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Dry socket – Bane for dentistry: A Review

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Abstract

Dry socket is post operative complication comprise of pain, inflammation, denudation of alveolus with or without halitosis and suppuration. The incidence of dry socket varies from 1% to & 70% based on various sample size and formulation of the studies. It is commonly proposed that dry socket incidence is more commonly in mandibular third molar and more often seen in percornitis conditions. In this paper we analyze the incidence and clinical appearance of the dry socket. We critically analyzed various treatment modalities have been proposed. In the conclusion, we think that multiple factor play in dry socket formation but most common reason can be fibrinolytic activity but due to sedatory life style and changing oral habit other factors such as tobacco, smoking, alcohol should not been neglected.

Keywords: Alveogyl, Dry socket, Neocone, Zinc oxide Eugenol

Introduction

Dry socket is an 'unscientific term' and the one of most common as well as most studied complication of disintegration of blood clot following dental extraction after permanent teeth. It has been defined in up to 17 different ways in order to achieve accurate diagnosis.[1,2] But it was firstly described by Crawford in 1896.[3] It is a painful condition where exposed bone are not covered by healing epithelium or blood clot.

The incidence of dry socket varies; it is 1 to 70 % for all extraction sites except mandibular 3rd molar site, where it is upto 38%. [4] Most of the author's belief that the etiology of the dry socket is multifactorial. Calhoun NR concluded that oral contraceptive boost the incidence of dry socket.[5] Hence it has been put forwarded that inflation in fibrinloytic activity can leads to dry socket and oral contraceptive consist estrogen, which might affect the coagulation pathway.[6]

The food particle might dislodge the blood clot. The accumulated food particle is a production factory of fermentation for the bacteria. This produce toxin and antigen which hinder the attachment of the healthy epithelium, which results in pain and halitosis.

The treatment modality of dry socket is absolutely depends upon clinician judgment and experience. It is mainly due to complex etiology of the dry socket. There are many treatment strategies have been published for the management of the dry socket.

The aim of this review is to understand and analyze the various strategies for the management of the dry socket. The key question was: which strategy is having higher impact on pain relief and which medicament heals the mucosa in a lesser period of time. [4] The articles were selcected from PubMed-MEDLINE database with the keywords included “dry socket”, “postextraction complications”, “alvogyl”, “alveolar osteitis” and “fibrynolitic alveolitis. The nonhuman studies and case report were excluded.

Epidemiology

Distribution of dry socket with relation to gender and age:

All the authors concluded that the incidence of dry socket increases with age and without the significant difference in genders. But in contrast Faizel S et al concluded that incidence of dry socket is 1.86:1 higher in male as compared to female with the mean age of 34.6 years. Males are more prone to consume Tobacco which leads to delay wound healing.[8] But Malkawi Z contradictory stated that female experienced higher incidence of dry socket due to smaller jaw size and hormonal status.[14]

Distribution of the dry socket

It is clinically make out by dislodge blood clot with denuded alveolus followed by patient complaints of sharp, stormy pain with or without suppuration and halitosis. Patient also complaints of homolateral radiating pain which last for several days. In the study by Faizel S et al analyzed the clinical features of dry socket and concluded that in dry socket pain was present in 100% cases, 45.20% bare bone, 48.71% empty socket, halitosis in 52.10% redness around the socket in 38.60% the mean onset of the time was 3.2 days ,with the higher incidence in mandibular arch 63.24%. He also concluded that single tooth extraction and multiple tooth extraction ratio was 4.4:1 and trans-alveolar extraction to intra-alveolar extraction ratio was 8.36:1.[8] This could be due to quantity of blood which get clot in the socket is huge and less prone to get dislodge.[15]

Prevention

The debate on dry socket on general health continues to exist. Lilly et al concluded that medical compromised patients are prone for dry socket due to impair immune system.[16] As it is said that prevention is always better than cure. Various methodologies have been adopted by various authors in order to prevent the occurrence of the dry socket.

Most commonly accepted hypothesis is that dry socket is due to fibrinloytic activity and which is the most credible evident by the many authors in order to substantiate claims that incidence of dry socket in more in female as compare to male. Based on these evidence antifbrinloytic agent such as tranexamic acid, are used to prevent blood clot dislodgement. [17]

Irrigation is the key for preventing dry socket. Various studies have been done on post extraction laundries with saline and it was concluded that with the increase rate of irrigation the incidence of dry socket decreases.[18]

Pain relief with various techniques

To describe the treatment options for dry socket we evaluated Clinical trial studies in PubMed database.

The efficacy of Zinc Oxide Eugenol and Alveogyl and Neocone: A study conducted by Chaurasia NK et al conducted a study on 88 patients. They were randomly assign in group A **(**zinc oxide eugenol paste) and group B (Alveogyl^{TM}). They concluded that zinc oxide eugenol is more effective as compared to Alveogyl.[7] But in

contrast Faizel S et al conducted a study on 7,106 patients out of them 117 sockets in 105 patients diagnosed as dry socket and were andomly assign in 3 different group . They claimed the superiorty of alvogyl as initial pain relief and Neocone as a best dressing material for the management of dry socket.[8]

Antibiotic treatment: The correct administration of the antibiotic is an effective way for the bacterial elimination. Most commonly used antibiotic used in dentistry is Amoxycillin.In a study by Barone A et al concluded that use of antibiotic decreased the incidence of pain but upsurge the gastrointestinal disturbance.[9]

Chlorhexidine gel application: Chlorhexidine is one of the greatest breakthroughs in dentistry. It has boundless application including in surgery. Haraji A et al concluded that might lowered the risk of dry socket but he also emphasized on less traumatic extraction.[10]

Low level laser therapy: Laser is the emerging branch in dentistry. It has wide implication on all the branch of dentistry. Low level laser therapy decline the inflammatory process and pain.[11] Eshghpour M et al compared the low level laser therapy with alvogyl and proposed that low level laser therapy can be good alternative for the management of dry socket.[12] In an another study by Kaya GŞ et al concluded that low level laser therapy at at 7.64 J/cm^2 performed superiorly as compared to SaliCept and alvogyl and to SaliCept can be an alternative to alvogyl.[13]

Conclusion

To sum up, It is important to understand the causative factor of dry socket. The factors vary according to the standard of living in various geographical area. It is always better to commence the treatment with antifibrinolytic agent with accurate dosage of antibiotics and analgesic but the toxcitiy and resistance of the antibiotic always should be taken into consideration.The usage of antiseptic decline the incidence of dry socket upto 50%.The low level laser therapy showed promising results in the dry socket management but further more evident required to substantiate the claim.

Ethical Statement

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- Informed consent: Informed Consent taken from the patients

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