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CASE REPORT

Unexpected Preoperative Regression of a Thymoma: A Case Report

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ABSTRACT

We report a case of unexpected spontaneous regression of thymoma in a 44-year-old patient, referred with clinical, biological, and electrophysiological findings of Myasthenia gravis. The patient was stable on synthetic Acetylcholesterase inhibitors, immunosuppressants, and corticosteroids.

A chest computed tomography (January 2020) revealed a well-defined tumor in the anterior mediastinum. Surgical removal was decided. Unfortunately, because of the covid 19 pandemic, the surgical activity of the department of thoracic surgery was suspended. The patient was discharged and re-admitted nine months later. A new chest computed tomography (September 2020) was performed, revealing a net regression of the anterior mediastinal tumor. The long axis of the tumor decreased from 97mm to 28mm.

A Video-assisted thoracoscopic thymothymectomy was performed. The histopathological study of the specimen revealed a Thymoma B3, according to the world health organization (WHO) classification, without any necrosis, hemorrhagic or sclerotic cells.

The spontaneous regression of thymic epithelial tumors is reported as rare. Surgical excision should be performed, even if tumor volume regression is observed. After surgical resection, the anatomopathological studies of the specimens could sometimes find some elements that explain the regression of these tumors. In our case, we suppose that the intake of corticosteroids by our patient could have played a role in this tumor regression.

KEYWORDS: Spontaneous, Regression, Thymoma, Myasthenia gravis, Thymothymectomy.

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INTRODUCTION

Thymoma is a rare thymus epithelial tumor but the most common malignancy in the anterior mediastinum [1]. It could be associated with paraneoplastic syndrome, most commonly myasthenia gravis. The surgical excision is the keystone of therapy.

The spontaneous regression of a tumor, whatever its origin or location, is defined as a temporary or permanent, total or partial disappearance of this tumor without any therapy or with no specific treatment. [2]

We aim to present this case of spectacular spontaneous thymoma regression and discuss it with other cases reported in the literature.

CASE REPORT

A 44 years old male was followed for autoimmune myasthenia for nine months. The patient initially complained of mild bilateral ptosis and generalized weakness. Neurological examination showed that weakness was prevalent in the arms and legs proximal muscles. The blood testing of acetylcholinesterase receptor antibodies was positive, and the EMG revealed a postsynaptic bloc.

The patient has stabilized with Pyridostigmine 60 mg 3 times a day, Azathioprine 50 mg/day, and 20 mg/Day of corticosteroids.

A chest CT dated January 2020 showed an anterior mediastinal process with a regular, thickened wall and slightly enhanced after injection of contrast product. This process was in contact with the sternum from the front; and behind with the right atrium, ascending aorta, and superior vena cava. It remained separated from all those elements

by a fatty border, sized 42*97*64mm. Surgical management of this tumor was decided, and the patient was admitted to the thoracic surgery department in march 2020. Unfortunately, Because of the covid 19 pandemic, our non-urgent surgical activity was suspended. The patient was discharged home with no prescribed neoadjuvant therapy. He was re-admitted in September 2020. A second chest CT was carried out and revealed a regression of the tumor from 42*97*64mm to 28*15*12mm. During these nine-month, our patient did not receive any other medical treatment other than the one his taken for myasthenia gravis.

Given the myasthenia gravis condition and the regression of the tumor size on the last chest CT, a video thoracoscopic approach for thymothymectomy was performed.

The histopathological study of the specimen revealed a Thymoma B3 according to the World Health Organization (WHO) Classification, without any findings of necrosis, hemorrhagic or sclérotic cells.

The patient was discharged 48 hours after surgery, with good progress to date.

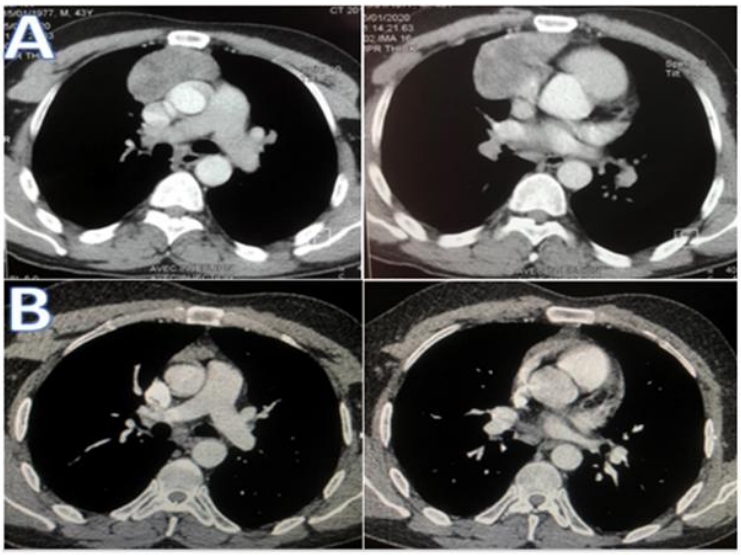

Fig. 1 : A-Chest computed tomography (CT) on the first admission shows a large mass 42*97*64mm
B-CT on the second admission shows regression of the mass to 28*15*12mm

