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***For further information about this article or if you need reprints, please contact:***

Batool Sharifi-Mood  
Department of Infectious  
Diseases,  
Boo-Ali Hospital,  
Zahedan, Iran

Tel: +0541 3229811  
Fax: +0541 3235131

## **Acute Necrotizing Ulcerative Gingivitis: A New Complication of Mumps**

<sup>1</sup>Batool Sharifi-Mood, <sup>2</sup>Minoo Mohraz,  
<sup>3</sup>Seyed-Dawood Mansoori and <sup>1</sup>Roya Alavi-Naini

Mumps virus causes a fibrile illness and it is considered as a common old garden infection. It causes swelling of the salivary glands, especially the parotids. Miscellaneous complication of the mumps including; orchitis, oophoritis, meningoencephalitis, pancreatitis, nephritis, myocarditis, mastitis, thyroiditis, polyarthritis and transverse myelitis have been reported, but sever neutropenia and acute necrotizing gingivitis has not been previously reported. Herein, we report the first case of acute necrotizing gingivitis due to sever neutropenia in a 16 year old girl who, had mumps.

**Key words:** Neutropenia, acute necrotizing ulcerative gingivitis, mumps

<sup>1</sup>Department of Infectious Diseases,

Zahedan University of Medical Sciences, Zahedan, Iran

<sup>2</sup>Department of Infectious Diseases, Tehran University of Medical Sciences, Tehran, Iran

<sup>3</sup>Department of Clinical Immunology, Shahid Beheshti University of Medical Sciences, Tehran, Iran

## INTRODUCTION

Mumps virus is a paramyxovirus that is spread by infected droplet or direct contact with materials contaminated by infected saliva<sup>[1]</sup>. Mumps is endemic in certain heavily populated areas but occur in epidemics when many susceptible persons are crowded together<sup>[1,2]</sup>. Mumps virus cause a febrile illness and it is also relatively neuroinvasive. Sometimes mumps infection only becomes apparent because of complications, without the telltale facial swelling<sup>[1,3]</sup>. Miscellaneous complications have been reported<sup>[4]</sup>. A well-known complication of mumps is inflammation of the testes. A fairly rare but potentially serious complication of the mumps is inflammation of the pancreas<sup>[3,4]</sup>. Mumps virus can cause mild leukopenia but to our knowledge, sever leukopenia and neutropenia and acute necrotizing gingivitis has not been previously reported.

## CASE REPORT

A 16 year old girl was admitted to Boo-Ali Hospital for fever, malaise and a necrotic ulcer of gingiva localized on maxillar incisor teeth in May 2004. She was well until 9 days before admission when, fever, headache, cough and coryza occurred. Three days later, the swelling of the both parotid glands occurred. The day before admission, she experienced pain and inflammation in the upper gingival area. Her sister had mumps and in the last 3 weeks, mumps was epidemic in her school. She was well neutrihed and had a history of good dental hygiene. The patient was full vaccinated and without any surgical or significant past medical history and was on no medication except acetaminophen during 3 days ago. On examination, she had a temperature of 38.6°C degrees, blood pressure of 122/75, heart rate of 102 and a respirator rare of 20 per minute with an oxygen saturation of 95% while breathing room air. She was ill-appearing. Respiratory and cardiovascular examinations were normal as were cranial nerve and neurologic examinations. She had an oral malodor with cervical lymphadenopathy. There was necrosis and ulceration of gingival between the teeth localizes near the maxillar incisor teeth. Laboratory values included a white blood cell count of 650 cells mm<sup>-1</sup> 3, hemoglobin of 12.8 mg dL<sup>-1</sup>, platelets 178,000 and a normal chemistry panel. Liver function tests, fasting blood sugar and BUN, creatinine were normal. Chest-xray and sinus computed tomography scan were normal. Routine cultures of blood and urine were negative. Culture of oral ulcer detected *Klesiella* and *Fusobacterium*. The patient was treated with ceftazidime 8 g, vancomycin 3 g, amikacin 800 mg and metronidazole 1500 mg intravenously daily 12

and 24 h later, White Blood Cell count (WBC) was 710 and 670 cells mm<sup>-1</sup> 3, respectively. She continued to have temperature of up 38.5°C for the first 48 h. Therefore, amphotericin-B was added to her drugs regimen. Bone marrow aspiration and biopsy did not show leukemia and other malignant disorders but there was a sever decrease in myeloid cells. She was HIV negative and normal results were obtained in all immunologic test including flow cytometry, neutrophil chemotaxis, NBT, serum immunoglobulin and complement levels. On hospital 7th day, she had apparently, clinical improvement but WBC count was 800/mm. She was referred to a dental professional and necrotic lesion was removed. On hospital 16th day, the patient was discharged home on intravenous amphotericin and WBC count was 1650. Using of subcutaneously administered Granulocyte Colony Stimulating Factor (GCSF) leded to dramatic increases in neutrophil counts, resulting in marked attenuation of infection and inflammation. During 8 weeks follow-up after discharge, there was a laboratory improvement in total white blood cells count (3150) three months later, total white blood cell count was 3850 and she was referred to her school.

## DISCUSSION

Acute Necrotizing Ulcerative Gingivitis(ANUG), is a distinct periodontal disease associated with oral spirochetes and fusobacteria<sup>[1,5]</sup>. It is not clear, however, whether bacteria initiate the disease or are secondary invaders. It rarely develops in healthy children but occurs frequently among children in Asia and Africa where affected children usually have protein malnutrition<sup>[5]</sup>. Disease occurs in persons with poor oral hygiene and smokers<sup>[1,6]</sup>. Also it usually develops in presenting component (Leukemia, Diabetes mellitus, Neutropenia, pregnancy, scurvy and stress)<sup>[2,5]</sup>. Clinical manifestations of ANUG include necrosis and ulceration of gingival between the teeth, oral malodor, cervical lymphadenopathy, malaise and fever. The disease is usually localized, with the most common site being the periodontium associated with the mandibular incisor teeth<sup>[1,5]</sup>. Dark field microscopy of debris obtained from ANUG lesion will demonstrate dense spirochete populations<sup>[1,5,6]</sup>. Our patient had no any predisposing factors and the lesion was localized near the maxillar incisor teeth. She had mumps that diagnosis was done by IgM-ELISA. Mumps virus causes a fibrile disease, usually present with leukopenia and relative lymphocytosis but, in our knowledge, sever neutropenia has not been reported in mumps disease. Necrotizing gingivitis occurred due to sever neutropenia in this

patient and clinical and laboratory improvement with antibiotics and GCSF therapy, resulting in marked attenuation of infection disease. Therefore, we advise the white blood cell count for everybody who has mumps.

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