

Prevalence of Dry Socket in Yemeni Patients

Abdulla Farhan^{1*}, Sam Da'er², Akram Nasher³, Ali Juain⁴, Naif Alareqi⁵

¹Assistant Professor of Oral Maxillofacial Surgery, Faculty of Dentistry, Sana'a University, Yemen

²Assistant Professor of Oral Maxillofacial Surgery, Faculty of Dentistry, Sana'a University, Yemen

³Assistant Professor of Oral Maxillofacial Surgery, Faculty of Dentistry, Sana'a University, Yemen

⁴Master Degree in Oral Maxillofacial Surgery, Faculty of Dentistry, Sana'a University, Yemen

⁵Bachelor Degree, Faculty of Dentistry, Sana'a University, Yemen

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*Corresponding author: Abdulla Farhan

Assistant Professor of Oral Maxillofacial Surgery, Faculty of Dentistry, Sana'a University, Yemen

Abstract

The aim of this study was to evaluate the prevalence of dry socket at the faculty of dentistry in Sana'a University. **Patient and methods:** 994 patients attended to the Oral Surgery Clinic in the faculty of Dentistry, Sana'a University, to have their teeth extracted in period from October 1, 2022 to January 19, 2023. 26 patients with dry socket were analyzed who underwent tooth extraction. **Results:** The percentage of the patients who had a dry socket was 2.6%. The percentage of male to female was 1:1.3. According to age the dry socket was more in age between 18-30 years. **Conclusion:** The incidence of dry socket was more happened in young adult, female, single tooth in mandible and with patients taking non-steroidal anti-inflammatory drugs before extraction.

Keywords: dentistry, Oral Surgery, Dry socket, tooth extraction.

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INTRODUCTION

Dry socket is known as alveolar osteitis, its inflammation of the alveolar bone [1]. The bone within the socket is exposed in the 2 to 4 days following the extraction, due to disintegration of the blood clot by fibrinolysis or not having been covered by a layer of initial healing epithelium [2, 3, 4].

Dry socket is the most painful complication after a tooth extraction, it mostly observed in patient with age 40 to 45. However, the pain differ in frequency and intensity, and other symptoms present are commonly observed such as headache, insomnia, dizziness and a fetid odor and most commonly affects the teeth of the lower jaw [5]. Smoking, oral contraceptives, and traumatic extraction were the most common predisposing factors for dry socket [6].

In comparison between types of alveolitis simplex according to Hermesch *et al.*, [7], the mucosa becomes inflamed and partially covered by granulosomatous tissue and is painful during mastication are present in superficial alveolitis marginal. While, In suppurative alveolitis, the clot becomes infected and is covered by a green-grayish membrane and can contain

dental fragments or osseous sequestrum. It causes medium intensity pain, and fever can also be present. However, the alveolar osseous walls are exposed, with total or partial clot loss, dark coloration, and a fetid odor are present in dry socket.

The prevalence of dry socket is inescapable. Several studies indicate that the use of chlorhexidine mouthwash 0.12% after tooth extraction use of antibiotics, and avoiding smoking reduces the incidence of dry socket [8, 9]. The treatment of dry socket is controversial, it is wide ranging including copious irrigation with normal saline, 3% hydrogen peroxide and 2% sodium iodide or placement of intrasocket medication, Alvogyl, zinc oxide eugenol, Absorbable gelatin sponge, metronidazole, olive oil-black seed paste and others [10, 11].

PATIENTS AND METHODS

The present study was conducted for prevalence of dry socket on 994 patients attended to the Oral Surgery Clinic in the faculty of Dentistry, Sana'a University, to have their teeth extracted in period from October 1, 2022 to January 19, 2023. 26 patients with dry socket were analyzed who underwent tooth

extraction procedures. All the procedures were carried out under local anesthesia. Ethical approval was obtained from Sana'a University, Faculty of Dentistry prior to the study under No. 27/9-2022 and all of the participants provided written informed consent before they were enrolled in this study. 1,600 tooth extractions were performed for 994 patients by fifth-level students under the supervision of oral and maxillofacial surgery staff at the Faculty of Dentistry, Sana'a University. The information data of patients include incidence of dry socket after tooth extraction, gender, age, medications used regularly before the extraction, the socket affected jaw, the operator, extraction technique, the number of

local anesthesia cartridge, number of teeth extracted and smoking. The data will be collected and statistically analyzed.