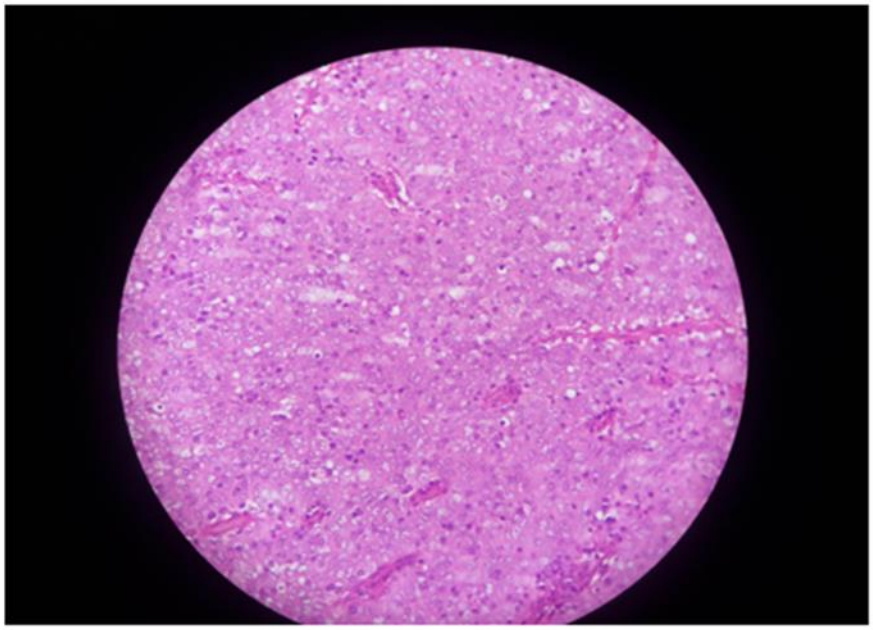

Fig.2: microscopic view showing proliferation of lymphocyte-poor and large cohesive epithelial cells with abundant eosinophilic cytoplasm. B3 thymoma (HES x20).

DISCUSSION

Spontaneous tumor regression (SR) is a phenomenon that has been observed for hundreds if not thousands of years [1].

Cole reported that SR of cancer has an estimated incidence of less than 1 in 60 000 to 100 000 cases. More than half of the cases are renal cell cancer, neuroblastoma, malignant melanoma, and choriocarcinoma [2].

Tumor regression is due to necrosis, apoptosis, or rupture of the tumor; two basic biological pathways mediate spontaneous regression of malignancies: differentiation of malignant cells to a normal phenotype and cell death either by apoptosis or inflammatory necrosis [3].

Spontaneous regression of a thymic epithelial tumor is a phenomenon reported as rare [4].

Although the mechanisms underlying the SR of thymomas are still unclear, Chiyotanda and al. Published a case where the occlusion of the feeding artery by organized thrombus was found by pathology, and it was considered the cause of coagulative necrosis [4].

Most thymomas with spontaneous regression are encapsulated, and their prognoses are good [5]. Immunologic factors have been described as playing a significant role [6].

The rate of spontaneous regressions of thymic tumors remains unknown because surgical resection is usually performed as soon as possible.

There is no link between the histological nature of the thymic tumor and its regression; in the literature, several cases of spontaneous regression, even of invasive thymoma, are described. This phenomenon is generally discovered by chance. Medical and/or surgical management is still necessary to manage thymic tumors. An anatomopathological study should be performed on all the specimens to identify any potential cell modifications. Usually, spontaneous regression is described when the patient didn't undergo any therapy. Still, in this observation, the patient has been diagnosed with myasthenia gravis, and the use of corticosteroids was necessary to control his underlying disease. As far as we know, there is no case reported of thymoma regression under this therapy. It is believed that corticotherapy may have played a role in this tumor regression. The thymic tumor may have reacted as, for example, a lymphoma and regressed under corticoid. However, this hypothesis should be clarified in a collection of similar cases.

CONCLUSION

The frequency of this event is low, spontaneous regression does not exclude malignancy, and surgical intervention should be considered for the residual lesion. The occurrence of immunological, inflammatory, and vascular phenomena could be the cause. A study including several cases may allow for a better understanding of those circumstances.

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None.

AUTHORS' CONTRIBUTIONS

The participation of each author corresponds to the criteria of authorship and contributorship emphasized in the Recommendations for the Conduct, Reporting, Editing, and Publication of Scholarly work in Medical Journals of the International Committee of Medical Journal Editors. Indeed, all the authors have actively participated in the redaction, the revision of the manuscript, and provided approval for this final revised version.

COMPETING INTERESTS

The authors declare no competing interests with this case.

PATIENT CONSENT

Written informed consent was obtained from the patient for the publication of this case report.

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