

SERIOUS POST EXTRACTION COMPLAINT

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ABSTRACT

This study was conducted to determine the predisposing factors for the development of dry socket among the patients of Peshawar Dental Collage Hospital, Khyber Pakhtunkhwa - Pakistan. Two thousand five hundred and twenty six mandibular and maxillary extractions were done over a period of one year. The data were recorded on two separate proformas and were entered in SPSS version 15 (WHO). Analysis was done to determine the frequency and percentages for all variables.

Total of 1.20% patients developed signs and symptoms of dry socket after 3-4 days. Male to female patient ratio was 1:1.5. Peak incidence occurred during 36-45 years age. Majority of patients were healthy at the time of extraction. Diabetic patients, smokers and female taking contraceptive pills frequently reported with dry socket. More dry socket was seen in Posterior mandibular extractions. Intra-ligamental anesthesia and surgical extractions with flap elevations resulted in dry socket. Majority of patients who didn't follow post extraction instructions presented more with dry sockets.

It was concluded that formation of dry socket can be prevented by taking proper history of the patient, prescribing antibiotics for infections and avoiding excessive use of local anesthetic with adrenaline. Atraumatic surgical extraction will reduce the chances for the development of dry socket. Proper post extraction instructions and scheduled follow ups will further reduce the chances for dry socket.

Key Words: Dry socket, predisposing factors.

INTRODUCTION

Dry socket is one of the most common post extraction complaints of patients that develop within 2 to 4 days after surgery.^{1,2} It is more frequent following mandibular third molar extraction.³ The literature shows variation in its incidence. It ranges from 1-4% of extractions and 41% of mandibular third molar extractions.⁴ It occurs due to the disintegration of the blood clot by fibrinolysis and is commonly observed in patients 40 to 45 years old.^{5,6} Many factors contribute to the occurrence of dry socket e.g. patient related factors (gender, systemic conditions, site of tooth, preoperative infection, negligence of post extraction instructions etc), dental surgeon related factors (low experience level), technique and use of local anesthetics with vasoconstrictor.^{7,8}

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Pain is most important symptom of dry socket and it varies in frequency and intensity.⁹ It can be reduced through the use of antibiotics (Amoxil, Flaygl), mouthwashes (chlorhexidine), steroids and intra-alveolar medicaments (Alvogyle).^{9,10,11} To prevent above mentioned complications, strict guidelines for maintaining an aseptic field during the procedure and the correct indication and use of the surgical technique, proper instructions and use of medications like antibiotics, analgesics, antiseptic agents, and combinations must be followed.^{8,12} The management of dry socket includes reassurance of the patient, irrigation, and placement of intra-alveolar dressing of eugenol with lidocain (Alvogyle) for 3 days.^{13,14} This study was conducted to determine the predisposing factors for the development of dry socket seen among patients of Peshawar Dental Collage and Hospital, Peshawar, Khyber Pakhtunkhwa - Pakistan.

METHODOLOGY

Total of 2526 extractions were performed over a period of one year from May 2012 till May 2013 at the Oral and Maxillofacial Surgery Department, PDC KPK. Among these, 1280 were male and 1246 were female

with Male to female ratio of 1:1.5. The age range was 15-60 years (mean, SD±= 35.4 years, ±4.45). Patients reporting with empty socket, inflamed borders and sever pain after 2-3 days following extraction were included and those with infection, abscess, limited mouth opening (trismus) were excluded from this study. Two proformas were selected from the study of Mohammad and Abu Younas¹⁴ to collect relevant data regarding dry socket. One was filled before extraction (Extraction sheet) and other after the development of dry socket (Dry socket). Informed consent was taken from every patient. Instructions were given to the patient after extraction and regular follow ups were scheduled after 2-3 days. Patient reporting with dry socket were thoroughly assessed clinically and radiographically to fill the Proforma. The data from both Proforma were entered into computer using SPSS version 15 and anal-

ysis of all variable was done to determine frequency and percentages.

RESULTS

The overall frequency of dry socket was 1.20% (29cases of dry sockets in 2526 extractions) presented after 3-4 days with empty socket and inflamed borders of extraction wound. Among 29 cases, male to female ratio was 1:1.5. Majority of patients who reported with dry socket were in 36-45 years age group (mean, SD, 35.4±14.95). Table 1.

Fifty eight percent (n=17) patients were healthy at the time of extraction. Diabetes was found to be the most prevalent systemic disease (n=6, 20.68%). Table

TABLE 1: DRY SOCKET AND AGE DISTRIBUTION

| Age in years | 15-25 years | 26-35 years | 36-45 years | 45-55 years | 56-65 years |
|--------------|-------------|-------------|-------------|-------------|-------------|
| Dry socket | 2 (6.89%) | 4 (13.7%) | 13 (44.82%) | 7 (24.13%) | 3 (10.34%) |

