



ELSEVIER

CASE REPORT

Candidiasis associated with thymoma and myasthenia gravis

V. Vučićević Boras ^{a,*}, V. Brailo ^a, M. Šoštarko ^b, B. Čučević ^c

^aDepartment of Oral Medicine, School of Dental Medicine, University of Zagreb, Gundulićeva, 10 000 Zagreb, Croatia

^bDepartment of Neurology, Clinical Hospital Rebro, Kispaticeva 12, 10 000 Zagreb, Croatia

^cPulmology Hospital, Jordanovac 17, 10 000 Zagreb, Croatia

Received 12 November 2004; accepted 15 November 2004

KEYWORDS

Candidiasis;
Thymoma;
Myasthenia gravis

Introduction

Myasthenia gravis is one of the best-studied immunological disorders. Antibodies on nicotinic acetylcholine receptors are detectable in about 80% patients with myasthenia gravis. Almost every patient with myasthenia gravis until age of forty or forty-five develops hyperplasia of thymus gland. About 10% of patients with myasthenia gravis develop thymoma, but the nature of the association is uncertain. Because the thymus is the central organ for immunological self-tolerance, it is reason-

able to suspect that thymic abnormalities cause the breakdown in tolerance that causes an immune-mediated attack on acetylcholine receptors (AChR) in myasthenia gravis. Approximately 40–50% thymomas are associated with myasthenia gravis, and rarely they are associated with systemic lupus erythematosus, progressive systemic sclerosis, Sjögren's syndrome, chronic mucocutaneous candidiasis or other disorders.^{1–4} The secondary immunodeficiency is the main effect of immunosuppressive agents and procedures because this kind of treatment suppresses immune system generally and not selectively. This can result in various bacterial, fungal and viral infections. Candidiasis is the most common fungal infection in the immunocompromised host, and is particularly common in cancer patients receiving cytotoxic drugs and other therapies.^{5,6}

* Corresponding author. Tel.: +385 1 4802 124; fax: +385 1 4802 159.

E-mail address: vvboras@hotmail.com (V. Vučićević Boras).

We report a case of the patient with severe oral candidiasis together with thymoma and myasthenia gravis.

Case report

A 30 year-old patient was referred to our Department for evaluation of oral status with detailed medical history. He developed the first signs and symptoms of myasthenia gravis in 1995 in the form of disturbances of chewing, swallowing and talking but they were mild with different fluctuation. The thymoma was accidentally diagnosed during the chest examination by computerized

tomography. The great transsternal thoracotomy was performed and thymoma with invasion to pleura and pericardium was removed by partial resection of the pleura and pericardium. The patient underwent chemotherapy treatment and continued with pyridostigmine bromide and prednisone. Myasthenia gravis signs and symptoms were compensated but they exaggerated again after four years and recurrence of the thymoma was found. The left lateral thoracotomy was performed and tumour tissue was removed. The chemotherapy was introduced again and the patient received altogether thirteen cycles. The general condition of the patient deteriorated rapidly (Fig 1).



Figure 1



Figure 2



Figure 3

At the arrival to our Department he had extensive candidal infection in the mouth together with bilateral angular cheilitis. The smear from his mouth was taken and placed on the Saboraud's agar for 48 h on the 37 °C. This finding showed severe candidal infection. Due to his very poor general health, we did not perform biopsy. His laboratory tests showed increased sedimentation rate (28; normal range 2–13 according to Westergren), increased white blood cell count ($14.7 \times 10^9/L$; normal range $3.4\text{--}9.7 \times 10^9/L$), increased number of thrombocytes ($529 \times 10^9/L$; normal range $158\text{--}424 \times 10^9/L$), decreased level of serum albumins (46.8 g/L; normal range 57–69 g/L), increased level of α_1 (6.0 g/L; normal range 1.7–3.9 g/L), α_2 (14.2 g/L; normal range 5–9.5 g/L) and γ globulins (23 g/L; normal range 12.7–22.1 g/L). Magnetic resonance of the brain showed moderate atrophy and severe inflammation of both maxillary sinuses, ethmoid cells, both mastoid processes as well as temporal bone pyramids. At that time he was under corticosteroid therapy-high single dose alternate day (40 mg prednisone) (Fig 2).

