Stiff Man Syndrome with Invasive Thymic Carcinoma

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Abstract

Stiff man syndrome is a rare disease characterized by painful chronic spasms in the muscle and skeletal system. This syndrome is an autoimmune neurologic disorder which is associated with thymoma. We treated a 32-year-old male patient with a type C thymoma (based on the World Health Organization classification) who had stiff man syndrome. The patient underwent an extended thymectomy which brought about alleviation of his symptoms.

Keywords: Autoimmune disease, stiff man syndrome, thymic tumor, thymoma

Case Report

A 32-year-old male was admitted to our hospital in February 2009 with symptoms of continuous muscle stiffness and painful muscle spasms, which began as tightness in the lower limbs and deteriorated into muscle stiffness of the trunk and upper limbs five months after the onset. He had no history of diabetes, injuries, or epilepsy. A laboratory examination and tumor markers also revealed nothing abnormal. No abnormality was noticed using thoracic and cervical spinal magnetic resonance imaging (MRI). A computed tomography (CT) of the chest was conducted, which revealed an anterior mediastinal tumor that was considered to be a thymoma (Figure 1). It was proposed that his symptoms may have been caused by a paraneoplastic neurologic syndrome associated with a thymoma. A laboratory examination revealed the type C thymoma (thymic carcinoma), poorly differentiated thymic carcinoma according to the World Health Organization (WHO) classification with invasion of the lung and the pericardium. The postoperative course was uneventful and the patient was able to recover muscle strength enabling him to maintain a standing or sitting position. Ten days after the operation he was discharged from the hospital and was referred to an oncologist. In a six-month follow-up the patient was in a good condition.

Discussion

Stiff man syndrome is a rare neurologic syndrome. In some cases, this syndrome is seen to be frequently in association with other autoimmune diseases, such as insulin-dependent diabetes mellitus, Graves disease, Hashimoto thyroiditis, and pernicious anemia, while in others, the disorder reveals a paraneoplastic feature associated with breast cancer, mediastinal tumors, thymoma, small cell lung cancer, Hodgkin disease, and colon cancer.

According to previous studies, anti-GAD antibody, associated with autoimmune disease, was positive in 60% of cases with SMS. Also in antiamphiphysin antibody was often detected in paraneoplastic syndrome of tymoma. Further, the anti-GAD antibody was positive in two out of four cases presented with thymoma, but antiampihphysin was negative. Thymectomy was conducted, and the histologic subtypes of the three resected thymomas included one cortical and two peridominantly lymphocytic types.

These histologic thymomas were considered B1 or B2 tumors based on WHO histologic classification. In two out of four patients, myasthenia gravis was also found and in one case, the anti-achr antibody was positive.

According to Nicolas and colleagues, the case presented with serologically negative MG with positive EMG findings. These patients responded effectively to diazepam as it promotes the effect of endogenously released GABA on cell receptors. Other effective medications are clonazepam (Klonapin), oral and intrathecal baclofen, and sodium valproate (Depakene, Depakote, and Depacon)
intravenous immunoglobulins have also been used successfully in this syndrome.\(^2\)

Parathymic syndrome was found in 40% of cases with thymoma and two or more parathymic syndromes were also found in 1/3rd of this group.\(^1\) Neurologic syndrome was infrequently observed in cases presented with thymoma.\(^3,4,7\) Seven of these cases were identified in the article by Nicholas.\(^6\)

According to previous studies, six cases have been reported with a thymoma.\(^4\) Four patients out of these six cases were males and two were females with a mean age of 52 years. According to WHO histologic classification criteria, three patients were observed to have type B1 or B2, one was type AB and also type of thymoma was seen in the other two patients.\(^5\) Five cases underwent thymectomy of whom, four responded positively to it and one failed. In case of positive respond to thymectomy the symptoms were resolved and serum titer of GAD returned to normal. If thymectomy was not effective Multiple plasmaphresis, baclofen, and clonidin can be useful for relieving the symptoms.\(^4,8\)

Malignant thymoma may have association with paraneoplastic and neurologic syndromes including muscular rigidity and cramps. Further, SMS is considered to be associated with autoimmune disease. Literature shows that thymectomy can be an effective treatment for SMS with a thymoma.\(^2,3,7\)

The patient in this report was examined thoroughly before treatment of thymectomy. The results of thymectomy confirm with the previous reports.

### References