RESULTS

In this study twenty six dry sockets were recorded. The prevalence was 2.6% Figure (1). The stander deviation indicates the large dispersion in the data resulting from the significant difference between the ratio of dry socket and normal socket after extraction of 1600 tooth in 994 patients.

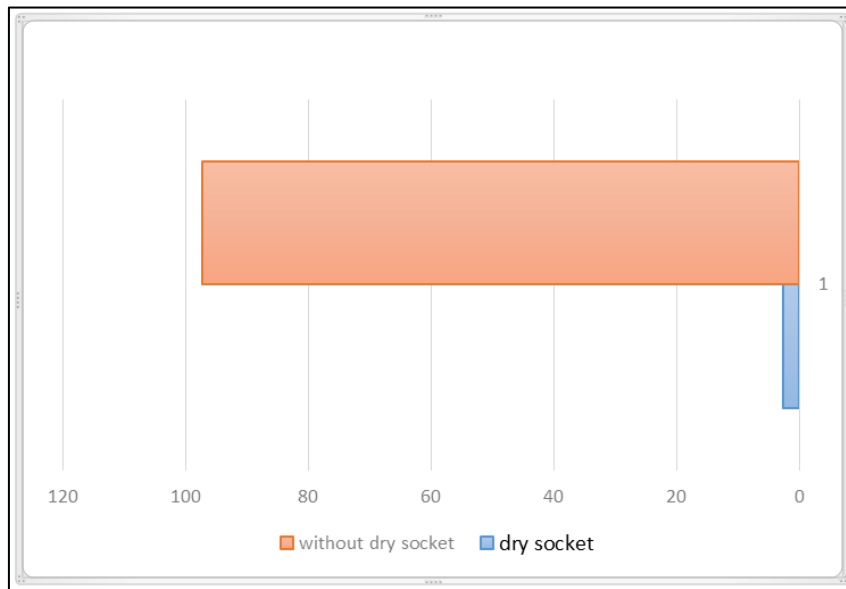


Figure (1): Representing the incidence of dry socket after extraction of 1600 tooth in 994 patient

Most of the participants in this study were female 56.34%, while male were 43.66% . Dry sockets

were present 1.51% and 1.11% in female and male respectively Table (1).

Table (1): The incidence of according to Gender

Gender	Total patient		Dry socket		Without Dry socket	
	No. of patients	Percentage(%)	Number of patient	Percentage (%)	Number of patient	Percentage (%)
Male	434	43.66%	11	%1.1	423	42.56%
Female	560	56.34%	15	1.51%	545	54.83%

Initially, the peak incidence of dry socket were 12 cases at 18-30 years. Then in patients between the ages of 31 -49 years old had 6 dry sockets. Finally, in

patients of equal or greater age than 50 years there were 8 dry socket Table (2).

Table (2): Distribution of dry socket according to age

Age	No. of patients	Percentage (%)	Deviation
18-30	12	46.15%	-3.33
31-49	6	23.08%	2.67
≥50	8	30.77%	0.67

According to arch the mandibular arch represent 65.38%, while the maxillary arch was 34.62%

form all cases that suffered from dry socket after tooth extraction Figure (2).

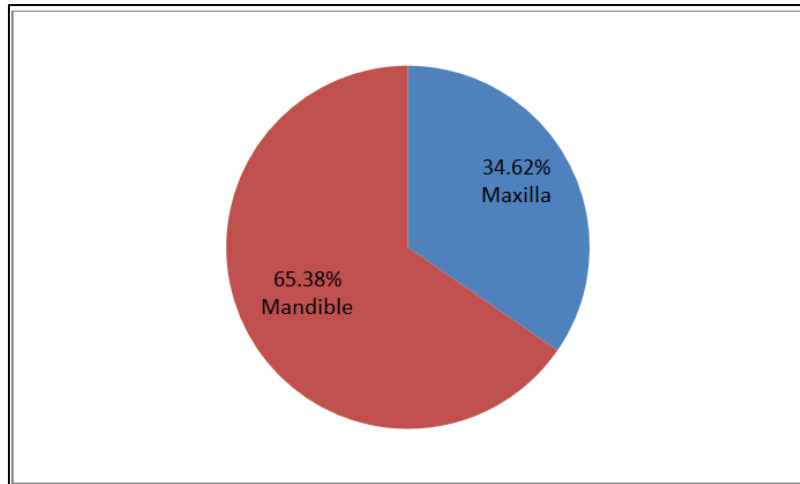


Figure (2): Representing the distribution of dry socket according to the affected arch

The dry socket distribution by operator in this study shows that there is an increase in cases extracted

by supervisors than those extracted by students Figure (3).

