Subacute cerebellar degeneration in a patient with a previous diagnosis of Gist: a case report.

C. Rinaldi [1], S.M. Angelocola [1], M.C. Acciarri [1], R. Baruffaldi [1], F. Lupidi [1], P. Di Bella [1], L. Provinciali [1]

[1]Neurological Clinic, Department of Experimental and Clinical Medicine, Marche Polytechnic University, Ancona

INTRODUCTION

Subacute cerebellar degeneration is an uncommon disorder usually found in patient with tumors: it has been associated with a wide variety of neoplasms, including small cell lung carcinoma, Hodgkin lymphoma, and carcinoma of the ovary, fallopian tube, uterus, and breast. As a paraneoplastic manifestation, it is triggered by autoimmune reactions and presents with subacute onset of ataxia, dysarthria and intention tremor.

PARANEOPLASTIC NEUROLOGICAL SYNDROMES AFFECTING THE CENTRAL NERVOUS SYSTEM

- Cerebellar degeneration
- Encephalomyelitis
- Limbic and brainstem encephalitis
- Opsoclonus-myoclonus
- Stiff-person syndrome
- Necrotizing myelopathy
- Motor neuron syndromes

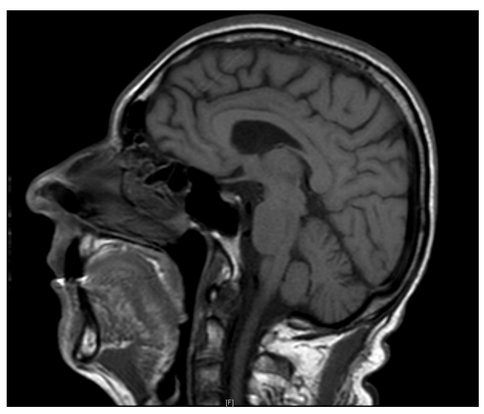
(ALS; subacute motor neuronopathy; upper motor neuron dysfunction)

CASE REPORT

In March 2015 a 56-year-old caucasian male started to experience body imbalance and speech difficulties. His medical history was remarkable only for a gastrointestinal stromal tumor (GIST) treated with partial gastrectomy four months before: the histological evaluation of the GIST had shown a mitotic rate of 1-2 mitoses in 50 high power fields and the molecular genetic test had identified mutation only in the PDGFRA gene (exon 18).
Over the following months he experienced a progressive worsening dysarthria and ataxia and he gradually became unable to walk without assistance. In December 2015 he was referred for the first time to our hospital.
Neurological examination revealed a severe cerebellar syndrome characterized by involvement of vermis and hemispheres. Cerebrospinal fluid analysis (CSF) was normal without evidence of infections. Standard laboratory tests including coagulation tests, thyroid function, and vitamin B12 resulted negative. No pathological results were found in antibodies vs onconeuronal antigens, glutamic acid decarboxylase (GAD), and synaptic neuronal antigens (NMDA, AMPA, GLUR3A, LGI1 and CASPR2 proteins). Brain magnetic resonance imaging (MRI) was normal. Tumor markers were within normal limit except for serum levels of CYFRA 21-1 (4,6 ng/ml; normal value <3,5 ng/ml). Thoracic and abdominal computed tomography (CT) scans as well as whole-body Positron Emission Tomography excluded presence of a new recurrent tumor.

ETIOLOGY OF SUBACUTE ATAXIA

- Mass lesions in the posterior fossa
- Meningeal infiltrates
- Infections (i.e. HIV)
- Creutzfeldt Jakob Disease
- Deficiency syndromes (i.e. vitamin B_{12})
- Hypothyroidism
- Immune disorders (paraneoplastic, gluten, and anti-GAD ataxia)
- Alcohol



Brain MRI, T1-weighted image

Based on these results a diagnosis of subacute cerebellar degeneration was done in absence of any causative condition.
Even if there was no evidence in literature of the efficacy of immunomodulatory therapy in such condition, the patient was discharged with the indication for a six months period of immunotherapies consisting in intravenous immunoglobulin and corticosteroids. At the last follow-up, six months after the discharge, we detected a mild improvement of dysarthria.

CONCLUSIONS

To our knowledge, this is the first report of subacute cerebellar degeneration hypothetically associated with GIST. Further similar cases are necessary to support this association and to confirm the opportunity of immunomodulatory therapy in patients with clinical syndromes resembling paraneoplastic disorders, whether an underlying tumor and autoantibodies are demonstrated or not.

References:
1 - Mitoma H, Hadjivassiliou M, Honnorat J. Guidelines for treatment of immune-mediated cerebellar ataxias. Cerebellum & Ataxias. 2015; 2:14.
2 - Mowzoon N, Bradley WG. Successful immunosuppressant therapy of severe progressive cerebellar degeneration and sensory neuropathy: a case report. Journal of Neurological Sciences. 2000;178(1):63-5.

SIN SOCIETÀ ITALIANA DI NEUROLOGIA