



Case Report

A case of Paraneoplastic Sclerodermiform Syndrome due to Papillary Thyroid Carcinoma with Myasthenia gravis

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ABSTRACT

The association of malignancy with collagen diseases is not fully understood especially in systemic sclerosis (SSc). However, scleroderma-like symptoms as a paraneoplastic syndrome may be seen as a very rare disease. The case is here presented of a 43-year-old female with Raynaud phenomenon, ocular myasthenia and a history of papillary thyroid carcinoma. From the history, it was learned that the first symptom of drooping eyelids was seen 19 years previously, after which she was diagnosed with ocular myasthenia due to thyroid papillary carcinoma. The patient used to take Pyridostigmine 60 mg 1x4/day and L-Thyroxine 100 mcg 1x1/day. In the physical examination there was tightness of the skin in the distal fingers, Raynaud phenomenon, and sclerosis of the perioral area which had begun contemporary with the thyroid carcinoma. Laboratory tests showed negative extractable nuclear antigen antibodies (ENA panel). No symptoms of pulmonary, renal or gastrointestinal involvement compatible with SSc were determined. This concomitance of cancer and sclerodermiform syndrome suggested that the scleroderma might have a paraneoplastic origin. The close temporal relationship between sclerodermiform syndrome onset and thyroid papillary carcinoma diagnosis is highly suggestive of a pathophysiological link. Paraneoplastic rheumatism remains a rare event, but knowledge of it is essential for early diagnosis of underlying cancer.

KEYWORDS: Paraneoplastic, Scleroderma, Thyroid carcinoma

INTRODUCTION

Malignant neoplasms are related to many different paraneoplastic rheumatological syndromes. Paraneoplastic diagnosis must be made based on specific criteria. Paraneoplastic rheumatism is rarely seen but good knowledge of it is essential for early diagnosis of underlying cancers[1].

The case is here presented of a 43-year old with ocular myasthenia, Raynaud phenomenon (RF) and papillary carcinoma. At the same time as the papillary thyroid cancer diagnosis, there were also symptoms of hardness of the skin in all the fingers, morning stiffness and frozen muscles around the mouth and thus the case was evaluated as having 'sclerodermiform syndrome'. The case was examined

together with the relevant literature of the relationship of systemic sclerosis (SSc) and malignancy.

CASE REPORT

A 43-year old female presented at our clinic with complaints of swelling and morning stiffness in the hand joints. In the history, 19 years earlier, as a result of tests applied for drooping eyelids which had developed, a diagnosis of thyroid papillary carcinoma was made and these complaints started after surgery. In addition, the patient stated colour changes and bruising in the finger joints in the cold. After the thyroid surgery, a radiotherapy program was applied and levothyroxin 1x100 mcg/day was taken as medication. Two years previously, pridostigmin 4 x 60 mg/day was used for the diagnosis of ocular myasthenia which was made from the bilateral drooping eyelids.

In the physical examination, bilateral drooping eyelids, frozen lips, hardness of the skin in both hands, and paleness in the finger distal ends were determined (Figures 1, 2). In the laboratory evaluation, rheumatoid factor was 70 IU/ml (0-5), C-reactive protein (CRP) was 0.2mg/dl (0-0.8), sedimentation was 9 mm/hour (0-20) and the extractable nuclear antibody (ENA) panel was negative. The patient was assessed as euthyroid with levels of thyroid stimulating hormone (TSH) 1.32 uIU/ml (0.27-4.2), free T3: 3.57 pg/ml (1.8-4.6) and free T4: 0.854 ng/dl (0.93-1.7). The nail bed capillaroscopy was normal. Conventional radiographs were taken of both hands as inflammatory joint disease was

Figure 1: Drooping of both eyelids and frozen lip of the patient



considered and no joint damage was determined. On high resolution computed tomography (HRCT), echocardiography and in respiratory function tests, there were no pathological findings. Organ involvement was not considered in this patient. As Raynaud treatment, pentoxifylline 400 mg 1 x 1 was started.

