and treated with interferon-beta for fifteen years. In October 2016 he came to our ED for an episode of loss of consciousness, that lasted few minutes, followed by confusion. At admission BP was 200/110 mmHg. Head CT-scan demonstrated a diffuse white matter hypodensity with a lacunar area in the brainstem. Blood tests evidenced thrombocytopenia (92 x 10.e3) and kidney failure (creatinine 3,02 mg/dl) **(TAB.1).** Neurological examination revealed cognitive impairment, delirium, gait instability and right lower limb weakness. A treatment with alpha-adrenergic blockers was started and interferon was suspended. Cerebral MRI revealed diffuse bilateral sovratentorial and periventricular T2 hyperintensities **(FIG.1).** It was not possible to use MRI contrast due to kidney failure. An oculistic examination demonstrated hypertensive retinopathy (grade 4); abdomen and cardiac ultrasonography, ANA, ENA profile, pANCA, cANCA were normal. An electroencephalogram showed aspecific electric fronto-temporal alterations. NOTCH 3 mutations were absent. After few days cognitive status, thrombocytopenia and kidney failure improved and the patient was discharged at home in stable conditions

FIG.1 MRI acute event



WBC	7,59	4,30 – 10,80
Platelets	99	140- 400
Azotaemia	41 mg/dl	5-25
Creatinine	3,02 mg/dl	0,70- 1,25
LDH	319 U/L	115-220
PTH	53,00 pg/ml	5,50-38,40
Vit. B12	409 pg/ml	180-914
Vit. D	19,30 ng/ml	30-100
Folic Acid	1,80 ng/ml	3,10-17,50

C3 e C4	Normal
Ig A, Ig G, Ig M	Normal
ANCA	Negative
ANA	Negative
Ab anti dsDNA	Negative
Thyroid function	Normal
Cryoglobulins	Absent

NOTCH 3	Negative

TAB.1 Blood Samples acute event

FIG.2 MRI follow- up at three months

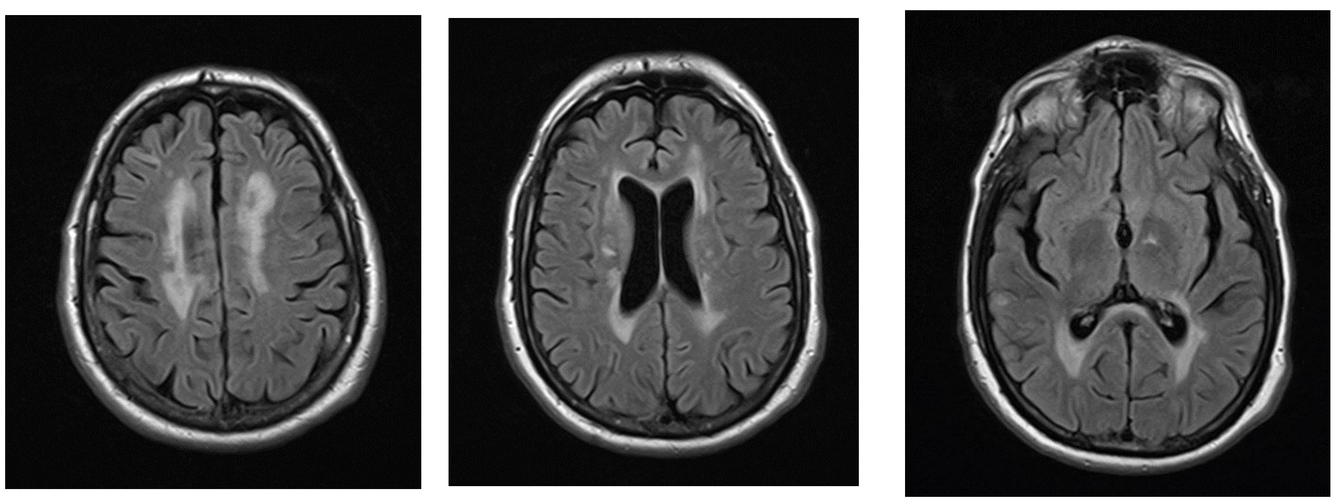
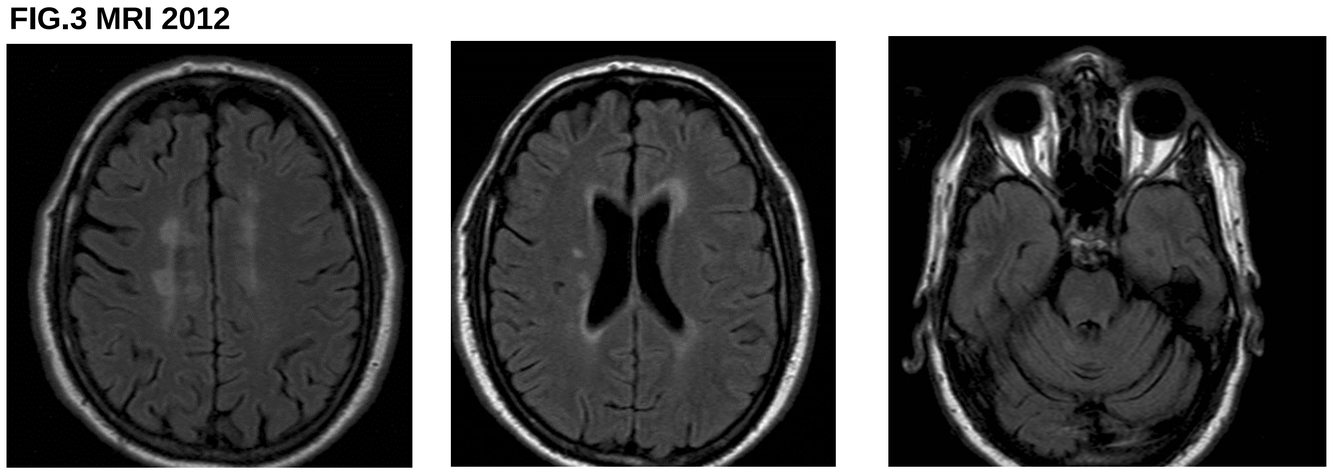


