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Case Report

Squamous cell carcinoma of tongue after treatment for systemic lupus erythematosus in a young Chinese patient

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Abstract: We recently encountered an unusual case of squamous cell carcinoma in the left of lingual body arising in a 29-year-old woman who had a history of systemic lupus erythematosus. The woman had been diagnosed as systemic lupus erythematosus for five months during which the treatment for lupus was carried out. Five months later, she went to our department of oral surgery for the treatment of "tongue ulcer". Imaging scan revealed the space-occupying lesion in the left lingual body. Biopsy was performed and the disease was diagnosed pathologically as squamous cell carcinoma of tongue via hematoxylin-eosin (H&E) staining.

Keywords: Systemic lupus erythematosus, squamous cell carcinoma, tongue, immunosuppression

Introduction

Systemic lupus erythematosus (SLE) is a kind of autoimmune inflammatory connective tissue disease which occurs in young women with multiple organs [1, 2]. However, squamous cell carcinoma in oral mucosa after treatment for SLE was unusual. To our best knowledge, only four cases about SLE accompanied with squamous cell carcinoma had been reported in the literatures so far [3-5]. Two cases were squamous cell carcinoma in rectal mucosa, one case in vulva and one case in palate. Recently, we observed another case of SLE in which squamous cell carcinoma of tongue occurred after treatment for lupus. The features of clinic-pathology were presented and possible pathogenesis was discussed.

Case presentation

A 29-year-old female patient who had suffered from multiple joint pain and dry mouth for one months and then she was sent to the Department of Rheumatic immunology of our hospital for the first time in July 4, 2014. There was no rash, rampant caries and mouth ulcer in physical examination except for bilateral wrist tenderness. The result of Auxiliary examination as followed: white blood cell counts 3.08×10^9/L, hemoglobin 77 g/L, platelet 381×10^9/L, sedimentation 34 mm/h; blood biochemical: serum iron 1.9 μmol/L, not with iron binding force 58.3 μmol/L; total urinary protein 0.08 g/24 h, anti-beta 2 glycoprotein 14.20 RU/ml, anti-nuclear protein P protein antibody 4.0 RU/ml, anti-nucleosome antibodies 56.20 RU/ml, autoantibodies showed homogeneous ana type and titer of 1:640 (+), anti ENA anti-body showed anti-SSA (+), anti-double stranded DNA antibody 103.0 IU/l, IgG 23.3 g/L, complement test are shown to complement C3 0.627 g/L, complement C40.09 g/L.MRI showed joint effusion (**Figure 1A**), thickening of flexor tendon sheath (**Figure 1B**) and bilateral synovial thickening of the wrist (**Figure 1C**) and bone erosion. Imaging showed bilateral salivary gland excretion dysfunction. Chest CT showed enlarged lymph nodes in bilateral axillary multiple, while there was no obvious abnormal in lung. The patient was diagnosed as systemic lupus erythematosus and methylprednisolone (24 mg/d) combined with hydroxychloroquine (400 mg/d), mycophenolate mofetil (1.5 g/d) were used. Other approaches such as correct anemia and improve circulation were carried

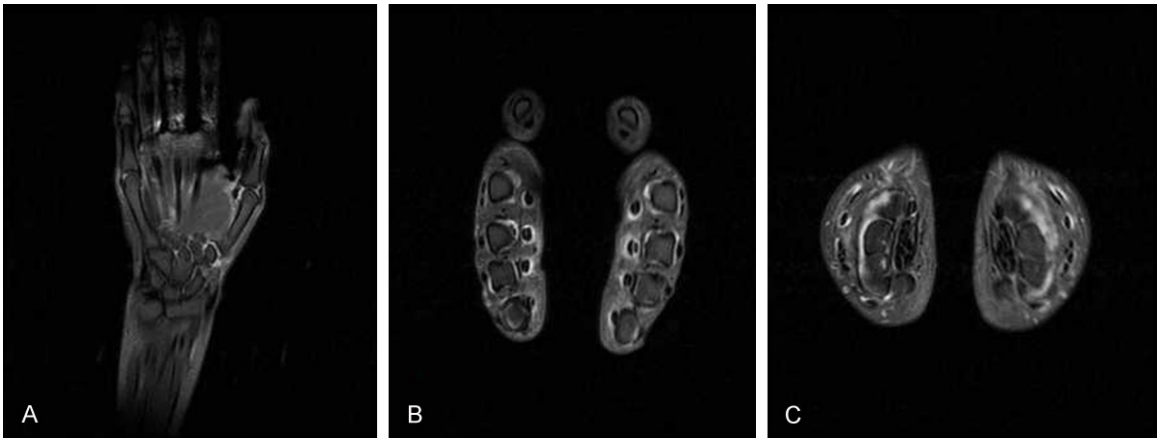

Figure 1. Imaging showed joint effusion (A), thickening of flexor tendon sheath (B) and bilateral synovial thickening of the wrist (C).

