Valley International Journals
Open Access Journal
VIJ
New Thinking New Innovation

INTERNATIONAL JOURNAL OF MEDICAL SCIENCE AND CLINICAL INVENTIONS
Volume 2 issue 01 2015 page no. 662-665 ISSN: 2348-991X
Available Online At: http://valleyinternational.net/index.php/our-jou/ijmsci

Chickenpox – A Rare Case Involing Periodontal Tissues

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Abstract: Chickenpox is largely a childhood disease, with more than 90% of cases occurring in the children below 10 years of age. Chickenpox usually is acquired by the inhalation of airborne respiratory droplets from an infected host. The highly contagious nature of VZV explains the "epidemics" of chickenpox Chickenpox vesicle formation on gingival tissues is decribed in this case report. The case was clinically diagnosed as chickenpox, Tzanck test were carried to confirm.

I. INTRODUCTION

Many oral cavity diseases are caused by various bacterial, fungal and virus [1] Usually viruses cause limited diseases which are cured without complication but there are reports of Herpes-Zoster virus creating severe condition in oral cavity like osteomyelitis [2] exfoliation of tooth [3] and alveolar bone necrosis [4] [5]. Varicella-Zoster is another virus commonly seen affecting children and sometimes adult. In a literature there are hardly any reports on Varicella-Zoster Virus (VZV) affecting gingiva. This virus, which is a double-stranded DNA virus, is the etiologic agent of the clinical syndrome of chickenpox (varicella). Chickenpox is largely a childhood disease, with more than 90% of cases occurring in the children below 10 years of age. Chickenpox usually is acquired by the inhalation of airborne respiratory droplets from an infected host. The highly contagious nature of VZV explains the "epidemics" of chickenpox. High viral titers are found in the characteristic vesicles of chickenpox, and thus viral transmission also may occur through direct contact with these vesicles. After primary infection, the VZV virus is hypothesized to spread from mucosal and epidermal lesions to local sensory nerves. The VZV virus then remains latent in the dorsal ganglion cells of the sensory nerves. Reactivation of the VZV virus results in the clinically distinct syndrome of herpes zoster (shingles). Secondary bacterial infection of skin lesions is the most common complication to predispose to scarring [6].

Chickenpox vesicle involvement of periodontal tissues has been recorded in relevant literature in 1980 by Badger G R [7]. In India so for this has not been reported in literature hence it was felt that the presentation of this case will be of academic interest.

II. CASE REPORT

A 20 years male patient who was admitted in hospital for varicella infection was referred by Medical Officer to Dental clinic with severe pain in his lower tooth since two-three days. Under the isolation period he was given analgesics but after repeated complain of pain he was told to get checked by dental surgeon with special warning as patient was in isolation ward and in active chickenpox stage. Patient was examined in isolation ward to rule out any acute dental infection or caries exposure. Patient was in severe

pain but that used to get reduced after analgesic dose. History revealed that there was no dental pain or any dental problem with patient before this episode. He never visited to dental clinic for his any dental treatment. He did not have any oral habits and he was maintaining oral hygiene in satisfactory condition. No other medical systemic complications or any injury noticed on examination. Extra oral inspection found that no swelling or tenderness anywhere. TMJ was normal. Intraoral examination was carried out and it revealed that all teeth in absolutely healthy conditions. Gingival condition was within normal limit except one outstanding finding (photographs 1 & 2) was punched out loss of buccal marginal gingival of 34 and 35 and papilla in between them. On further examination it was seen that complete papilla was not involved (photograph 3 & 4). Tip of papilla was not affected it was exactly demarcating vesicle formation and rupture of it leading into raw surface. Since it was there for three days and patient was on analgesics, he could not report to dental surgeon as medical officer delayed it thinking that it was not that immediate or urgent since no extra oral signs or difficulty in food intake. Detailed history from patient only revealed that it was continues pain and exactly localized to particular teeth in lower premolars. There was no tenderness or mobility or hypersensitivity. He did not notice any bleeding or discharge from the site.

