19-related lymphopoenia [10] and a significant decrease in CD4+/CD8+ ratio appear to be the most likely predisposing factors underlying this association. ■

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Good syndrome associated with lichen planus: a case report and review

Good syndrome (GS) is an adult-onset immunodeficiency syndrome, in which thymoma is associated with hypogammaglobulinaemia. It can also be associated with autoimmune diseases such as lichen planus (LP), myasthenia gravis or erythroblastopenia.

We report a 65-year-old woman who was diagnosed based on her cutaneous lesions. She had developed haemorrhagic lingual erosions and soft palate purpuric erosions since 2013. Some months later, lesions of LP (confirmed histologically) appeared on her legs, hands, back, and genitalia. Her past medical history included idiopathic erythroblastopenia associated with anaemia since 2008. She was initially treated with corticosteroids (1 mg/kg) for three months, then by cyclosporine for two years, which had to be discontinued because of kidney dysfunction. Finally, she received multiple blood transfusions with no significant improvement. Physical examination revealed multiple haemorrhagic erosions of the tongue (*figure 1A*), associated with genital erosions (*figure 1B*) and lesions of LP on the legs, hands (*figure 1C*), and back. Laboratory workup showed anaemia (8.3 g/dL), thrombocytopenia (7,000/mm^3), and leukopenia (4,750/mm^3). She had IgA, IgG, and IgM deficiency. Lymphocyte immunophenotyping showed T-cell lymphopenia CD4 (20%). Bone marrow examination also showed significant erythroblastopenia without megakaryocytes.

Serological tests were negative for hepatitis B, hepatitis C, HIV, CMV, and EBV. Computed tomography revealed a voluminous thymoma (*figure 1D*). Surgical thymomectomy was performed, and thymoma was confirmed by histology. The patient was treated with local and systemic steroids (1 mg/kg). Her LP lesions improved significantly, but the oral and genital erosions persisted. The patient died two years later from digestive bleeding because of severe thrombocytopenia.

GS is a rare syndrome characterized by B- and T-cell immunodeficiency associated with hypogammaglobulinaemia and thymoma [1]. This syndrome has been associated with LP, most commonly oral erosive LP [2]. Reportedly, oral LP (OLP) is present in 12.4% of patients with GS [3].

OLP is a chronic inflammatory disease characterized by reticular white lesions with mucosal atrophy and erosions. It results from the destruction of basal cells by Langerhans cells, macrophages, and T lymphocytes.

A literature search was performed on Pubmed using the terms "thymoma," "hypogammaglobulinemia," "immunodeficiency," and "Good's syndrome". The search revealed 15 cases of LP in GS patients (*supplementary table 1*). All cases were associated with hypogammaglobulinaemia, thymoma, and LP with oral involvement, and six patients had extra-OLP. In addition to LP, other autoimmune diseases were observed, including myasthenia gravis, vitiligo, alopecia areata, Addison's disease, and erythroblastopenia (our patient). In 10 of the previously reported cases, LP presented before thymoma, and in six patients it improved or resolved after thymomectomy, in addition to local and systemic steroids in the case of our patient. IV immunoglobulins were given to some patients, but proved less efficacious than thymomectomy. Thirteen of the 16 cases were associated with an erosive LP. LP seems to be more frequent in the setting of GS than in the general population. The majority of cases presented with erosive OLP, suggesting that this association is not fortuitous [4].

The pathogenesis of GS in the oral mucosa remains unknown. Maehara *et al*. investigated the expression of infiltrating lymphocytes, T-helper cells, cytokines, and interleukins in buccal mucosa specimens from GS patients compared with OLP patients, and suggested that the pathogenesis of the two conditions is different [5]. Genetic factors, stress, trauma, and infection can be predisposing factors for OLP. Epithelial barrier dysfunction may precede infection of basal epithelial cells by bacteria, viruses or possibly fungi, as suggested by the histopathological involvement of T cells in OLP [6].

Our patient represents another case of GS associated with OLP, but the relationship between the two conditions is still unclear. Cytokines and infectious agents could be involved;

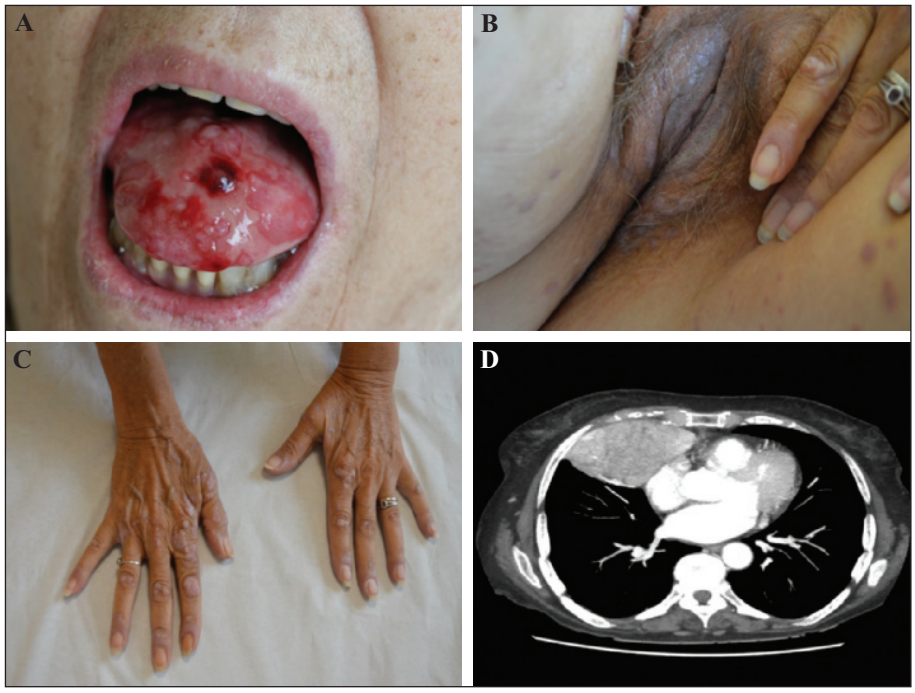

Figure 1. A) Haemorrhagic tongue erosion. **B**) Genital erosions. **C**) Lichen planus of the hands. **D**) Voluminous thymoma, 93 × 80 mm.

indeed, patients with GS frequently develop recurrent infections that could be a predisposing factor for OLP. ■

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Supplementary data. *Supplementary data associated with this article can be found, in the online version, at doi:10.1684/ejd.2019.3582.*
Table S1 Characteristics of 16 reported cases of lichen planus in patients with Good syndrome.

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The COVID-19 pandemic: implications for patients undergoing immunomodulating or immunosuppressive treatments in dermatology

The spectrum of dermatologic conditions is astonishingly broad and comprises, among others, neoplasms, drug reactions, autoimmune disorders and infections. Consequently, an enormous variety of therapeutic options for skin diseases exists. Immunomodulatory or immunosuppressive agents are prescribed to many patients and biologicals are applied to specifically target signalling pathways and key molecules of innate and adaptive immunity. The exact implications of these treatments and the susceptibility of patients receiving such treatments in the setting of an increased community risk of viral infections are not yet precisely known. Whereas some infections (*e.g.* with Mycobacterium tuberculosis) must be excluded prior to the initiation of immunosuppressive treatment, the presence of viral infections, other than