LETTER TO THE EDITOR

To The Editor

Anti-CV2-Associated Paraneoplastic Hemichorea Secondary to Diffuse Large B-cell Lymphoma

Patients with paraneoplastic chorea associated with anti-CV2 antibodies present with characteristic movement patterns.[1] This paraneoplastic syndrome is most often in association with small-cell lung cancer although there are cases of patients diagnosed with adenocarcinomas, and rarely non-Hodgkin's lymphoma.[1–3] We report paraneoplastic hemichorea in a 71-year-old man diagnosed with diffuse large B-cell lymphoma, a unique case given the rare association with this malignancy.

A 71-year-old man with a past medical history of essential thrombocytosis (platelet count in the normal range with hydroxyurea), well-controlled type II diabetes mellitus (HbA1c of 6.6% and point of care glucose of 6.2 on the day of presentation) and hypertension, presented to the emergency department with new-onset left-sided movement abnormalities. The involuntary movements initially progressed from the left lower limb to left face and then left upper limb, worsening in amplitude and frequency over a period of days. Examination revealed left-sided chorea and dysarthria. The rest of the neurological examination was normal. The patient had no known family history of Huntington's disease and four siblings without neurological conditions. CT angiogram was negative for neurovascular findings; however, it demonstrated a 1.5 cm left anterolateral pharyngeal soft tissue mass. Brain MRI showed only mild generalised atrophic changes, typical for age, without signal abnormalities or diffusion restriction. There was no abnormal enhancement with gadolinium-enhanced MRI. CT of the chest, abdomen and pelvis was unremarkable except for calcified coronary arteries. Biopsy of the vallecular lesion showed a monoclonal B-cell population, in keeping with serum protein electrophoresis results which demonstrated an IgG kappa monoclonal band. An autoimmune work-up, including ANA and ENA antibodies, ANCA and cardiolipin, was negative and a paraneoplastic antibody panel was positive only for anti-CV2 (CRMP-5) antibodies in serum (concentration 1:200 with reference <1:100; the method used was Nanoliter Scale Immunoassay from Athena Diagnostics). The patient was diagnosed with diffuse large B-cell lymphoma and received three cycles of cyclophosphamide, doxorubicin, vincristine, prednisone and rituximab, followed by radiation with no evidence of disease recurrence post-treatment. During chemotherapy, hydroxyurea was discontinued resulting in a slightly elevated platelet count of 437 × 10^9/L (reference range 150–400 × 10^9/L). The patient's chorea was successfully controlled with haloperidol and tetrabenazine, medications that were subsequently discontinued without re-emergence of the chorea even after 6 months of follow-up, and his neurological examination was normal.

Paraneoplastic chorea is a rare clinical entity, most often presenting in the context of small-cell lung cancer and various adenocarcinomas.[1–3] There are only four reported cases of paraneoplastic chorea in patients with non-Hodgkin's lymphoma.[4] Patients often present sub-acutely, with chorea developing over a period of 3–6 months before the diagnosis of malignancy.[1] The movement disorder may be focal to start, becoming generalised and symmetric in the majority of patients.[3] The trunk, neck and limbs are most often involved with more severe movements in the hands and feet.[1] Patients commonly present after the age of 70 and with other neurological symptoms such as vision loss and peripheral neuropathy but can have an isolated movement disorder.[1,3] Head MRI is normal in the majority of cases and family history non-contributory.[1,3]

The presence of anti-CV2 (CRMP-5) antibodies in our patient provides evidence to support a diagnosis of paraneoplastic chorea. Anti-CV2 is the most common antibody reported in patients with paraneoplastic chorea although up to 20% of patients are negative for associated antibodies.[1] In addition, the temporal improvement with the treatment of malignancy suggests the chorea was related to the presence of malignancy. Variations in severity are reported, although complete symptom resolution with the treatment of the malignancy occurs in less than 50% of patients.[1,3] Since anti-CV2 paraneoplastic chorea is most often associated with small-cell lung cancer, the poor prognosis of this malignancy may reflect the incomplete resolution of chorea in these patients.[1,5] Symptomatic treatment with medical therapy is most effective with one study reporting improvement in approximately 80% of patients.[1] Emphasis on symptomatic management is therefore warranted.

Our patient had a co-existing diagnosis of essential thrombocytosis, which has been associated with chorea.[6] In our patient, this diagnosis preceded the onset of chorea and was clinically managed with hydroxyurea at the time of presentation. Treatment of the lymphoma corresponded with the improvement of the patient's symptoms. Our patient's platelet count increased with discontinuation of hydroxyurea during chemotherapy, without any re-emergence of chorea. The evidence therefore suggests that treatment of the patient's B-cell lymphoma led to resolution of the chorea.

We present a rare case of anti-CV2 associated paraneoplastic chorea in the context of diffuse large B-cell lymphoma. The subacute-onset, rapidly progressive hemichorea prior to the detection of malignancy supports the need to consider a paraneoplastic syndrome due to underlying diffuse large B-cell lymphoma in the differential diagnosis. Detection and treatment of the primary lymphoma may result in the resolution of symptoms. Our patient's case may inform other healthcare professionals in the work-up and treatment of new-onset chorea in an older adult.

Statement of Authorship

SN worked on design and writing of the first draft of the manuscript. PR was involved in study concept, review and critique of the manuscript.

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