CASE REPORT / CAS CLINIQUES

A CASE OF PEDIATRIC STIFF-PERSON SYNDROME IN KENYA

UN CAS PÉDIATRIQUE DE SYNDROME DE LA PERSONNE RAIDE AU KENYA

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ABSTRACT

Background

Stiff-person syndrome (SPS) is a rare progressive autoimmune disease that is especially uncommon in the pediatric population. SPS is often undiagnosed for years**.**

Case

Here we present a 12 year-old girl with a history of insulin dependent diabetes mellitus who presented with epigastric pain and whole body rigidity to a hospital in Eldoret, Kenya. A high-clinical suspicion led to targeted autoimmune testing and diagnosis in 15 days. The serum anti–glutamic acid decarboxylase (GAD) level was greater than 2000 (normal 0-10 IU/ml), strongly supporting the diagnosis of stiff-person syndrome plus. The patient recovered with diazepam, baclofen, and supportive care. Intravenous immunoglobulin was unavailable due to the patient's economic constraints and challenges in accessing the health facility. Several weeks later she returned with recrudescence of her symptoms.

Conclusion

We hope this case presentation will help illustrate the need to build care systems that can address the longitudinal care of patients with neurologic diseases in resource-limited settings.

RESUME

Introduction

Le syndrome de la personne raide (SPR) est une maladie auto-immune progressive rare qui est particulièrement rare dans la population pédiatrique. Le SPR n'y est souvent pas diagnostiqué pendant des années.

Observation

Nous présentons ici le cas d'une fille de 12 ans ayant des antécédents de diabète sucré insulino-dépendant qui s'est présentée avec des douleurs épigastriques et une rigidité corporelle totale dans un hôpital d'Eldoret, au

Kenya. Une forte suspicion clinique a conduit à des tests auto-immuns ciblés et à un diagnostic en 15 jours. Le taux sérique d'acide anti-glutamique décarboxylase (GAD) était supérieur à 2000 (normal 0-10 UI/ml), ce qui étaye fortement le diagnostic du syndrome de la personne raide plus. Le patient s'est rétabli avec du diazépam, du baclofène et des soins de soutien. L'immunoglobuline intraveineuse n'était pas disponible en raison des contraintes économiques du patient et des difficultés d'accès au centre de santé. Plusieurs semaines plus tard, elle est revenue avec une recrudescence de ses symptômes.

Conclusion

Nous espérons que cette observation aidera à illustrer la nécessité de créer des systèmes de soins capables de prendre en charge les soins longitudinaux des patients atteints de maladies neurologiques dans des milieux à ressources limitées.

INTRODUCTION

Stiff-person syndrome (SPS) is a rare progressive autoimmune disease that was first described 1956 (11). The incidence is estimated to be 1 in a million, of which 5% are pediatric cases (6,9). Here we describe an initial presentation of pediatric stiff-person syndrome to illustrate the evaluation that led to a high clinical suspicion for a relatively rapid diagnosis and help highlight the need for care systems that can address the longitudinal care of patients with neurological diseases in resource-limited settings.

CASE REPORT

A 12 year-old girl with a history of insulin dependent diabetes mellitus presented to the Shoe4Africa children's hospital in Eldoret, Kenya with epigastric pain and whole-body rigidity. The father reported the onset of rigidity in the girl two days prior to admission accompanied by jerking of the upper and lower limbs and no apparent alteration of awareness. He described that she was unable to ambulate, talk, or eat. She had recently received the tetanus immunization, but the timing of its administration was uncertain. Her only medication was insulin. She had no family history of neurologic diseases and had no prior history of trauma. This was the first episode of this nature.

On exam, the patient was afebrile and tachycardic. She was moaning and unable to respond to commands. Her eyes were deviated upwards with equally round and reactive pupils. She had no apparent cranial nerve deficits, sardonic smile, nor grinding of the teeth. She had trismus, nuchal rigidity, and a tonically stiff back. The upper extremities were extended with fluctuating asymmetric rigidity. The lower extremities were extended and rigid. There were no jerking movements nor convulsions. No wounds were present on examination of the skin.

Laboratory testing revealed normal complete blood count, electrolyte panel, and thyroid studies. Erythrocyte sedimentation rate was elevated at 26 (normal 0-12 mm/hour). The patient was treated supportively with diazepam. On day three, an electroencephalogram was normal. Computerized tomography of the head with contrast revealed diffuse leptomeningeal enhancement. The cerebral spinal fluid had elevated protein at 93.2 (normal 15-45 mg/dL), no white blood cells, and normal glucose. ELISA for HIV and India Ink for Cryptococcus were negative. Diazepam and baclofen were administered over the following week resulting in improvement of the patient's rigidity but not her epigastric pain.

Electromyography (EMG) was unavailable and a modified electrocardiogram was unsuccessful in acquiring reliable measurements of agonist-antagonistic muscle co-contractions. Targeted autoimmune testing revealed serum anti–glutamic acid decarboxylase (GAD) level greater than 2000 (normal 0-10 IU/ml), strongly supporting the diagnosis of stiff-person syndrome plus or progressive encephalomyelitis with rigidity and myoclonus.

DISCUSSION

SPS is clinically characterized by acute to subacute onset of fluctuating muscle rigidity and painful spasms that can be triggered by sensory stimuli, stress, and movement (2,11). This is thought to be caused by decreased γ-aminobutyric acid (GABA) signaling leading to continuous motor activity and agonist-

antagonistic muscle co-contraction that can be confirmed by EMG (1). In the classical form, disease onset is insidious and begins in the axial region, typically lumbar, with progression to proximal extremities (11). In less common forms, the symptoms may be limited to a single limb or affect the entire body known as stiff-person syndrome plus or progressive encephalomyelitis with rigidity and myoclonus (PERM) (9). There is often an association with type 1 diabetes (9).

In two stiff-person syndrome cohorts from tertiary American academic centers, 8 pediatric patients (5% of cases) were observed over 29 years and 6 patients (4.5% of cases) over 5 years (4,14). The average age of onset was 11 and 13 years old, respectively. Combining studies, 12/14 patients were positive for anti-GAD antibodies (4,14). Other immunoglobulin G (IgG) antibodies that are less often associated are glycine receptor α1-subunit, amphiphysin, and gephyrin—of which, the latter two can be paraneoplastic (3,8,13). In the two case series aforementioned, several patients were diagnosed in adulthood, and the average times until diagnosis were 15 years and 7 years (4,14). In our case, the diagnosis was made within 15 days of presentation.

Patients can often be responsive to GABAergic medications such as diazepam and baclofen; however, for severe and refractory cases, patients may derive greater therapeutic benefit with intravenous immunoglobulin (IVIG) (5,12). Aided by diazepam, baclofen and supportive care, our patient regained the ability to ambulate and returned to her cognitive baseline over the following three weeks. IVIG, administered acutely or on a monthly basis, was unavailable due to the patient's economic constraints and challenges in accessing the health facility. Several weeks after discharge, she was readmitted to the hospital with recrudescence of her symptoms.

CONCLUSION

This case illustrates a rare initial presentation of pediatric SPS in a resource-limited setting and the evaluation that led to a high clinical suspicion with a relatively rapid diagnosis compared to other published cases. The failure to provide immunotherapy, the current standard of care for SPS, and the patient's recrudescence of symptoms shortly after discharge, underscore the need to build care systems that can address the longitudinal care needs of patients with neurologic diseases in resource-limited settings (7,10).

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