archivos de PATOLOGÍA
ISSN: 2660-7611

GOOD SYNDROME PRESENTING WITH PROGRESSIVE MUSCLE WEAKNESS FOLLOWING THYMECTOMY.

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Submitted: 19 November 2024 **Accepted:** 20 December 2024 **Published:** 8 January 2025
DOI: 10.17811/ap.v4i3.22228

ABSTRACT

We present the case of a patient with Good syndrome who developed progressive muscle weakness following thymectomy. Muscle biopsy revealed criteria consistent with inclusion body myositis. Throughout her illness, she developed pure red cell aplasia, respiratory failure, and recurrent respiratory infections. She was treated with intravenous immunoglobulins, pyridostigmine, and cyclosporine A, achieving stability in her hematologic condition but without improvement in her myopathic symptoms. This case highlights the potential role of the thymus in the pathogenesis of autoimmune manifestations.

Keywords: Good syndrome, thymoma, inclusion body myopathy, pure red cell aplasia.
Palabras clave: Síndrome de Good, timoma, miopatía por cuerpos de inclusión, aplasia pura de células rojas

Abbreviations:
GS: Good Syndrome
IVIG: intravenous immunoglobulins
ICM: inclusion body myositis
MG: myasthenia gravis
PCRA: pure red cell aplasia

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INTRODUCTION

Good Syndrome (GS) is characterized by the association of primary immunodeficiency, absence of B cells, hypogammaglobulinemia, defects in cell-mediated immunity, and CD4 lymphocytopenia in the presence of a thymoma (1). We present the clinical case of a patient with GS who developed multiple autoimmune complications.

CASE PRESENTATION

A 73-year-old woman presented with recurrent respiratory infections. Laboratory studies revealed decreased levels of immunoglobulin G (3.09 g/L), B lymphocytes (9 cells/µL), Natural Killer lymphocytes (45 cells/µL), and switched memory lymphocytes (2% of B lymphocytes). Radiological imaging identified a mediastinal mass, and after thymectomy, a stage I Masaoka and WHO type B2 thymoma was confirmed, establishing the diagnosis of Good Syndrome (GS). Treatment with intravenous immunoglobulin (IVIG) was initiated at a single dose of 15 grams every 28 days.

Ten months later, she was readmitted for superinfected bronchiectasis with isolates of S. pneumoniae, P. jirovecii, and CMV, requiring invasive mechanical ventilation. This was complicated by progressive, non-painful muscle weakness that had begun after thymectomy.

Upon clinical improvement, examination revealed cephalic anteflexion due to cervical extensor muscle weakness, proximal weakness in the upper limbs with preserved distal strength, and associated weakness in knee extension comparable to that in hip flexion. Laboratory tests indicated normocytic, normochromic anemia (hemoglobin 8.5 g/dL). Tests for creatine kinase, anti-acetylcholine receptor, anti-MuSK, anti-NT5C1A, and anti-myositis antibodies were all within normal ranges or negative.

Electroneuromyography revealed subacute inflammatory myopathy with a proximal predominance. Pathologic analysis of the quadriceps showed findings consistent with inclusion body myositis (IBM). Bone marrow biopsy displayed normal cellularity in the myeloid and megakaryocyte series but no erythroid series representation.

Therapy with pyridostigmine, cyclosporine A, and IVIG at 20 g every 28 days was initiated, resulting in hematologic stability but no improvement in muscle weakness. Despite these treatments, the patient died five years after diagnosis due to intestinal obstruction, and no autopsy was performed.

DISCUSSION

The thymus plays a key role in the development of the adaptive immune system, particularly in T lymphocyte maturation, which may explain the occurrence of autoimmune complications and paraneoplastic syndromes (2). Autoimmune conditions associated with thymoma include myasthenia gravis (MG), pure red cell aplasia (PRCA), and immunodeficiency. Autoimmune manifestations have been described in 3.8% of a series of 807 patients with thymoma (3).

Only a small percentage (6–10%) of patients with thymoma develop Good Syndrome (GS). Typically, thymoma is diagnosed before GS. No specific histopathologic subtype of thymoma has been predominantly associated with this immunodeficiency (4). The immune dysregulation present in GS establishes a link between thymoma and the characteristic manifestations of immunodeficiency, with the generation of specific antibodies potentially playing a pathogenic role in the development of

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ISSN: 2660-7611

autoimmune manifestations and hematologic abnormalities (4,5).
Acquired PRCA is associated with thymoma and other neoplasms and may also be seen in autoimmune diseases such as systemic lupus erythematosus and GS. The association of thymoma, MG, and inflammatory myopathy (IM) is reported in up to 5% of patients (6). We identified only two cases of IM, specifically dermatomyositis and polymyositis, in patients with GS (7,8). No references were found in the literature linking thymoma, GS, and inclusion body myositis (IBM). IBM as paraneoplastic syndrome is rare, with hematologic malignancies being the most frequent association. The pathogenesis of IBM appears to have both autoimmune and degenerative origins. We propose that the immune dysregulation induced by thymoma is responsible for the development of IBM in this context (9,10).

