

Original Research

Assessment of risk factors of dry socket after tooth extraction: An observational study

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ABSTRACT:

Background: Many factors contribute to the occurrence of dry socket. For example: low experience level of operator preoperative infection, sex, site of extraction, use of oral contraceptives, smoking, and use of local anesthetics with vasoconstrictor. Hence; the present study was undertaken for assessing risk factors of dry socket after tooth extraction. **Materials & methods:** A total of 593 patients who underwent dental extractions were enrolled in the present study. Among these 593 patients, dry socket was found to be present in 45 patients. Analysis of patient's data including personal data, smoking habits, medical history and medications etc. was done. Various risk factors for dry sockets were recorded and were analysed. **Results:** The overall percentage prevalence of dry socket was 7.59 percent. In the present study, smoking history was found to be positive in 29 patients while it was absent in 16 patients. History of traumatic dental extractions was found to be positive in 34 patients while it was absent in 11 patients. Poor oral hygiene was present in 32 patients. **Conclusion:** Smoking, poor oral hygiene and traumatic dental extractions are considered predisposing factors in the occurrence of dry socket.

Key words: Dry socket, Tooth extraction

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INTRODUCTION

The unscientific term "dry socket" refers to a post-extraction socket where some or all of the bone within the socket, or around the occlusal perimeter of the socket, is exposed in the days following the extraction, due to the bone not having been covered by an initial and persistent blood clot or not having been covered by a layer of vital, persistent, healing epithelium. The patient may not be able to prevent food particles or the tongue from mechanically stimulating the exposed bone, which is acutely painful to touch, resulting in frequent acute pain.¹⁻³ Many factors contribute to the occurrence of dry socket. For example: low experience level of operator preoperative infection, sex, site of extraction, use of oral contraceptives, smoking, and use of local anesthetics with vasoconstrictor. The

incidence of dry socket can be reduced through the use of antibiotics, antifibrinolytic agents, mouthwashes, steroids and intra-alveolar medicaments. The management of dry socket includes reassurance of the patient, irrigation, and placement of intra-alveolar dressing.⁴⁻⁷ Hence; the present study was undertaken for assessing risk factors of dry socket after tooth extraction.

MATERIALS & METHODS

The present study was conducted for assessing risk factors of dry socket after tooth extraction. A total of 593 patients who underwent dental extractions were enrolled in the present study. Among these 593 patients, dry socket was found to be present in 45 patients. Complete demographic details of all the patients were obtained. Radiographic

assessment of all the patients was done. Analysis of patient’s data including personal data, smoking habits, medical history and medications etc. was done. Various risk factors for dry sockets were recorded and were analysed. All the results were recorded in Microsoft excel sheet and were analysed by SPSS software. Chi-square test was used for evaluation of level of significance.

RESULTS

In the present study, a total of 593 patients who underwent dental extractions were analysed. Out of these 593 patients, dry socket was found to be present in 45 patients. The overall percentage prevalence of dry socket was 7.59 percent. In the present study, smoking history was found to be positive in 29 patients while it was absent in 16 patients. History of traumatic dental extractions was found to be positive in 34 patients while it was absent in 11 patients. Poor oral hygiene was present in 32 patients. After analysing statistically, it was seen that present of smoking habit, past history of dry socket, history of traumatic extractions, and not following care instructions post-extraction were significant risk factors for development of dry socket.

Table 1: Prevalence of dry socket

Parameter	Number of patients	Percentage of patients
Total patients	593	100
Dry socket	45	7.59

Table 2: Risk factors of dry socket

Risk factors		Number of patients	p-value
Smoking history	Present	29	0.01*
	Absent	16	
Diabetes status	Diabetic	20	0.48
	Non-diabetic	25	
Past history of dry socket	Present	30	0.00*
	Absent	15	
Traumatic extractions	Present	34	0.03*
	Absent	11	
Not following care instructions after the tooth extraction	Present	30	0.00*
	Absent	15	
Poor oral hygiene	Present	32	0.00*
	Absent	13	

