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CASE PRESENTATION

Myastheniform syndrome secondary to thymoma. Case report

Síndrome miasteniforme secundario a un timoma. Presentación de un caso

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ABSTRACT

Introduction: thymoma represents approximately 20 % of mediastinal neoplasms. This tumor is relatively uncommon in the general population, and its study is of great importance due to its paraneoplastic manifestations; like the case in question (myastheniform syndrome). The majority of patients with thymoma are between 40 and 60 years of age, highlighting the novelty of this case with diagnosis at an early age. There are no known risk factors, although there is a strong association with myasthenia gravis and other paraneoplastic syndromes. Myasthenia gravis is the most common disorder associated with thymoma.

Objective: to describe the case of a young man with myastheniform syndrome secondary to a thymoma at the Military Hospital of Matanzas.

Case presentation: 18-year-old male patient with a history of health, who comes to the consultation because, after pharyngotonsillitis, he presents with difficulty swallowing, easy fatigue, with decreased muscle strength, with marked signs of weakness, upon physical examination neurological system, responds to the interrogation with a hidden voice "Positive" Barré and Minganzini maneuver towards the left upper limb and right lower limb. Left patellar osteotendinous hyporeflexia. Babinski and positive substitutes in lower limbs. Left orbicularis paralysis and presence of bilateral horizontal nystagmus. He is diagnosed with a myastheniform syndrome, the cause being detected as the presence of a thymoma by chest tomography. Thymectomy is performed and the patient's recovery is evident.

Conclusions: myastheniform syndrome as a form of presentation of a thymoma is rare at an early age, so a timely diagnosis favors the recovery of these patients.

Keywords: Muscle weakness; Mediastinoscopy; Myasthenia gravis; Timoma

RESUMEN

Introducción: el timoma representa aproximadamente el 20 % de las neoplasias mediastínicas. Este tumor es relativamente infrecuente en la población general, y su estudio es de gran importancia por sus manifestaciones paraneoplásicas; como el caso en cuestión (síndrome

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miasteniforme). La mayoría de los pacientes con timoma tienen entre 40 y 60 años de edad, resaltando la novedad de este caso con diagnóstico en edad temprana. No se conocen factores de riesgo, aunque existe una fuerte asociación con la miastenia gravis y otros síndromes paraneoplásicos. La miastenia gravis es el trastorno más común asociado al timoma.

Objetivo: describir el caso de un joven con síndrome miasteniforme secundario a un timoma en el Hospital Militar de Matanzas.

Presentación de caso: paciente masculino de 18 años con antecedentes de salud, que acude a consulta por presentar, después de una faringoamigdalitis, dificultad para tragar, cansancio fácil, con disminución de la fuerza muscular, con cuadro de decaimiento marcado, al examen físico del sistema neurológico, al interrogatorio responde con voz escondida. Maniobra de Barré y Minganzini "positiva" hacia miembro superior izquierdo y miembro inferior derecho. Hiporreflexia osteotendinosa rotuliana izquierda. Babinski y sucedáneos positivos en miembros inferiores. Parálisis del orbicular izquierdo y presencia de nistagmo horizontal bilateral. Es diagnosticado con un síndrome miasteniforme, detectándose como causa la presencia de un timoma por tomografía de tórax. Se realiza timectomía y se evidencia recuperación del paciente.

Conclusiones: el síndrome miasteniforme como forma de presentación de un timoma es poco frecuente en edad temprana, por lo que un diagnóstico oportuno favorece la recuperación de estos pacientes.

Palabras Clave: Debilidad muscular; Mediastinoscopia; Miastenia gravis; Timoma

INTRODUCTION

Lambert-Eaton myastheniform syndrome (LEMS) is a paraneoplastic (T-LEMS) or idiopathic autoimmune pathology (NT-LEMS) caused by autoantibodies against presynaptic voltage-gated calcium channels of the neuromuscular junction. Early diagnosis based on clinical findings, neurophysiological studies and dosage of antibody titers in serum allows for early initiation of symptomatic treatment and oncological search. [1]

The 60 % of patients with LEMS have an underlying oncological process, with small cell lung cancer (SCLC) being the most frequently associated. LEMS is

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the third most common paraneoplastic syndrome, only behind the syndrome of inappropriate ADH secretion and Cushing's syndrome. (2) Its presentation usually precedes the diagnosis of the tumor by months, so it is essential to recognize this rare entity, with Primary Care as the area in which patients usually consult first. (1,2)

The diagnosis of this entity is based on clinical signs and symptoms, neurophysiological studies and the dosage of antibody titers in the serum. The classic clinical triad (muscle weakness, hyporeflexia/arreflexia and autonomic disorders) may not be observed in all patients, as it presents a gradual onset and insidious installation. (3)