CONCLUSION

Immune dysregulation in GS establishes a link between thymoma and immunodeficiency manifestations, with unusual associations including GS, IBM, and PRCA.

ETHICAL CONSIDERATIONS:

The images and clinical data published have the signed written consent of the deceased patient's daughter. The authors are in possession of this written consent. They declare that this article does not contain any personal information that could be used to identify the patient.

CONFLICT OF INTEREST:

The authors declare that they have no conflict of interest in the conduct of this work.

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IMAGES:

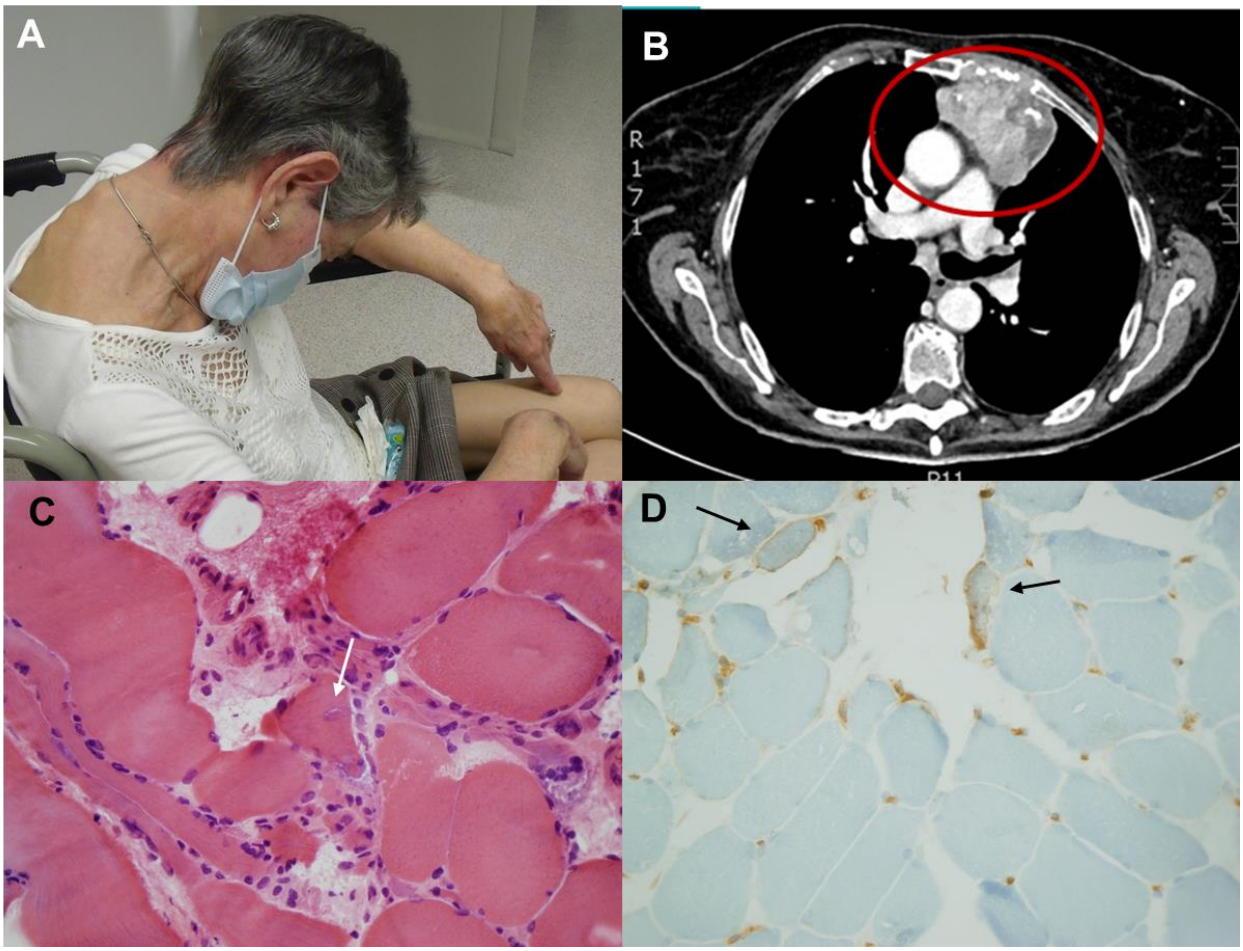

Figure 1: A) Weakness of neck extensor muscles with clinical sign of 'dropped head'. B) Chest CT scan showing heterogeneous lesion (circle) in anterior mediastinum compatible with thymoma. C and D: Microscopic images of muscle biopsy. C) Muscle fibers show irregular shapes, size variations, intense atrophy and alteration of their normal architecture, some of which show rimmed vacuoles (arrow). Regenerative changes are also observed (H&E; magnification x400).
D) Overexpression of MHC-I in muscle fibers (arrows) (magnification x400).

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ISSN: 2660-7611

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