The patient was given miconazole gel (20 mg/1 g-three times a day one tea spoon) during few weeks as well as antiseptic solution (1 mg/mL hexetidine-three times a day diluted into 1 dcl of water). Unfortunately, very soon patient deceased (Fig. 3).

Discussion

Orofacial manifestations are quite common in patients with cell mediated immunodeficiencies

and candidal infection together with various types of oral ulcerations could be frequently seen. Yet, it is still not clear whether these immunologic defects are due to the presence of the thymoma or whether the thymoma arises as a response to an underlying immunodeficiency. Also one has to have on mind the fact that patients receive cytotoxic drugs which also lead to immunodeficiency. Candidiasis is the most common fungal infection in the immunocompromised host, and is usually characterized with presence of creamy whitish or yellowish plaques on the mucosa of the oral cavity.⁷ The disease is not usually life-threatening but it can lead to diminished food and liquid intake and therefore it can affect patient's nutritional status. Also spreading of the infection to the esophagus and further can ultimately lead to the disseminated candidiasis which has been found to contribute to higher mortality rate in these patients.⁸

Porter and Scully² reported that ulceration of the tongue, buccal mucosa and palate has been reported in patients with thymoma. Patients may suffer from a wide range of bacterial, viral, fungal and protozoal infections.

As Rothberg et al.⁹ have reported, standard procedure to rule out thymoma should be performed in all patients who manifest late-onset of severe and persistent oral candidiasis.

Therefore, we recommend that in every patient with persistent oral candidiasis or ulceration possibly underlying immune defect should be ruled out. This article again emphasizes the significant role of cellular immunity in the oral candidiasis.

References

1. Cooper MD, Butler JL. Primary immunodeficiency disease. In: Paul WE, editor. *Fundamental immunology*. 1st ed. New York: Raven Press; 1989. p. 1033.
2. Porter SR, Scully C. Primary immunodeficiencies. In: Jones JH, Mason DK, editors. *Oral manifestations of systemic disease*. London: Balliere Tindall; 1990. p. 112–61.
3. Porter SR, Scully C. Orofacial manifestations in primary immunodeficiencies: T-lymphocyte defects. *J Oral Pathol Med* 1993;**22**:308–9.
4. Helm TN, Camisa C, Liu YA, Valenzuela R, Bergfeld WF. Lichen planus associated with neoplasia: acell mediated response to tumor antigens. *J Am Acad Dermatol* 1994;**30**: 219–24.
5. Aronson IK, Keyoumars S, Kang-Ihnn P, Rubinstein D, Lorincz AL. Triad of lichen planus: myasthenia gravis and thymoma. *Arch Dermatol* 1978;**114**:225–8.
6. Matsumoto Y, Satoko H, Masaru O. Sjogren's syndrome associated with thymoma. *J Am Acad Dermatol* 1996;**35**:639–40.
7. Lai WH, Lu SY, Eng HL. Levamisole aids in the treatment of refractory oral candidiasis in two patients with thymoma and myasthenia gravis: report of two cases Chang Gung. *Med J* 2002;**25**:606–11.
8. Lefebvre JL, Domenge C. A comparative study of efficacy and safety of fluconazole oral suspension and amphotericin B oral suspension in cancer patients with mucositis. *Oral Oncol* 2002;**38**:337–42.
9. Rothberg MS, Eisenbud L, Griboff S. Chronic mucocutaneous candidiasis-thymoma syndrome. *Oral Surg Oral Med Oral Pathol* 1989;**68**:411–3.

Available online at www.sciencedirect.com