In most cases, weakness begins in the lower limbs. Autonomic involvement is rarely reported by the patient themselves, it does not occur in isolation, and is found in 37-96 % of patients (the prevalence increases with the evolution of the disease). (3,4)

It can occur at any age, from birth to old age, although juvenile forms are rare (except in Asia). Epidemiological studies consistently show a bimodal incidence in women, with a peak between 20 and 40 years and another between 60 and 80 years, while in men it predominates at advanced ages with a sustained increase from 60 years. (4)

The relationship between the thymus gland and myasthenia gravis has not been fully understood. Scientists believe it is possible that the thymus gland generates incorrect instructions for the production of acetylcholine receptor antibodies, thus creating the perfect environment for a disorder in neuromuscular transmission. In the thymus there are some myoepithelial cells that have acetylcholine receptors on the surface and immunological contact with altered T lymphocytes generates, through plasmacytes, the production of antibodies against the acetylcholine receptor, although the trigger of this response is also not known. (5)

Taking into account the above, the authors aim to describe the case of a young man with myastheniform syndrome secondary to a thymoma at the Military Hospital of Matanzas.

CASE PRESENTATION

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Male patient, 18 years old, with no known previous personal pathological history, no toxic habits reported, with a family history (father) of high blood pressure, comes to the consultation stating that approximately 2 months ago he had a pharyngeal infection for which he underwent treatment with Cephalexin (cap. 500 mg), and subsequently began to have difficulty swallowing. Furthermore, he showed easy fatigue, with a decrease in muscle strength in all four limbs, but more accentuated towards the upper limbs. He is evaluated by several specialties in the health area, indicating a computerized axial tomography (CAT) of the spine where pathologies at that level are ruled out.

During the visit of the mobile commission to his unit, his primary doctor presents the case and the following is detected during the physical examination:

Neurological physical examination: conscious patient, oriented in time, space and person who responds to the interrogation with a hidden voice. Positive Barré and Minganzini maneuver towards the left upper limb and right lower limb. Left patellar osteotendinous hyporeflexia. Babinski and positive substitutes in lower limbs. Left orbicularis paralysis. Presence of bilateral horizontal nystagmus.

Given these findings during the physical examination, it was decided to transfer him to the Military Hospital of Matanzas with a diagnosis of myastheniform syndrome, where he was admitted to the intermediate therapy service and upon receiving the results of a skull CT scan performed at the Faustino Pérez Hospital, which showed no alterations, he was proceeded to perform a lumbar puncture (which was negative); Therefore, the patient is transferred to an open room to continue studies.

During admission, the complementary tests performed, such as blood tests and serological tests, were negative and the results were within the normal range; the Neostigmine test was positive, which reinforces the diagnosis of myasthenia gravis along with the result of the chest CT scan that reported that at the level of the mediastinum there is an occupying process in the prevascular space, hypodense with well-defined semilobulated contours that corresponds to a thymoma (see figure 1); Therefore, given this finding, the neurological symptoms become secondary to a paraneoplastic ion of said tumor process. Treatment was imposed with Piridostigminaexpresi (60 mg tablet), one tablet every eight hours, and absolute physical rest.

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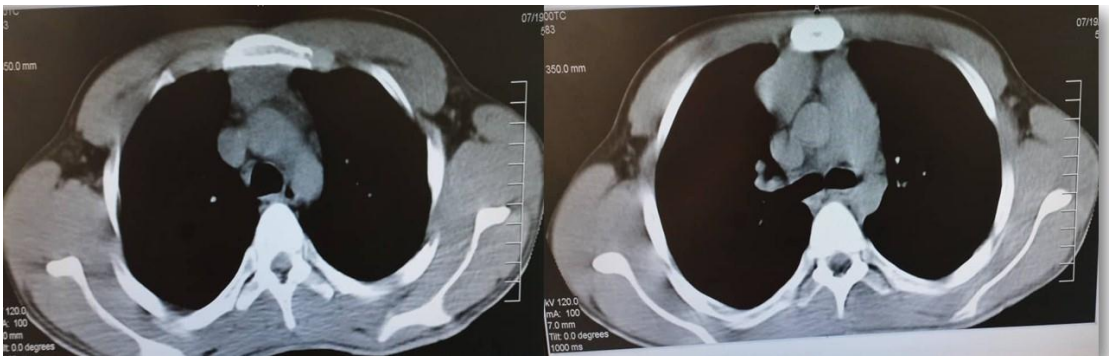

Figure 1. Tomography performed upon diagnosis of the patient, where the presence of Thymoma is visualized.