Lab Studies

Though the case was clinically diagnosed as chickenpox, Tzanck test were carried to confirm. In this test smear of vesicular fluid, which, can demonstrates multinucleated giant cells and epithelial cells with eosinophilic intranuclear inclusion bodies.

Discussion

Chickenpox usually is diagnosed clinically on the basis of the characteristic rash and successive crops of lesions. The disease is quite benign in the healthy child Whereas increased morbidity is seen in adult and immune compromised patient. Chickenpox in adults and adolescents may be preceded by a prodrome of nausea, myalgia, anorexia, and headache. Skin lesions starts as small erythematous macules on the scalps, face, trunk, and proximal limbs, with rapid sequential progression over 12-14 hours to papules, clear vesicles, and pustules, with subsequent central umbilication and crust formation. Vesicles also may appear on the palms and soles, and mucous membranes with painful, shallow oropharyngeal or urogenital ulcers. Intense pruritus commonly accompanies the vesicular stage of the rash. It is important to note that lesions may be found in all stages of development and healing in affected sites. A history of exposure to an infected contact within the incubation period of 10 to 21 days is also an important clue in diagnosis [8]. Skin lesions heal without any complication leaving behind no damage to the tissues. It is only when the vesicles gets infected they heal with secondary healing leaving scar formation.

Chickenpox vesicle formation on gingival tissues has not been reported in literature, as patient must be having other lesions more prominent and infective state must have been preventing them to take advice from dental surgeon. Since in this case patient was admitted in the hospital and he insisted to be checked by dental surgeon even in the infectious condition proper photographs could have been taken. Following conditions need to be considered for differential diagnosis.

(a) Recurrent Apthuos stomatitis. It is an ulcerative disease that most often occurs in otherwise healthy individuals and present as a painful lesion of the buccal and labial mucosa and tongue. It has round margins, shallow base, 2-6 in no at time and recurrent history, No skin lesions. Heals without scar [9].

(b) Bullous Pemphigoid shows larger area ulcer with tissue tags and similarly skin lesions are also involved.

(c) Drug Eruptions, Generalized area involvement, history of drug contacts.

(d) Erythema Multiforme. Typical mild self limiting and recurring mucocutaneous reaction characterized by

iris lesions of skin and mucous membrane along with history. Subdermal blister formation and epidermal necrosis of keratinocytes seen.

(e) HIV Gingivitis. Clinical condition differ showing involvement of many teeth and gingival and HIV status

(f) ANUG. It has typical marginal gingival involvement with psudomembrane formation [10]

(g) Sharp injury. History and margin of wound different.

(h) Burns have definite history of burn.

Treatment

This is self limiting disease and mainly seen in children. Primary vericella infection in the healthy child is a rather benign disese that requires symptomatic therapy only. Skin lesions heal without any scars but if it gets infected can lead to scarring. Trimming children's fingernails may minimize skin damage from scratching and the associated complications of bacterial superinfection. Periodontal involvement is very painful and oral hygiene maintenance has important role to prevent further bacterial infection and scarring. Loss of gingival tissue can lead to further complications in future. In this case patient was reassured about his teeth. He was advised proper oral hygiene. He was given antiseptic mouth wash and analgesics. Symptoms reduced after another 3 days but the loss of papilla persisted.

Complication

Secondary bacterial infection of skin lesions is the most common complication in healthy children, manifesting as impetigo, cellulitis, and erysipelas, Staphylococci and streptococci are the most commonly implicated bacterial pathogens. There are chances that gingival infection may lead to other complications like abscess, periodontal pocket, gingival recession and hypersensitivity.

Summary

This is rare case report with gingival involvement showing loss of gingival tissue. This gives us idea of how destructive can be a chickenpox to periodontal tissue and this can be a starting point of periodontal diseases.

Fig -1

Fig -2

Fig -3

Fig-4

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