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Case Report

Thymic Malignancy Presenting with Myasthenia Gravis in a 29-Year-Old Female

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Abstract

Thymic malignancies are rare anterior mediastinal tumors, often associated with autoimmune disorders such as myasthenia gravis (MG).Myasthenia gravis (MG) is an autoimmune disorder marked by fluctuating muscle weakness due to impaired neuromuscular transmission as a result of Acetyl choline receptor antibodies.We report a case of a 29-year-old female who presented with progressive bulbar and ocular symptoms, later found to have a thymoma. This case underscores the importance of considering thymic neoplasms in young patients with neuromuscular symptoms and highlights the diagnostic and therapeutic approach and role of thymectomy in MG associated with thymoma.

Keywords

Thymoma, Myasthenia gravis, Surgery, Radiotherapy

Introduction:

Thymoma is a neoplasm of the thymus gland originating from its epithelial tissue. Thymomas are the most common neoplasm of the anterior mediastinum in adults and the most common tumor of the thymus (1). They account for approximately fifty percent of the anterior mediastinal masses. They have frequent association with various paraneoplastic syndromes (PNS). The most common PNS associated with thymoma is myasthenia gravis (MG). Patients of thymoma with MG have a favourable outcome due to early disclosure of the disease. Histologically they are classified into five subtypes and Masaoka-Koga staging system is used for staging. Surgery, chemotherapy and radiotherapy play an important role along with anti-myasthenia drugs (2).While indolent in nature, thymomas can become invasive. Metastatic spread is to the pleura, pericardium, or diaphragm, while spread to extra thoracic sites are uncommon (3). Timely recognition, surgical resection, and appropriate adjunctive therapy are essential to improve prognosis.

Myasthenia gravis is commonly associated with antibodies against the acetylcholine receptor (AChR), anti-muscle-specific kinase antibodies and, in some cases, a thymoma. Early diagnosis and treatment are critical to prevent complications such as myasthenic crisis. This report discusses a case with classical ocular and bulbar symptoms, confirmed AChR antibodies, and a thymic neoplasm, managed successfully with surgical, medical and radio therapy.

Case Presentation

A 29-year-old female presented with a 6-month history of dysphagia to solids towards latter part of feedings, nasal regurgitation, and nasal speech. She also reported drooping of eyelids, diplopia, and generalized fatigue with symptoms worsening in the evening. Over the preceding two days, she developed increasing shortness of breath. She was having loss of appetite and loss of weight for last 6 months. There was no joint pain, morning stiffness or loss of hair, oral ulcers. Except for the history of menorrhagia, there were no other hypothyroid symptoms. Thyroid disease was reported in first-degree relative.

Examination findings included, Right > left ptosis, fatigability, positive lid twitch, peek and curtain signs. Single breath count of 12 which improved to 40 after treatment. Rest of the examination was normal

Blood investigations revealed an Iron deficiency anemia (Haemoglobin of 8.7 g/dL with Mean Corpuscular Volume 74 fL and Serum Ferritin 12 ng/ml), normal C Reactive Protein (CRP) (13.8 mg/L) and elevated Erythrocyte sedimentation rate (ESR - 56 Mm in

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1st hour).She had Positive acetylcholine receptor antibodies (>8) and negative anti-muscle-specific kinase antibodies .

Chest X-ray revealed a mediastinal widening and Contrast-Enhanced Computed Tomography (CECT) chest showed a well-defined mixed-density anterior mediastinal mass. (Figure 1)

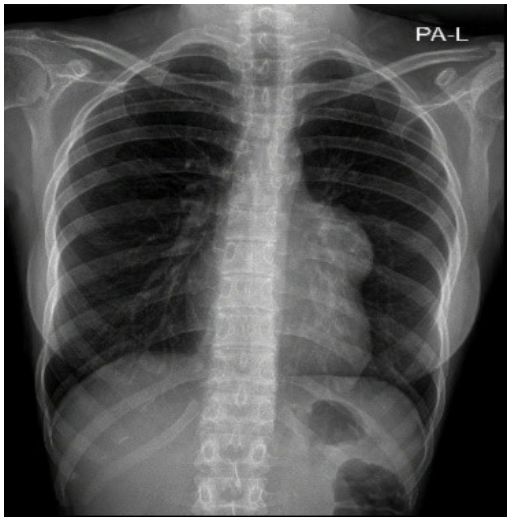

Figure 1: Chest X-ray of the patient

She was initiated on neostigmine and Open thymectomy was performed. Tumour in left lower part of thymus was adherent to left lobe of lung and pericardium. Left side of thymus was dissected together with small part of pericardium and complete excision of thymoma was done. (Figure 2)