FIG.3 MRI 2012



Blood samples performed after three months showed normal values of platelets and creatinine improvement **(TAB.2).** MRI showed a drastic reduction of hyperintensities bilaterally, few T2 hyperintense periventricular lesions with confluent aspect and a right lacunar pontine area **(FIG.2).** Neurological examination revealed a normal cognitive status, absence of delirium but an important worsening of gait (possible only per few meters, patient in wheelchair).

We did a comparative analysis with patient's MRI during the years and the last one was comparable to those taken from 2000 to 2015, before the acute event **(FIG.3)**

Hb	13,7	13-18
WBC	10,4	4,30 – 10,80
Platelets	192	140- 400
Azotaemia	75 mg/dl	5-25
Creatinine	2,47 mg/dl	0,70- 1,25

TAB..2 Blood Samples at follow-up at three monts

Conclusions

In this case the patient presented a diffuse vasogenic edema probably due to the toxic effect of Interferferon, which causes hypertension and kidney injury. The clinical course and imaging findings resulted to be highly consistent with an atypical posterior reversible encephalopathy syndrome. In fact, removing the pathogenic noxa led to a restitution *ad ante* of the MRI images

Sin

XLVIII CONGRESSO NAZIONALE
14-17 OTTOBRE 2017 – NAPOLI

References

1. Brady E1, Parikh NS2, Navi BB2, Gupta A3, Schweitzer AD4 , The imaging spectrum of posterior reversible encephalopathy syndrome: A pictorial review. Clin Imaging. 2017 Aug 30;47:80-89
2. Lindå H1, von Heijne A2 A case of posterior reversible encephalopathy syndrome associated with gilenya(®) (fingolimod) treatment for multiple sclerosis, Front Neurol. 2015 Mar 4;6:39
3. Ollivier M1, Bertrand A2, Clarençon F3, Gerber S4, Deltour S5, Domont F6, Trunet S4, Dormont D2, Leclercq D7 Neuroimaging features in posterior reversible encephalopathy syndrome: A pictorial review, J Neurol Sci. 2017 Feb 15;373:188-200
4. Yoshida K1, Yamamoto T, Mori K, Maeda M, Reversible posterior leukoencephalopathy syndrome in a patient with hypertensive encephalopathy--case report. Neurol Med Chir (Tokyo). 2001 Jul;41(7):364-9