www.jcimcr.org

JCIMCR OPEN ACCESS Journal of Clinical Images and Medical Case Reports

ISSN 2766-7820

Case Report

Open Access, Volume 6

Paraneoplastic Stiff-Person syndrome: A case report

Jacqueline Young*; Timothy Hembree

Department of Internal Medicine and Quality, Moffitt Cancer Center, USA.

***Corresponding Author: Jacqueline Young**
Department of Internal Medicine and Quality,
Moffitt Cancer Center, USA.
Email: jacqueline.young@moffitt.org

Received: Feb 07, 2025

Accepted: Mar 06, 2025

Published: Mar 13, 2025

Archived: www.jcimcr.org

DOI: www.doi.org/10.52768/2766-7820/3507

Abstract

Paraneoplastic Stiff-Person Syndrome (SPS) usually occurs in patients with breast cancer, ovarian cancer, or small-cell lung cancer [1]. It is often characterized by proximal muscle spasms, muscle stiffness and muscle rigidity. Axial muscles of the trunk and proximal muscles of the limbs are often involved, but facial muscles can be involved as well [2]. This case details a 60-year-old female with a history of metastatic breast cancer. She presented with worsening spasms in her face. The patient underwent extensive workup most of which were negative. A CSF electrophoresis study showed slight elevation of total protein (52.5 mg/dL, normal 15-45 mg/dL) which was suggestive of inflammatory etiology. Serum anti-GAD antibodies were obtained and was positive (62.9 IU/ml, normal 0.0-5.0 IU/ml). The patient was treated initially with ice masks and benzodiazepines, which helped to relieve some symptoms. A trial of IVIG and rituximab were ineffective. However, plasma exchange helped reduce the severity of the facial spasms.

Keywords: Stiff Person Syndrome (SpS); Paraneoplastic; Breast cancer; Oncology.

Introduction

Stiff-Person Syndrome (SPS) is rare disorder characterized by painful proximal muscle spasms, muscle stiffness, and muscle rigidity. This rare neurological disorder often involves the axial muscles of the trunk and proximal muscles of the limbs, but can involve facial muscles [2]. Paraneoplastic SPS is commonly associated with breast cancer, ovarian cancer, or small-cell lung cancer [1]. There are no formally accepted criteria to diagnose SPS. Diagnosis requires a high degree of suspicion clinically and testing of anti-Glutamic Acid Decarboxylase (GAD) antibody and amphiphysin antibody [3,4]. On EMG testing, patients will have a positive response with diazepam. Treatment of SPS is directed at controlling symptoms and improving mobility and function. Diazepam is considered first line of treatment. If patients do not respond to diazepam, then baclofen or IVIG is considered second line of treatment [4]. For patients with paraneoplastic syndrome, treatment also consists of controlling the underlying cancer.

Case report

A 60-year-old female with metastatic breast cancer presented with worsening sporadic spasms in her face and jaw (Figure 1 and Figure 2), difficulty swallowing, shortness of breath, right arm myoclonus. Her right arm myoclonus occurred every 5 to 30 minutes with a frequency of up to 20 times a day. The myoclonus eventually progressed to stiffness in both arms. Her facial spasms were associated with frequent blinking involving one or both eyes which occasionally caused involuntary palpebrae stiffness.

The patient underwent extensive workup with MRI brain and spinal cord, EEG, and CSF fluid analysis. Her MRI brain and spinal cord was unchanged from 6 months prior with no evidence of metastatic disease or dural enhancement in brain or spinal cord. An EEG was obtained which did not show any epileptogenic activity.

