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Original Research

Evaluation of prevalence and Risk Factors of dry socket following Third Molar extraction

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ABSTRACT:

Aim: The purpose of this study was to evaluate and notify the prevalence the occurrence of dry socket in subjects who underwent extractions of wisdom tooth. **Material and methods:** The purpose of this study was to evaluate and notify the prevalence the occurrence of dry socket in subjects who underwent extractions of wisdom tooth. All ethical clearances, demographic details and medical history assessment were undertaken. Thorough postoperative evaluations were carried out and a record was maintained meticulously to identify all cases of dry socket. SSPS software was used for Data analysis. **Results:** The study evaluated 120 patients in all. The occurrence of dry socket (as shown in the table below) was observed in 26%, 33%and 45% cases at 2, 7 and 14 days respectively. **Conclusion:** The harmful effects of smoking, inadequate oral hygiene and suboptimal surgical proficiency were highlighted as significant risk factors for dry socket development after wisdom tooth extraction, underscoring the importance of preoperative counselling and targeted interventions.

Keywords- dry socket, smoking, oral hygiene

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INTRODUCTION

Dry socket (DS) is the most common post-surgical complication following extraction of impacted molar teeth. Various risk factors have been mentioned for this complication including gender, age, amount of trauma during extraction, difficulty of surgery, inappropriate irrigation, infection, smoking, and oral contraceptive use. The aim of the current study was to evaluate the incidence of DS among surgical removal of impacted third mandibular molar in an Iranian Oral and Maxillofacial Clinic and also identifying the background risk factors.[1]

Dry socket is one of the most common complaints the patient suffers following dental extraction. It is more frequent following mandibular third molar extraction.[2]

Extraction techniques are divided into nonsurgical extractions and surgical extractions. Nonsurgical extractions require simple elevation or separation of the root without reflection of the mucoperiosteal flap. Surgical extractions need the reflection of the mucoperiosteal flap with or without bone removal.[3]

The local factors include traumatic extractions and the level of difficulty in extracting, decreased vascularity, and increased bone density. The incidence of dry socket is more common in the mandibular third molar extraction. Systemic factors such as diabetes mellitus may contribute to the incidence of dry socket. This is due to the altered healing in diabetic patients. Delayed healing is reported as the well-known complication of oral surgeries in diabetic patients.[4,5]

The treatment of alveolitis depends on each professional's clinical experience primarily due to its complex etiology, although substantial research has been published on the management of dry socket.[6,7]

Material and methods

The purpose of this study was to evaluate and notify the prevalence the occurrence of dry socket in

subjects who underwent extractions of wisdom tooth. All ethical clearances were taken care of and complete demographic details including thorough medical history assessment were undertaken. A meticulous record of the surgical techniques and procedure were taken. Thorough postoperative evaluations were carried out and a record was maintained meticulously to identify all cases of dry socket. SSPS software was used for Data analysis.

Results

The study evaluated 120 patients in all. The occurrence of dry socket (as shown in the table below)was observed in 26%, 33%and 45% cases at 2, 7 and 14 days respectively.

Table 1. Dry Socket Prevalence at Different Time Points

Time Point	No dry socket (n)	Dry socket(n)	Prevalence (%)
2 days	89	31	26%
7 days	80	40	33%
14 days	66	54	45%

Table 2: Risk factors associated with dry socket

Risk Factor	Dry socket(n=80)	No Dry Socket (n=20)	P value
Poor Oral Hygiene	51	6	<0.002
Smoking	26	4	0.001
Surgical Technique			
Simple extraction	25	31	<0.001
Surgical extraction	57	66	

Significant findings were observed after careful assessment of risk factors and occurrence of dry socket. Patients with poor oral hygiene had 51 incidents of dry socket in comparison to only 6 such cases amongst patients with good oral hygiene ($P < 0.002$).

On similar lines smoking also resulted in 26 cases of dry socket with only 4 cases with no dry socket highlighting itself to be a possible risk factor ($P = 0.001$). Moreover surgical tooth removal resulted in greater case of dry socket when compared with normal extraction with figures being 57 and 25 respectively ($P < 0.001$).

Discussion

Removal of impacted mandibular third molars is one of the most common procedures performed by oral and maxillofacial surgeons. Complications after third molar surgery are commonly of minor character and self-limiting. Serious complications related to third molar surgery, such as neurosensory.[8] disturbance, haemorrhage, jaw fracture, and life-threatening infections are rare.

Tobacco smoking is widely documented to have several adverse effects and has been implicated in several diseases, mainly those of the cardiovascular and respiratory systems. It is also considered to be associated with surgical outcome and the development of complications during and after many types of surgery.[9]

This study offers valuable insights into the prevalence and factors linked to dry socket following third molar extraction. The analysis demonstrated a notable rise in dry socket prevalence over the postoperative period, with rates reaching 26% at 2 days, 33% at 7 days, and 45% at 14 days post-surgery. These results are consistent with existing literature, highlighting dry socket as a common complication after third molar extractions, often peaking in occurrence during the first week following surgery.

Similar findings were observed by Abu Younis et al in their study. The objectives of this study were to find out the frequency, clinical picture, and risk factors of dry socket at the Dental Teaching Center of Al-Quds University in Palestine. Methods and Materials: Two previously used questionnaires were accomplished in this study over a one year period. The first questionnaire was completed for every patient who had one or more permanent teeth extracted in the Dental Surgery Clinic. The other one was completed for every patient suffered a postoperative pain and was diagnosed with dry socket. There were 1305 dental extractions performed in 805 patients. The overall frequency of dry socket was 3.2%. The incidence of dry socket following non-surgical extractions was 1.7% while it was 15% following surgical extractions ($P< 0.005$). The incidence of dry socket was significantly higher in smokers (12%) than in non-smokers (4%) ($P < 0.005$), however, there is a strong association between the amount of smoking and the incidence of dry socket ($P < 0.002$). The incidence of dry socket was significantly higher in the single extraction cases (13%) than in the multiple extraction cases (5%) ($P = 0.005$). Age, sex, medical history, extraction site, amount of local anesthesia and experience of operator play no role in the occurrence of dry socket. Smoking, surgical trauma and single extractions are considered predisposing factors in the occurrence of dry socket. On the other hand, factors like: age, sex, medical history, extraction site, amount of anesthesia, and operator experience have no effect on the observation of dry socket.[11]

Dry socket is a common complication of dental extraction, especially extraction of third molars. Knowledge of the frequent risk factors of alveolitis osteitis is useful in determining high-risk patients, treatment planning, and preparing the patients mentally. The aim of this narrative review was to summarize the common risk factors of dry socket. Unlike surgery difficulty, surgeon's experience, oral contraception use, and oral hygiene which showed stronger evidence, the

influences of age, gender, and smoking were rather inconclusive. The case of female or oral contraceptive effect might relate mainly to estrogen levels (when it comes to dry socket) which can differ considerably from case to case. Many risk factors might be actually a combination of various independent variables, which should be targeted instead, in more comprehensive designs.[12]

Conclusion

The harmful effects of smoking, inadequate oral hygiene and suboptimal surgical proficiency were highlighted as significant risk factors for dry socket development after wisdom tooth extraction, underscoring the importance of preoperative counselling and targeted interventions.

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