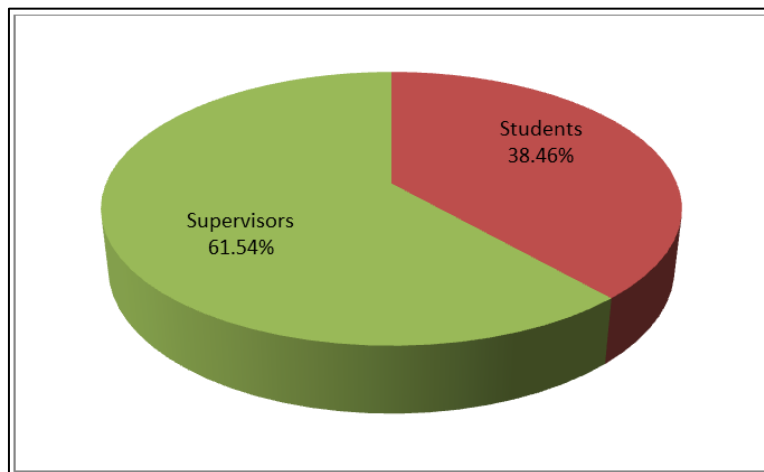


Figure (3): Representing the incidence of dry socket according to the Operator

In this study, the extraction technique plays a role in dry socket distribution. There were 69.23%, 11.54%, 3.85%, and 15.38 with simple extraction,

separation of roots, flap without osteotomy and flap with osteotomy, respectively. Table (3)

Table (3): Prevalence of dry socket according to extraction technique:

Extraction technique	No. of patients	Percentage(%)
Simple extraction	18	69.23%
Root separation	3	11.54%
Flap without bone removal.	1	3.85%
Flap with bone removal	4	15.38

There are other factors evaluated to determine the extent of dry socket were the number of local anesthesia cartridges with vasoconstriction table (4), the

single and multiple teeth extraction figure (4), in addition to whether the patient was a smoker or a non-smoker figure (5).

Table (4): Distribution of dry socket according to the number of local anesthesia cartridge

Number of cartridges	No. of patients	Percentage (%)
One cartridge	11	42.31%
Two cartridges	15	57.69%