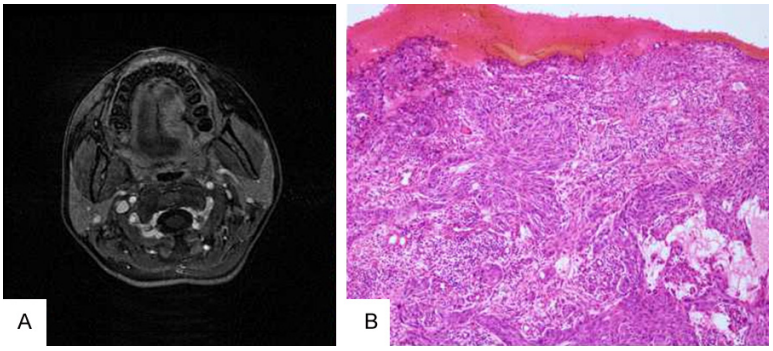

Figure 2. Imaging showed the mass in the posterior part of left tongue (A); Microscopy, irregular epithelial nests show infiltrative growth and the nucleus of epithelial cells are atypia and mitosis could be observed (B).

out for symptomatic treatment. After ten days of treatment, joint pain improved and the patient discharged on July 19, 2014. Post discharge treatment was as followed: Prednisone hormone gradually reduced to 5 mg/d, Mycophenolate mofetil (0.5 g/d) and hydroxychloroquine (200 mg/d) were used to maintain treatment. Unfortunately, the patient was admitted to hospital again for ulcer of tongue on December 30, 2014. Physical examination found that the ulcer was in the posterior part of left tongue which was hard edge, tenderness and invasion of the floor of the mouth. The area of tongue ulcer was 4 cm×3 cm (**Figure 2A**). Then biopsy of ulcer was carried out and pathological diagnosis was squamous cell carcinoma in the posterior part of left tongue (**Figure 2B**). The total follow-up period was nine months after biopsy and very unfortunately the patient died of brain metastases.

Discussion

SLE is one kind of autoimmune disease characterized by the production of autoantibodies and the deposition of immune complex because of the abnormal activation of lymphocytes which can lead to the destruction of multi-ple target organs in the whole body. The damage of skin, kidney, lung, heart, blood and nervous system were common [6, 7]. The probability of SLE patients accompanied with malignant tumor is about 5% and the mean interval from SLE to the occurrence of the tumor was 13 years [2]. Lymphoma, leukemia, lung cancer are more common accompanying tumor [8, 9]. SLE cases complicated with squamous cell carcinoma are rare and only three (four patients) literature was reported [3-5]. The patients are all women and the onset age is from 27 to 44. The time interval from SLE to diagnosis with squamous cell carcinoma of is 0.5-24 years. All patients received immunosuppressive therapy. The location of squamous cell carcinoma included rectum (two cases), vulva (one case), jaw (one case). The prognosis of patients was different and specific clinical features were detailed in (**Table 1**).

The mechanism by which SLE is associated with squamous cell carcinoma is not clear. About 40% SLE patients may present oral ulcer

Table 1. Clinical data of patients with systemic lupus erythematosus complicated with squamous cell carcinoma

Cases	Age/ Gender	Duration (years)	Drug intervention	Tumor site	The prognosis
M Grimaldo-Carjevschi [3] etc	38/female	12	Prednisone 10 mg/day, cyclophosphamide 750 mg/day	Palate	Three years without metastasis or recurrence
Giuseppe Bifulco [4] etc	27/female	6	Prednisone 100 mg/day×69 month, azathioprine 80 mg/day×51 month, cyclophosphamide 83 mg/day×15 month, cyclosporin 300 mg/day×2 month	Vulva	No distant metastasis after seven months, cachexia lead to death
EJ Lydon [5] etc	41/female	18	Cortisol, mycophenolate mofetil, cyclophosphamide	The rectum	Infringement of vaginal/recurrence and death after a few months
EJ Lydon [5] etc	44/female	21	Cortisol, mycophenolate mofetil, cyclophosphamide	The rectum	No recurrence or metastasis within five years
Present case	29/female	0.5	Prednisone 5 mg/d, Mycophenolate Mofetil 0.25 g/bid, Sinonteam 0.2 g/d	Body of tongue	Died of brain metastases after diagnosis as squamous cell carcinoma

and rash or erythema. The cause of malignant tumor may be due to the abnormal immune system leading to immune surveillance of tumor cells weakened or directly cause gene mutation. The application of immunosuppressive drugs may play a role in promoting the occurrence of squamous cell carcinoma [10]. Recent studies have shown that cyclophosphamide may lead to cancer cell proliferation, metastasis and the expression of vascular growth factors [11]. In this case, the application of immunosuppressive agents after the diagnosis of SLE may play a role in the development of tumor.

Canker sores are common in patients with SLE, so the risk of accompanying squamous cell carcinoma should cause the enough attention for clinicians. Studies have shown that strong chloroquine antimalarial drugs can reduce the occurrence of malignant tumor. The related mechanism could involve reducing gene mutations, inhibition of telomerase activity, increase the synthesis of P53 and strengthen the DNA damage repair [12]. Therefore, the relevant preventive measures should be appropriately increased in the process of treatment of SLE to reduce the risk of cancer and achieve a better therapeutic effect.

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Disclosure of conflict of interest

None.

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