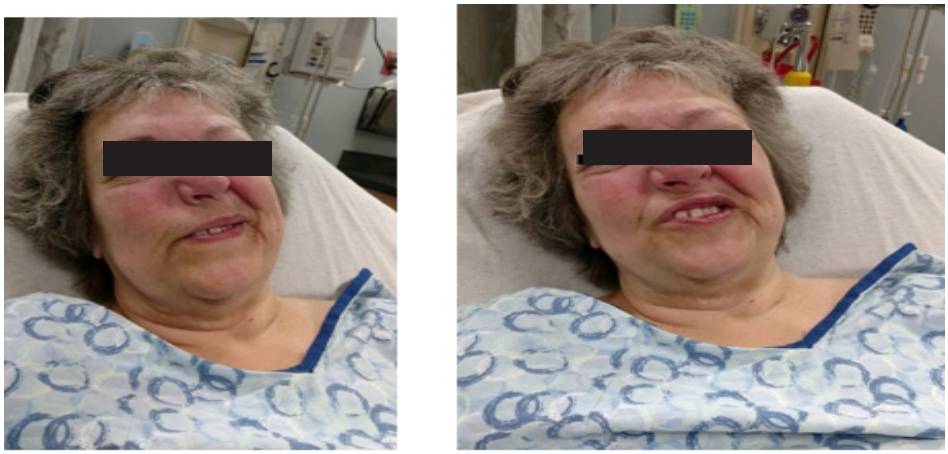

Figure 1: Clinical image.

CSF electrophoresis/ immune-fixation studies were obtained which showed slight elevation of total protein (52.5 mg/dL (normal 15-45)) with elevated Gamma, CSF (7.5 mg/dL (normal 0-5)) suggestive of inflammatory etiology. The CSF cytology was negative for malignant cells. Given concern for inflammatory etiology paraneoplastic autoantibody, serum anti-Glutamic Acid Decarboxylase (GAD) antibodies, and amphiphysin antibody were obtained. The paraneoplastic autoantibody was negative. Amphiphysin antibody was obtained and was negative. However, serum anti-GAD antibodies were positive (62.9 IU/ml, normal 0.0-5.0 IU/ml).

Treatment was started at the onset of symptoms. Initially, ice masks and diazepam were started which helped to partially relieve symptoms. A trial of IVIG and rituximab were then initiated and were ineffective. Subsequently, plasma exchange was started which helped to lessen the intensity of the facial spasms.

Discussion/conclusion

Stiff-Person Syndrome (SPS) is a rare autoimmune disorder with an estimated prevalence around one in one million in the general population. Paraneoplastic SPS is even rarer with a prevalence estimated around one in two million in the general population [5]. Although Paraneoplastic SPS is an uncommon disorder, it should be considered in the differential diagnosis when a patient presents with proximal or facial muscles spasms or stiffness. This is particularly relevant for patients with breast cancer, ovarian cancer, or small-cell lung cancer. Appropriate testing and imaging should be obtained to rule out more common disorders. If paraneoplastic SPS is suspected, consider ordering paraneoplastic autoantibody, serum anti-GAD antibodies, and serum amphiphysin antibody. Our case underscores the importance of ordering all three tests given that one of the three labs were positive. SPS can be confirmed with EMG testing, in which patients will have a positive response with diazepam. If, as in our case, the patient is inpatient, then treatment should begin without EMG confirmation for symptomatic relief. Treatment of SPS is directed at controlling symptoms and improving mobility and the first line of treatment is with a benzodiazepine. The benzodiazepine of choice is diazepam, which can be given concurrently with baclofen. If diazepam is ineffective, then IVIG is considered. The third line of treatment, which was successful in our case, is plasma exchange. In addition, for paraneoplastic SPS, treatment also consists of controlling the underlying cancer. Timely diagnosis and appropriate treatment is essential to help with symptom management and improving mobility.

References

1. McKeon A, Robinson M, McEvoy K, Matsumoto J, Lennon V, and Ahlskog J. Stiff-man syndrome and variants, clinical course, treatments, and outcomes. JAMA Neurology. 2012; 69(2): 230-238.
2. Shaw P. Stiff-man syndrome and its variants. The Lancet. 1999; 353: 86-87
3. Folli F, Solimena M, Cofiell R, Austoni M, Tallini G, and Fassetta G. Autoantibodies to a 128-kd synaptic protein in three women with the stiff-man syndrome and breast cancer. NEJM. 1993; 328(8): 546-550
4. Helfgott S. Siff-man syndrome. Arthritis and rheumatism. 1999; 42(7): 1312-1320.
5. Simpson A, Obando D, Balshi A, Wang Y, and Newsome S. Paraneoplastic stiff person syndrome: persistence of symptoms is common despite treatment of underlying malignancy. Neurology. 2022; 19(18): 872.