DISCUSSION

Commonly known as “dry socket” which is one of the common postoperative problem that results in severe pain “postoperative pain” inside and around the extraction site, which increases in severity between the first and third day after the extraction, usually caused by a partial or total disintegrated blood clot within the socket, this type of extraction complications usually associated with the extraction of impacted 3rd molar teeth and mandibular molar teeth.⁵⁻⁷

By the third day post-extraction, pain due to extraction is expected to have subsided appreciably, but when such pain becomes worse and continues through one week after the procedure and the socket does not appear to be healing, the occurrence of dry socket can be established. Incidence of dry socket has been reported in literature to be about 0.5–5.6% and following surgical extraction of third molars, it has been found to be up to 30%. Several factors have been reported in literature to be responsible for the occurrence of dry socket; these include traumatic, difficult and prolonged extraction, pre- and postoperative infection at the site, smoking, oral contraceptives, bone disorders and underlying pathologies, irradiation, systemic illness such as diabetes mellitus, clotting problems, and failure to comply with post-extraction instructions. Other possible risk factors include periodontal diseases and previous dry socket with past extractions.⁷⁻¹⁰

In the present study, a total of 593 patients who underwent dental extractions were analysed. Out of these 593 patients, dry socket was found to be present in 45 patients. The overall percentage prevalence of dry socket was 7.59 percent. Taberner-Vallverdú M et al analyze the efficacy of different methods used in the management of dry socket regarding results of pain’s relief and alveolar mucosa healing compared to conventional surgical treatment of curettage and saline irrigation. A Cochrane and PubMed-MEDLINE database search was conducted with the search terms “dry socket”, “post-extraction complications”, “alvogy”, “alveolar osteitis” and “fibrinolytic alveolitis”, individually and next, using the Boolean operator “AND”.

11 publications were selected from a total of 627. Three of the 11 were excluded after reading the full text. The final review included 8 articles: 3 prospective studies, 2 retrospective studies and 3 clinical trials. They were stratified according to their level of scientific evidence using the SORT criteria (Strenght of Recommendation Taxonomy). All treatments included in the review have the aim to relief patient’s pain and promote alveolar mucosa healing in dry socket.⁶

In the present study, smoking history was found to be positive in 29 patients while it was absent in 16 patients. History of traumatic dental extractions was found to be positive in 34 patients while it was absent in 11 patients. Poor oral hygiene was present in 32 patients. After analysing statistically, it was seen that present of smoking habit, past history of dry socket, history of traumatic extractions, and not following care instructions post-extraction were significant risk factors for development of dry socket. Only Oginni states the importance of insisting on good oral health in order to reduce incidence of dry socket. Finally, with reference to age and gender as risk factors, all of the authors except Eshghpour and Nejat described an increase of dry socket incidence with age, with an increased likelihood of 1.9 times per year, according to Haraji and Rakhshan. This fact can be attributed to a slower metabolism, worse healing and a

weaker immune system. Only Malkawi et al found a higher incidence in men although the rest of the articles did not find significant differences with regard to the patient's gender.^{7- 13} Momeni H et al evaluated the relative prevalence of this entity after tooth extraction and determine the contributing factors in patient referring to Yazd dental clinics. Four thousand seven hundred and seventy nine patients were selected and included. Over the two-month period of the study, among of 4,779 patients, 28 patients returned with dry socket phenomena. Their results showed that the incidence of dry socket was 0.6% and females were more common involved than males (0.08% versus 0.04%). The ratio of mandible to maxilla was 2.5 to1 and mandibular third molars were more often involved than other teeth. Trauma, poor oral hygiene and smoking had increased the incidence of dry socket. The results of their study suggested that trauma during surgery or extraction and poor oral hygiene are important factors that increase the incidence of dry socket, these factors should be considered before and after tooth extractions.¹⁴

CONCLUSION

From the above results, the authors concluded that Smoking, poor oral hygiene and traumatic dental extractions are considered predisposing factors in the occurrence of dry socket. However; further studies are recommended.

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