

Case report

Coexistence of Guillain-Barré syndrome and Behçet's disease

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ABSTRACT

Behçet's disease (BD) is a multisystemic, recurrent and inflammatory disorder. Neurological involvement is rare and affects mainly the central nervous system (CNS) in the form of brainstem meningoencephalitis or dural sinus thrombosis. Peripheral neuropathy is usually not observed during the course of BD but some reports have shown electrophysiologic evidence of subclinical neuropathy, mononeuritis multiplex and cranial neuropathy in BD patients. The co-occurrence of Guillain-Barré syndrome (GBS), an acute inflammatory demyelinating neuropathy, with other autoimmune or systemic diseases is rare. We present a case of BD with clinical and electrophysiological diagnosis of GBS. The findings of the patient were discussed with reference to literature.

Introduction

Behçet's disease (BD) is a multisystemic, relapsing and inflammatory disorder of unknown origin. The clinical manifestations include recurrent oral aphthae, genital ulcers, erythema nodosum, pseudofolliculitis, uveitis and arthritis (1, 2). Neurologic involvement, which mostly affects the central nervous system (CNS) is seen in 5-15% of patients and is either parenchymal, in form of brainstem meningoencephalitis, or presents as dural sinus thrombosis (1-4).

Although peripheral nerve involvement is uncommon in BD, clinical or asymptomatic subclinical axonal polyneuropathy, mononeuritis multiplex and cranial neuropathy have been reported (5-8). Whether neuropathy associated with BD is a side effect of medications, caused by BD pathogenesis or merely coincidental is arguable. Guillain-Barré syndrome (GBS) is most commonly encountered as an acute inflammatory

demyelinating neuropathy and its co-occurrence with other autoimmune or systemic diseases is rare. In this report we present a case of BD with simultaneous GBS.

Case report

A 33-year-old woman with a 2-year history of oral aphthae, arthritis and genital ulcers for which she did not receive any treatment, presented with a 2-day history of paresthesia in both hands and feet and difficulty walking. Her weakness and paresthesia had started in both feet and ascended rapidly to the hands. She did not have cranial and/or respiratory symptoms or a history of upper respiratory infection or gastroenteritis. Her symptoms progressed over 1 week, at which time neurological examination showed symmetrical muscle weakness in distal upper and lower limbs (Medical Research Council grade 3-4/5), stocking-and-glove sensory loss in hands and feet, lost deep tendon reflexes in all limbs, normal vibration sense and flexor plantar responses.

Cerebrospinal fluid (CSF) analysis performed on the 6th day of symptom onset revealed normal cell count and glucose level, increased protein level (65 mg/dl) and no oligoclonal bands. Results of the nerve conduction study performed on the same day were suggestive of GBS on the basis of lost F-wave responses, mildly reduced nerve conduction velocities and prolonged distal latencies of motor and sensory nerves, nerve conduction blocks and normal or mildly diminished action potential amplitudes. There were no electromyographic signs of myopathy. Complete blood count, blood biochemistry, sedimentation rate, serum creatine kinase levels and a comprehensive panel for vasculitic-rheumatological (anti-nuclear, anti-DNA, anti-cardiolipin and

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thyroid antibodies, rheumatoid factor, ENA screening) and infectious diseases (CMV, HIV, EBV) were normal. Serology and stool culture for *Campylobacter jejuni* and anti-ganglioside antibodies could not be studied.

Following confirmation of the GBS diagnosis by CSF and nerve conduction findings, intravenous immunoglobulin (IVIg) (0.4 g/kg body weight for 5 days) infusions were started on the 7th day after symptom onset. The patient started improving within 2 weeks and neurological examination was normal 5 weeks after IVIg treatment. During her follow-up she was found to be positive for pathergy test, further supporting the diagnosis of BD and was started on colchicine and azathioprine. Four months after her discharge, she was stable with normal neurological examination.

Discussion

The presented case fulfilled the criteria for BD (9) and also had the typical clinical, electrophysiological and CSF (albuminocytologic dissociation) features of GBS. Notably, the patient was of female gender, while BD is predominantly a male disease (1-4) and was also remarkably treatment-responsive. Although a BD patient with clinical and electromyography findings of acute motor axonal polyneuropathy has been previously reported (10), the exact diagnosis of this patient is disputable since detailed clinical and pathological features have not been provided. Nevertheless, to our knowledge, we present the first detailed description of acute inflammatory demyelinating polyneuropathy (AIDP) occurring in association with BD.

Although peripheral nerve involvement is not a well-known complication of BD, some BD patients develop sub-clinical (around 14–19% in two studies) or overt axonal polyneuropathy (5, 6). In some cases, polyneuropathy can be attributed to commonly used BD medications such as colchicine. However, our patient was not under any medication during symptom onset

suggesting that GBS findings were of non-toxic and presumably immune-mediated nature.

In all likelihood, GBS-BD association of our case might be purely coincidental. Two major features of the AIDP variant of GBS, favourable response to IVIg and demyelination, have not been reported in BD patients. Nevertheless, GBS and BD share common autoinflammatory features and profoundly lack disease-specific autoantibodies. Proinflammatory Th1 and Th17 cytokines and infiltrating cytotoxic T lymphocytes have been implicated in the pathogenesis of both disorders (1, 2, 11, 12). Several variant genes rendering susceptibility to multiple autoimmune disorders that are seemingly induced by different pathogenic mechanisms have been previously reported. As an example, a polymorphic variant of the PTPN22 gene has been associated with type 1 diabetes, rheumatoid arthritis, systemic lupus erythematosus and Hashimoto's thyroiditis (13). Therefore, in a hypothetical setting, certain gene(s) controlling lymphocyte functions might confer susceptibility to T cell mediated diseases by enhancing lymphocyte mobility, adhesion molecule expression and proinflammatory cytokine production. Following exposure to certain environmental triggers (e.g. *C. jejuni* infection for GBS), individuals with a proinflammatory phenotype induced by these susceptibility genes might develop BD, GBS or both. The coexistence of BD and Rasmussen's encephalitis (a T cell mediated inflammatory disease) in first degree relatives might support this assumption (14, 15). Further characterisation of BD patients with GBS might aid in better understanding of the pathogenesis of both disorders and unraveling precise common immunogenetic factors underlying these two T-cell mediated disorders.

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