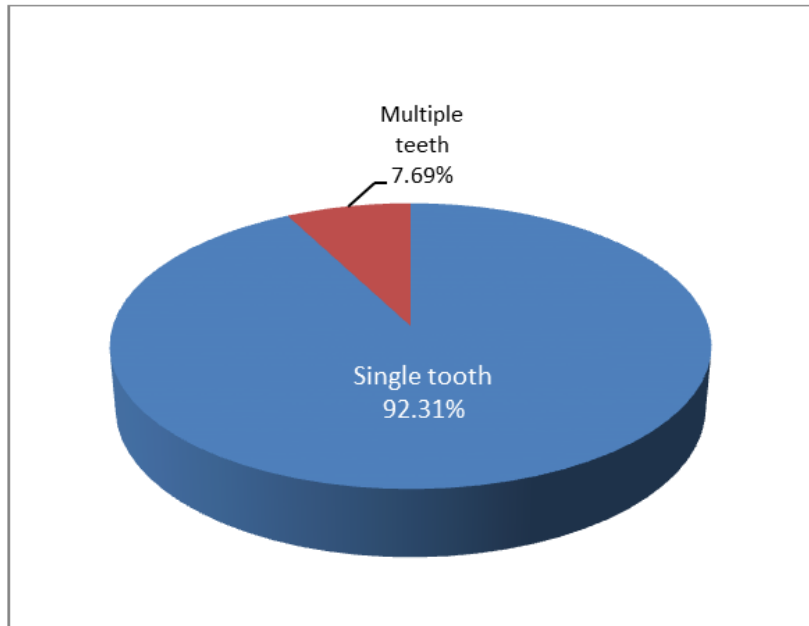


Figure 4: Prevalence of dry socket according to number of teeth extracted

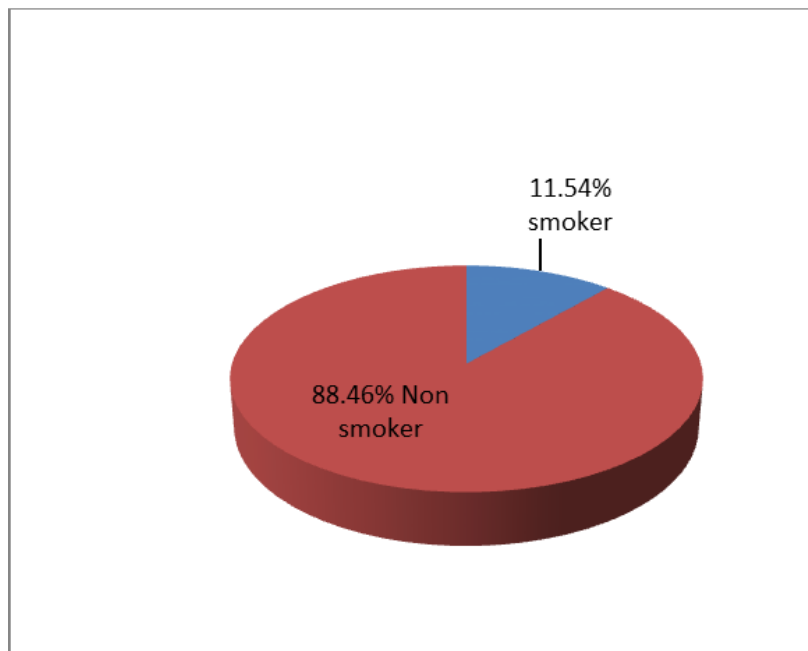


Figure 5: Prevalence of dry socket in relation to smoking

Distribution of dry socket according to regularly used medications Prior to tooth extraction, 26 patients were taking non-steroidal anti-inflammatory drugs (NSAID's) and 2 patients were taking oral contraceptives. This indicates that all patients do not have systemic disease.

DISCUSSION

The dry socket is the most common complication after tooth extraction. The current study was designed to determine the prevalence of dry socket in Yemeni patient after extraction of teeth. It represent %2.6. This was in accordance with Murthi *et al.*, [12],

who reported a distribution close to the percentage of dry socket.

According to the gender in this study, a higher prevalence of dry socket was in females compared to males. It represents 54.83% in female and 42.56% in male. This was in agreement with Assari *et al.*, [13]. However, this is inconsistent with Revati Singh *et al.*, [14], who concluded that the highest prevalence of dry socket was in males 55.56.% and 44.44% in females after extraction of mandibular third molar, This goes parallel to that of Alsaleh *et al.*, [15].

This study is consistent with Nusair *et al.*, [3], the incidence of dry socket among the age group from 18 to 30 years were most frequently than other age group. While, Previous studies in contrast with this study were dry socket prevalence and incidence study conducted by Revati Singh *et al.*, [14]. This study revealed that the most common age group involved in dry socket prevalence were most frequently at age group more than 50 year.

In this study the mandibular jaw was more effected to dry socket than maxillary jaw due to thickness and density of bone which cause difficulty in extraction and decreased vascularity.

Operator skill is a major factor in dry socket. In this study there was an increase in dry socket in the cases extracted by supervisors than in those extracted by students. This large variance in the incidence of dry socket is largely due to the difficulty of extracting teeth that are extracted by maintainers. It differs from Oginni *et al.*, [16] who reported that less experienced operators achieved a higher percentage of dry socket after tooth extraction.

The prevalence of dry socket following the use of one cartridges of local anesthesia was 42.31%, whereas it was 57.69% following the use of two cartridges. This was explain by Upadhyaya *et al.*, [17], there was no role in the incidence of dry socket following the extraction of teeth requiring local anaesthesia with vasoconstrictors in infiltration and regional block.

This study aimed to assess the prevalence of dry socket which was higher after extraction of single tooth than multiple tooth extractions as it was 92.31% and 7.69%, respectively, and this was confirmed by several studies [3].

The smoker patients in the current study was indicated less incidence of dry socket 11.54% than the non-smokers by 88.46%. However, it was inconsistent with the study of Eshghpour *et al.*, [18] who reported that dry socket in smokers and oral contraceptive takers are high risk groups.

All cases of dry socket in this study took NSAIDs. However, other studies report other variables reported, No association has been found with the development of dry socket such as tobacco or contraceptive use, and medications [19, 20].

CONCLUSION

The dry socket is the most common complication after tooth extraction in Oral Surgery Clinic of the faculty of Dentistry, Sana'a University. The incidence of dry socket was more happened in young adult, female, single tooth in mandible and with patients taking non-steroidal anti-inflammatory drugs

before extraction therefor, It is recommended that preventive measures be used in these patients.

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