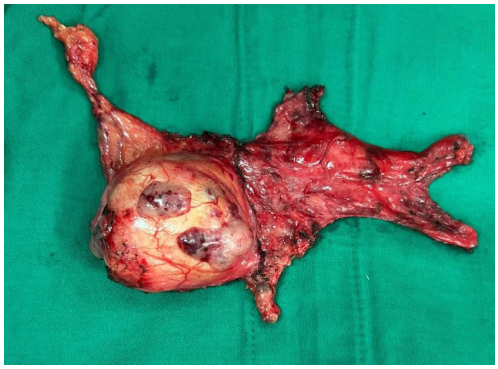

Figure 2: Tumour in left lower part of thymus

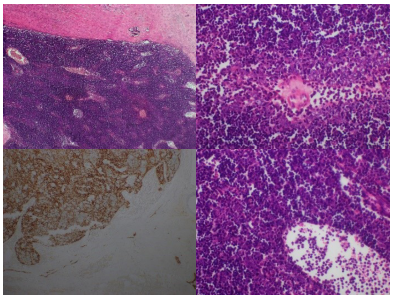

Figure 3: Histology appearance

Histopathology confirmed thymoma, with features suggestive of early local invasion (Masaoka-Koga Stage IIb thymoma). (Figure 3) Postoperative radiotherapy was initiated. Anemia was treated with iron and folate supplementation.

The patient showed clinical improvement in MG symptoms with neostigmine. Even in post-thymectomy, her respiratory symptoms, ptosis and diplopia were stable only while continuing neostigmine and immunosuppressive. We were unable to tail off her oral medications. Her neuromuscular strength and respiratory function stabilized with ongoing medical management.

Discussion

Thymic epithelial tumors can manifest subtly with autoimmune features, often delaying diagnosis. In this case, Myasthenia gravis symptoms prompted imaging that led to the detection of a thymoma.

Thymic carcinoma exhibits aggressive behavior and complete resection is the mainstay of treatment, and partial resection appears to be less beneficial. Preoperative chemotherapy increases the rate of complete resection and survival in patients with a stage III or IVa thymoma (2). Total resection followed by radiation therapy is the treatment of choice for all thymomas, except stage IA tumors, which is only being managed surgically. Chemotherapy can improve the outcome of invasive Masaoka stage III and IV thymomas or recurrent thymomas. Only platinum-containing regimens show consistent efficacy (3).

Masaoka-Koga Stage IIb thymomas, though encapsulated, may infiltrate surrounding fat and require complete resection and adjuvant therapy. (4)

In our case, tumour in left lower part of thymus was adherent to left lobe of lung and pericardium. So, total thymectomy with dissection of small part of pericardium which was adherent to thymoma was performed.

Prognosis depends on stage, completeness of resection, and histologic subtype. As it's a Masaoka-Koga Stage IIb thymoma with local invasion, radiotherapy was given to our patient.

Presence of a thymoma should not necessarily be viewed as a negative prognostic factor regarding recovery from myasthenia gravis (5,6).But here we present a case which required continued medical management for MG even after total thymectomy.

This case illustrates a presentation of Myasthenia gravis involving ocular and bulbar muscles, with an underlying thymoma. Myasthenia gravis should be considered in young adults with progressive ptosis, diplopia, and dysphagia. Thymectomy is indicated in thymoma-associated Myasthenia gravis and may improve symptoms or alter disease course. Early diagnosis, supportive care, and long-term immunological follow-up are crucial in the management.

Conclusion

In young patients presenting with fluctuating bulbar and ocular symptoms, myasthenia gravis should be a key differential. Thymoma should be actively investigated, and a multidisciplinary approach is essential for optimal outcomes. Thymic malignancy should be considered even in young adults presenting with myasthenic features. Early imaging, surgical management, and appropriate adjuvant therapy are vital for a favorable outcome.

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