After twenty-eight days of hospital stay "with a favorable clinical evolution," it was decided to transfer to the Carlos Juan Finlay Central Hospital where a mediastinoscopy and removal of the thymoma were performed, finding a favorable evolution and all neurological symptoms disappearing, which confirms the hypothesis initial diagnosis.

DISCUSSION

In case of muscle weakness, after excluding pharmacological (corticosteroids) and endocrine causes (such as Cushing's syndrome and thyroid diseases), a differential diagnosis should be made between neurological, myopathic and motor plate disorders.

While neuropathies are characterized by distal muscle weakness and amyotrophy, myopathies and motor plate disorders present with proximal weakness which, in the case of a disorder such as LEMS, is also accompanied by fatigue.

LEMS is characterized by proximal muscle weakness in the extremities that progresses in the caudo-cranial direction, dysautonomia and areflexia. The differential diagnosis should be established mainly with myasthenia gravis (early involvement of the oculobulbar muscles, craniocaudal progression, without areflexia or dysautonomia) and botulism (areflexia, dysautonomia and evolution to bulbar and flaccid paralysis). [6]

MG is not a common disorder but, once it manifests itself in the individual, it seriously affects the individual's quality of life, so it is necessary to know the characteristics and particularities that characterize this disorder. [2] Although more than half of the people who suffer ocular symptoms (diplopia or ptosis),

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approximately 50 % of them will eventually develop the generalized form [4], coinciding with what was previously stated by García Estévez [3]. The case in question begins with ocular manifestations until reaching consultation with symptoms and signs characteristic of generalized MG.

Conversely, people who do not present ocular manifestations at the beginning will develop them over the years. Muscle fatigue and weakness is characterized by a worsening of the force of muscle contraction. [7]

The case in question has the novelty of being among the least frequent statistics of presentation of this pathology according to the studies consulted, as stated by Aguirre Florencia et al., who highlight the bimodal distribution. Where it is possible to differentiate a first peak of incidence is in those under 40 years of age, with a clear female predominance, and a second peak in those over 40 years of age, with greater male representation that deepens after 60 years of age. [8]

The case presented coincides with the most frequent symptoms and signs described in the reviewed articles. These were eyelid ptosis and upper limb weakness, followed by lower limb weakness. The duration of symptoms until diagnosis was greater than three months. [9]

The treatment applied in this patient was carried out according to established protocols, where it is proposed that it is made up of two fundamental therapeutic pillars: symptomatic treatment and immunological/immunomodulatory treatment.

For symptomatic treatment, anticholinesterase agents (Pyridostigmine) are used. In general, this drug is used orally and each patient must know well its mechanism of action and the possible adverse effects in order to be able to make the dose more flexible depending on the state of muscle fatigue they present. The most common secondary symptoms are abdominal pain and diarrhea, due to excess cholinergic activity. Rarely, they can achieve relief of symptoms and myasthenia may become refractory to these drugs. [8,9]

Immunological/immunomodulatory treatment consists of immunosuppressants and thymectomy. The most commonly used immunosuppressants are corticosteroids and azathioprine. Corticosteroids (prednisone) are the first-line drugs, and their use is important in patients

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with bulbar and respiratory involvement. In the long term they are not recommended due to their side effects, so they are replaced by azathioprine. Azathioprine is used to stabilize the patient and thus be able to progressively reduce the dose of corticosteroids. (9)

It should be remembered that the diagnostic performance of this pathology has been increasing since the 1980s due to better recognition of symptoms and early diagnosis, as circulating antibodies can be measured. Furthermore, the quality of life of these patients has improved thanks to new treatment methods and early diagnosis. (7,8)

In this case presentation, the authors highlight the clinical practice at diagnosis, the follow-up of these patients and the use of the Pyridostigmine test as an effective method in the event of clinical suspicion of this entity.

CONCLUSIONS

Myastheniform syndrome as a form of presentation of a thymoma is rare at an early age, so a timely diagnosis favors the recovery of these patients. The importance of the correct use of the clinical method and the development of a detailed clinical history is highlighted.

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STATEMENT OF AUTHORSHIP

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YSR: conceptualization, research, methodology, project administration, validation, writing the original draft, review, editing.

LAPR: conceptualization, investigation, methodology, validation, writing of the original draft, review.

JADP: conceptualization, investigation, methodology, validation, writing of the original draft, review.

JMHH: conceptualization, investigation, methodology, validation, writing of the original draft, review.

CONFLICT OF INTERESTS

The authors declare that there are no conflicts of interest.

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