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Review Article

Alveolar Osteitis, Etiopathogenesis, Diagnosis, and Management with Alvogyl: A Critical Literature Research

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Abstract: The aim of this article is to understand the etiopathogenesis of a common post-extraction complication called as Dry socket or Alveolar Osteitis (AO). We also tried to understand the results of applications of alvogyl in the management of AO.

Keywords: Dry Socket, AO, Alvogyl, Post-Extraction Complication.

INTRODUCTION

Dental extraction of a diseased tooth is one of the most frequent procedures performed in any dental clinic and is one of the most common surgical procedures for Oral and Maxillofacial Surgeons [1]. It is very important to manage perioperatively and Post-operative complications followed by extraction for the betterment of both the patient as well as operating surgeon. One of the most common postoperative Complications encountered in an adult patient is called as AO or Dry socket [2]. The term AO was used in the literature by Crawford in 1896, and since then, many authors have triedto explain or to define AO in their own way.

For standardization, AO is defined as postoperative pain in and around the extraction site, which increases in severity in any time between 1 to 3 days after the extraction, accompanied by a partial or total disintegrated blood clot within the Alveolar socket with or without Halitosis [2]. The common Clinical signs for the diagnosis of AO are pain, which usually starts 1st to 3rd day postoperatively, which may be either localised or radiating in nature. The socket will bedenuded, and the patient may complain of foul odour and unpleasant taste [2, 3].

Occasionally, lymphadenopathy and trismus may also be noted. However, trismus is usually associated due to of inferior alveolar nerve Block or probably due to traumatic surgery of 3rdMolars or traumatic extraction and injury.

Incidence: There are many literature that has of reported varying incidence in the occurrence of dry socket. This may be due to a difference in reported incidence and diagnostic criteria. IR Blum had reported a 3 to 4% incidence of dry socket following routine Extraction[2]where as other authors like D. Acharya *et al*., have reported incidences ranging from 0.5% to 5% [4]. In the literature, several etiologies and various precipitating factors have been reported. It has been reported that a patient with poor oral hygiene, advanced periodontal disease, and acute local infection has more chances of developing AO as compared to a healthy patient [2-4]. In an animal study conducted by Rozands *et al*., [5], they had reported that the association of Actinomycesviscosus and Streptococcal mutans does influence wound healing. Many other factors like trauma to hard and soft tissue during extractions, extensive use of irrigation, which destabilise the clot which may also attribute to the development of AO [1-3].

Fig. 1: Clinical presentation of Dry socket

However, whatever be the etiology of the dry socket pain is universally associated and caused by dislodgement of the clot and denudation of the socket (Fig. 1). There are various treatment strategies for the management of dry socket [6]. During our Literature search, we had noticed that the main aim in the management of dry socket is to prepare anobturating dressing of various medical substances that covers the nude bone, reduces pain and promotes healing, hence providing a productive barrier should be the main aim of the management [6]. Substances like application of autologous blood-derived products or synthetic medicated chemicals can be used as a protective barrier to the exposed socket. Autologous blood-derived products like PRP and PRF (fig 2) are used to enhance tissue healing and regeneration as these products have growth factors in it. These growth factors have bioactive properties that help in promoting angiogenesis and the addition of stem cells [6].

Fig. 2: Platelet Rich Plasma Platelet Rich Fibrin

Synthetic medicated chemicals such as Alvogyl, zinc Oxide eugenol pack, Neocone, CHX gel have been reported to be used as the dressing material in the management of dry socket [7], (fig 3).

Fig. 3: Neocone Alvogyl Zinc Oxide Eugenol

Alvogyl contains Iodoform (antimicrobial) and butamben (anesthetic). The study conducted by Sayed Faizel *et al*., [8], Amit Yadav *et al*., [3]. D. Acharya [4], had reported that Alvogyl has better healing properties and relieves pain at a much faster rate compared to other synthetic chemicals.

DISCUSSION

Dry socket is the most commonly encountered post-extraction complication by general dentists as well as maxillofacial surgeons [8]. The incidence of dry socket, which has been reported, is 1 to 4% [8], however, there aremuchvariability in incidence, which, according to Blum [2], is due to differences in diagnostic criteria, method of assessment, and non-reporting. Though the precise etiology is still unknown but as per the Birn hypothesis, during extraction, trauma and infection in the perialveolar region result release of tissue activators, which convert plasminogen to plasmin, which dissolves the clot and also releases the kinins which causes severe pain [3].

Dry socket was more commonly noticed in the mandible as compared to the maxilla [8, 9], and the mandibular 1st molar has the highest incidence of dry socket, followed by 3rd molar [8, 9].

When the patient report to the dental office with complaint of severe pain radiating to temporal region 2nd to 3rd day postoperatively the main aim of the management should be to irrigate the socket and place a biological or chemical dressing, prescribing nonsteroidal anti-inflammatory (NSAID'S) drugs which also helps in management of pain but the dressing of the extraction socket is a must, In biological dressings PRP provides high concentration of growth factors and is useful for short time stimulation of tissue repair, where as PRF provides good fibrin matrix which help in healing and regeneration and provide solid consistency which act as a good dressing material for extraction socket [6]. Whereas in synthetic chemicals, zinc oxide eugenol is economically cost-effective as compared to Alvogyl or Neocone.

Although all the synthetic chemicals showed positive outcomes Alvogyl required the least number of dressings and was quicker in providing pain relief to the patient [3-9].

TAKE HOME MASSAGE

1. Dry socket is a common painful postoperative complication that is encountered in the dental office.
2. Nonsteroidal anti-inflammatory drugs alone should not be used for the management of AO.
3. As soon as the damages of AO is established, intraoral socket irrigation and placement of biological or medical dressing along with NSAID should be employed.
4. A constant follow-up of such patients is advocated.

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