As the 'sclerodermiform syndrome' findings emerged close in time to the thyroid carcinoma and the antibodies were negative, the scleroderma-like findings were evaluated as paraneoplastic. It is hoped that this case presentation will contribute to the understanding of the relationship between scleroderma and malignancy.

Figure 2: Hardening of the skin in both hands and paleness in the distal ends



DISCUSSION

Systemic sclerosis (SSc), scleroderma-like changes and paraneoplastic rheumatismal syndromes including RF originate from neoplastic cells and immunological imbalances related to malignancy. They may occur before clinical findings of the tumour, simultaneously or after diagnosis. Genetic, environmental factors and immunological changes may cause both rheumatismal and paraneoplastic diseases. When the rheumatismal disease is long-term or has an atypical course, in those with a positive family history in respect of neoplastic disease, positive autoantibody or cancer indicators or when there is paraneoplastic syndrome, these patients must be investigated in terms of hidden neoplasm[2].

Previously the focus of interest has always been on the relationship between collagen tissue diseases and malignancy. Occasionally, autoimmune diseases may occur as paraneoplastic syndrome. This is most often encountered in dermatomyositis/polymyositis diseases in particular and in SSc it is an extremely rare event[3,4].

The pathogenesis of the relationship between SSc and cancer has not yet been fully understood. In SSc an increase is seen in the frequency of cancer, primarily lung and breast

cancers. In these cases, when SSc has not clinically receded with anti-cancer treatment, they are evaluated as primary

SSc rather than paraneoplastic. SSc is thought to be a facilitating factor in breast cancer and/or the development of metastasis[5]. The causes of this increased risk are thought to originate from damage associated with SSc or cytotoxic treatment. The close timing in some patients of cancer diagnosis and SSc onset suggests that SSc in a section of these patients could be paraneoplastic syndrome.

Despite the known relationship between sclerosis and cancer, current systemic sclerosis classification does not clearly differentiate between paraneoplastic sclerodermiform syndrome and sclerodermiform syndrome developing secondary to cancer treatment. This indicates that the presence of sclerodermiform syndrome may indicate an underlying neoplasm. In recent years, there has been a predominant view that sclerodermiform syndrome should be a part of the systemic sclerosis classification[6,7].

In literature, there are rare case reports which have been diagnosed with cancer types including pulmonary adenocarcinoma[6], colorectal cancer[3], breast adenocarcinoma[8], thyroid papillary carcinoma[9,10], and evaluated as paraneoplastic sclerodermiform syndrome.

Especially in these cases, with the close relationship of the common emergence of the scleroderma-like findings and the cancer diagnosis that the scleroderma-like findings did not recede following anti-cancer treatment, supports this relationship. In the current case, the findings of the hand joints occurred together with the thyroid cancer diagnosis and despite the passage of many years did not develop more seriously and considering primary SSc, as there was no organ involvement or antibody positivity, the case was evaluated as paraneoplastic sclerodermiform syndrome. As treatment for RF, pentoxifylline 400 mg 1 x 1 was started and recommendations were made to protect the hands from cold.

The current case was evaluated as sclerodermiform syndrome developing paraneoplastic to papillary thyroid carcinoma. In literature, there are some rare case reports of papillary thyroid carcinoma together with paraneoplastic systemic lupus erythematosus, myoclonus, panuveitis, polymyalgia rheumatica and dermatomyositis. An additional difference in the current case was the development of ocular myasthenia. Myasthenia Gravis (MG) is a rare, autoimmune, neuromuscular compound disorder. The disease is due to antibodies in the blood circulation which develop against post-synaptic agents in post-synaptic membrane. In the current case, due to the continuation of drooping eyelids following surgery, a diagnosis of ocular MG had been made 2 years previously and treatment of pridostigmin 4 x 60 mg/day was administered.

CONCLUSION

Occasionally Systemic sclerosis(SSc) and scleroderma-like findings may accompany malignant diseases. Nevertheless, the relationship between SSc and cancer is not clear. The research of this interesting case contributes to the current information on the development of 'paraneoplastic sclerodermiform syndrome'.

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