

Management of Dry Socket: A Systemic Review

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ABSTRACT

Dry socket or alveolar osteitis or sicca Dolorosa is commonly associated complication following extraction of third molars. Hindrance of the clot within the extraction socket which disrupts healing process is the basic phenomena happened in dry socket. The correct etiology of sicca Dolorosa remains unclear but it allied with severe postoperative pain and discomfort to the patient. Therefore we aim to review this article which gives a brief overview of the clinical features, etiology and the management of dry socket.

Keywords: Dry socket, incidence, etiology, management

Dry socket is most commonly associated complication following extraction with an onset at 2nd to 4th days after surgery [1]. Crawford first described the term “Dry socket” in 1896 [2] since then, various terms used to depict to this complications, such as “alveolar osteitis”, “alveolitis”, “localized osteitis”, “alveolitis sicca Dolorosa”, “localized alveolar osteitis”, “fibrinolytic alveolitis”, “septic socket”, “necrotic socket”, and “alveolgia”[3–5]. Various definitions of AO have been reported but currently, AO defined as “postoperative pain inside and around the extraction site, which increases in harshness at any time among the first and third day after extraction, escorted by a partial or complete loss of blood clot within the alveolar socket” [3]. The correct etiology of dry socket remains unclear but it allied with severe postoperative pain and discomfort to the patient. Hence we aim to review this article which gives a brief overview of the clinical features, etiology and the management of dry socket.

CLINICAL FEATURES

The chief clinical feature of dry socket is a drain socket without a blood clot and exposed bone. Sometimes socket

may also plug with food debris and saliva mixture [6]. Pain usually starts 2-3 days after extraction which fluctuate in the rate of recurrence, intensity and sometimes emits to the ear and neck, foul smell and bad taste in mouth and edema on surrounding gingival with lymphadenitis [7].

ETIOPATHOGENESIS

A partial or complete loss of blood clot from the extraction site is a characteristic feature of dry socket [8]. Although the precise etiology remains unclear according to various published research several local and systemic factors are responsible for that. The occurrence of dry socket in female patients is up to 4.1% whereas in the male is 0.5%, it shows females have a high predilection of AO than men. The changes in endogenous estrogens during the menstrual cycle that activate the fibrinolytic system are responsible for an increased incidence of dry socket in females. Hence menstrual cycle should be taken as consideration before the forecast of any surgical procedure including extraction [9,10]. A range of micro-organism also involved in the etiopathogenesis of a dry socket including enterococcus, streptococcus viridians, streptococcus, bacillus coryneform, proteus vulgaris, pseudomonas

aeruginosa, citrobacter freundii, and Escherichia coli. Actinomyces viscosus and streptococcus mutans lead delayed wound healing of the extraction socket and anaerobic microorganisms are responsible for fibrinolytic activity which is a foremost factor in the etiology of dry socket. A study by Rodrigues MT et al showed that capnocytophaga ochracea, fusobacterium nucleatum, prevotella melaninogenica, streptococcus anginosus, treponema socranskii, and streptococcus sanguis produced a higher amount of C- reactive protein which is liable to spread the infection and disturb the repair process [11]. Osteomyelitis also a contributor in factor in the etiology of dry socket a study by Krakowiak PA reported that the healing process delayed when extraction sites were previously affected by osteomyelitis [12].

Smoking, trauma during surgery, single extractions, age, gender, medical history, site of extraction, amount of anesthesia used before surgery, operator experience, duration of surgical procedure, antibiotics use prior to surgery and complexity of the surgery are some important risk factors associated with etiopathogenesis of dry socket. According to Bortoluzzi MC et al, the incidence of a dry socket with more pain associated traumatic surgeries and smoking found to be associated with the development of postoperative complications [13]. According to Abu Younis MA et al smoking, surgical trauma and single extractions are common predisposing factors in the incidence of dry socket [14]. A study by Eshghpour M et al found that the incidence of dry Socket was significantly associated with smoking, the complexity of the surgery, length of surgery, and a number of capsules used to reach anesthesia [15].

According to a study Momeni H et al females are at high risk of AO than males and the ratio of the mandible to maxilla was 2.5 to 1 and mandibular third molars were more often involved than other teeth, trauma, poor oral hygiene, and smoking had increased the incidence of dry socket [16]. Contraceptive pills are amplified the incidence of dry socket, a study by Eshghpour M et al reported that females using oral Contraceptive revealed a significantly greater frequency of AO compared with nonusers [17]. According to Al-Sukhun J et al ibuprofen significantly allied with the etiology of dry socket [18]. Surgical procedure including flap design also affects the occurrence of AO, as per Haraji et al modified triangular flap decreases the incidence of Alveolar Osteitis more than the buccal envelope flap [19].

PREVENTION OF DRY SOCKET

Medical, dental history, laboratory and physical examination are contributing factors which determine the incidence of dry socket. Thus for prevention, a thorough dental and medical history should be recorded. The habit of smoking should be ruled and the dentist should request the patient not to smoke at least 48 hours after extraction. Several treatment modalities had been advocated to reduce the incidence of dry socket e.g. use of antiseptic mouthwashes, antifibrinolytic agents, antibiotics, steroids, clot supporting agents and intra alveolar dressings [4,5]. A study by Field et al observed that the incidence of dry socket decreased with the irrigation of 0.2% CHX digluconate [20].

MANAGEMENT OF DRY SOCKET

Irrigation helps in the management of dry socket it removes the debris and bacteria from the exposed bone surface. Irrigation with warm saline solution, sodium perborate, and iodoform are very effective. Advised the patient to maintain good oral hygiene with the help of rinsing by warm saline gives additional benefits [21,22]. A study by Kansakar N showed that if intermittent debridement was performed in dry socket management the duration of treatment is less as compared with those who treated traditionally.

Penicillins, clindamycin, erythromycin, and metronidazole are effective in the management of AO [23-25]. Topical application with a mixture of Hydrocortisone and Oxytetracycline mixture notably decrease the incidence of AO after the removal of impacted mandibular third molars. The preferred option of analgesics includes nonsteroidal anti-inflammatory drugs and narcotic based like codeine [8]. (LLLT) augments the speed of wound healing and reduces inflammation it applied after irrigating the socket with continuous-mode diode laser irradiation (808 nm, 100 mW, 60 seconds, 7.64 J/cm²) [26]. Surgical intervention of dry socket includes curettage but it is not usually recommended due to the induction of extra pain. It starts with the administration of anesthesia, surgical debridement of socket followed by closure of flap [14].

CONCLUSION

Dry socket or alveolar osteitis is a widespread problem in dentistry various factors such as age, gender, site of extraction, the complexity of extraction, medical and

dental history and smoking should be ruled out before undergone any surgical procedure. Although the exact etiology of dry socket is not clear with a little precaution, we can able to reduce the incidence of dry socket.

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