

A Case Presenting with Gummas

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Abstract

Observation: Gummas are subcutaneous big nodules and usually occur as a result of microorganism-related reaction in subcutaneous tissues. The gumma course first starts with a softening and an ulceration, and is completed with a scar formation. A 66-year-old man admitted to our clinic for nodules on his hard palate, face and hand for 1 year. These lesions initially presented with ulcerations and perforations and were ended up with scar formations. Physical examination revealed a 1.5x2 cm hole in the midline of the hard palate, bone destruction in the right 4th mid-phalanx and a 3x1 cm scar on the right preauricular area. No similar lesions were seen in his family and close-contact people. Neither him nor his family had a history of tuberculosis. Extensive work up for gumma was negative, and thus he was diagnosed with an idiopathic gumma. We reported this case due to its rarity.

Introduction

Gummas are big subcutaneous nodules. The course of gumma usually started with softening, which is followed by ulcerations and is ended up with scar formation [1]. We presented a case with multiple gummas with unclear etiology even after extensive work up and discussed the reasons of gumma with literature review.

Case Report

A 66-year-old male admitted to our clinic because he developed a lesion on his palate 1 year ago, which became a hole at the end of the healing process. In the same period of time, he developed similar big nodules on the face and the hand. Those lesions resolved, but caused collapse. His past medical and family histories were unremarkable.

Physical examination revealed a 1.5 x 2 cm hole in the midline of the hard palate (**Figure 1**), bone destruction in the right 4th midphalanx and a 3x1 cm scar on the right preauricular area (**Figure 2**). There was no lymphadenopathy.



Figure 1. 1.5x2 cm hole in the midline of the hard palate



Figure 2. 3x1 cm scar on the right preauricular area

His differential diagnosis was considered as syphilis, leprosy, tuberculosis and a deep mycotic infection. A blood work up including a blood cell count, comprehensive metabolic panel were normal. A syphilis serology (VDRL, TPHA) was negative. A skin smear for leprosy was negative as well. There were no lymphadenopathy in our patient and asido resistant bacillary (ARB) samples from the lesion and the sputum were negative. *Ehrlich-Ziehl-Neelsen* (EZN) staining was negative and the computed tomography of the lung was unremarkable for tuberculosis. The diameter of purified protein derivative (PPD) was 9 mm. Tuberculosis was excluded based on these results.

There were no growth in bacterial, mycobacterial and fungal cultures from the nostril and the left leg discharge. Brucellosis work up was negative. Rheumatologic work up including antinuclear antibody, protoplasmic-staining antineutrophil cytoplasmic antibodies (p-ANCA), and classical antineutrophil cytoplasmic antibodies (c-ANCA) were negative as well.

A systemic examination and a peripheral smear for malignancy were normal. A biopsy from the palate revealed an inflammatory granulation tissue. A Congo red stain for amyloidosis was negative. Since all the work up was negative or normal, he was diagnosed with an idiopathic gumma. There was no new lesion during the follow up period.

Discussion

Gummas occur due to microorganisms, tumors and other systemic diseases related reactions in subcutaneous tissues. Several infectious and non-infectious reasons may cause gummas (**Table 1**) [1, 2].

Table 1. The Most Common Causes of Gummas

Infectious Causes	Non-infectious Causes
Tuberculosis	<i>Wegener</i> granulomatosis
Leprosy	Eosinophilic granuloma
Syphilis	Non- <i>Hodgkin</i> lymphoma
Atypical mycobacterial infections	Salivary gland tumors
Deep mycotic infections	Mesenchymal tumors
Aspergillosis	Sarcoidosis
Histoplasmosis	Amiloidosis

In tuberculosis, *Mycobacterium tuberculosis* can cause chronic caseification granulomas. Twelve percent of cases with extrapulmonary tuberculosis show an involvement of head and neck regions. It involves cervical lymph nodes as well. In rare cases, these granulomas are seen in sinuses, and may lead to perforations [2]. Involvements of a tongue and gingiva are common, and those lesions are usually painless, but persistent [3]. Inoculation is seen in uncovered skin areas, particularly on faces and extremities. Lacerated areas on the skin may be an entrance of infections. Oral cavity and conjunctiva may be affected. The first lesion is a chancre, and then it conjugates with regional lymphadenopathies (LAPs) to form gummas complexes [1]. There were no lymphadenopathy in our patient and ARB samples were negative. EZN staining was negative and the computer tomography of the lung was unremarkable for tuberculosis. Tuberculosis was excluded based on these results.

Leprosy is a chronic granulomatous disease caused by the bacteria *Mycobacterium leprae*. It may affect paranasal sinuses, eye and larynx. It has a predilection to involve peripheral parts of the body. A mucosal lesion of leprosy is a plaque-like at the beginning of the course, and then it causes nodular erosions that may lead to perforations [2, 4]. It usually affects small bones of hands and feet and can cause osteoporosis in phalanxes [4]. In our case, there were no findings consistent with leprosy. Skin smear for leprosy was negative as well.

Atypical mycobacterial infections can cause similar lesions. *Mycobacterium avium intracellulare* infections are commonly seen in HIV-positive, and immunocompromised patients or patients with prolonged lung diseases. It may cause extrapulmonary involvements

such as cervical lymph nodes. It less frequently affects maxillary sinuses, mastoids and palate [5]. In our case, there was no LAP, and no growth in mycobacterial culture.

In syphilis, noduloulcerative lesions are more commonly seen in legs. Oral lesions can be observed in all three phases of syphilis, and more commonly in tertiary phase. A hard palate and tongue may be affected [2, 3] Syphilis serology tests were negative in our case.

Primary oral aspergillosis rarely causes granulomas, but it can be seen in immunocompromised and HIV-positive patients. It usually causes necrotic ulcers in the gingival tissue and the tongue [6]. Histoplasmosis is also seen in immunocompromised patients. It causes ulcerative and vegetative lesions and can involve oral cavity, tongue and gingiva [2]. Actinomycosis occurs most commonly in the cervicofacial region (60%). It may invades from damages tissues, as may occur after trauma, then may cause tissue destruction in the nearby tissues such as cheeks, pharynx, palate and sinuses, and may form fistulas [2]. LAPs are seen in most of the cases. There was no growth in fungus culture and no trauma history in our case.

Granulomatous reactions may also be seen in non-*Hodgkin* lymphoma and eosinophilic granulomas [2, 6]. The malignancy work up was unremarkable in our case. Additionally, salivary gland tumors, mesenchymal-origin benign and malign tumors are more common in these diseases [7]. Biopsy was unremarkable as well. Since the comprehensive work up was negative, our case was diagnosed with an idiopathic.

Gummas are rarely seen elementary lesions. Several diseases can cause gummas. Even if an extensive and a comprehensive work up of gumma is unremarkable, it still may be as a result of very rare etiologies that we could not diagnose with current diagnostic tests. With the advance of diagnostic tests and microbiological culture methods, we would diagnose underlying causes of "idiopathic" gummas, which are currently unknown.

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