TABLE 2: HISTORY REGARDING DRY SOCKET FORMATION

| History | No. of patients (n) | Percentage |
|-------------------------------------|---------------------|------------|
| History of systemic diseases | | |
| None | 17 | |
| Diabetes mellitus | 6 | 58.60% |
| Hypertension | 4 | 20.68% |
| Ischemic heart diseases | 2 | 13.79% |
| History of Medication | | 6.89% |
| None | 14 | 48.27% |
| Hypoglycemic agents | 6 | 20.68% |
| Anti Hypertensive | 4 | 13.79% |
| Oral contraceptive | 2 | 6.89% |
| Aspirin | 2 | 6.89% |
| History of Smoking | | |
| Smokers | 8 | 27.58% |
| Non-smokers | 21 | 72.41% |

TABLE 3: TEETH WITH INFECTION AND DRY SOCKET FORMATION

| Reason for extraction of tooth | Maxillary teeth | Mandibular teeth |
|----------------------------------|-----------------|------------------|
| Advanced caries | 300 (11.9%) | 696 (27.55%) |
| Periapical infection | 228 (9.02%) | 472 (18.68%) |
| Periodontal diseases with caries | 224 (8.86%) | 300 (11.87%) |
| Periodontal diseases | 75 (2.96%) | 150 (5.93%) |
| Orthodontic extraction | 20 (7.91%) | 55 (2.17%) |
| Dry socket in teeth | | |
| N=29 (1.20%) | 7 (24.13%) | 21 (72.41%) |

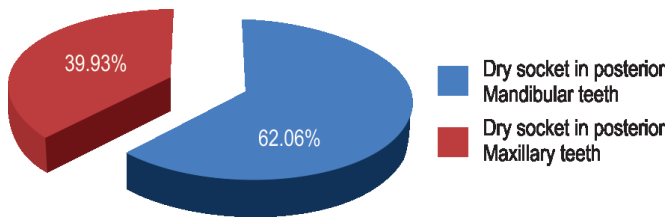


Fig 1: Dry Socket

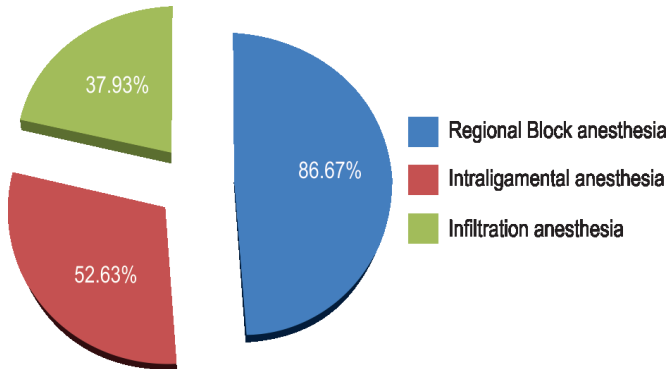


Fig 2: Relation of dry socket and local anesthesia with adrenaline

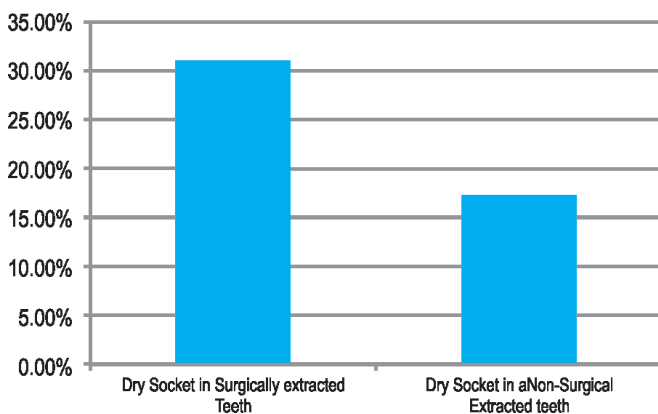


Fig 3: Dry socket; Surgical Vs Non surgical extraction

2 Among 2526 extractions, mandibular anterior and posterior teeth constituted 1800 (71.25%) of total extractions. Among 29 cases of extractions 18 (62.06%) posterior mandibular teeth (premolars, molars) presented more with dry socket. (Fig 1) Most common reason for the extraction of tooth was advanced caries (n=996). Table 3 Eleven (37.93%) with infiltrated and 13 (86.67%) with block anesthesia developed dry socket. Intra-ligamental anesthesia was given in 19 (44.33%) cases and 10 (52.63%) cases developed dry socket. (Fig 2). Surgical extraction with flap elevation and bone cutting presented more with dry socket (n=9, 31.03%). (Fig 3).

Seventeen (55.17%) cases didn't follow proper instructions after extraction and ultimately developed dry socket. All cases (99.98%) dry socket responded well to alvogyle dressing placed for 4-5 days.

DISCUSSION

Dry socket is the most common post extraction complaint among patients of oral and maxillofacial surgery.¹⁵ The study conducted by Esphghpour 3 and Lagaras 15 showed the overall incidence of dry socket is unavoidable and ranges from 5.4% to as high as 13.5% in third molars extractions. In this study, the incidence reported was less than the study done by Esphghpour 3 and Lagaras.¹⁵ This might be due to number of patients, technique of extraction, skills of surgeon, patient related factors, type of tooth etc. Peak incidence of dry socket occurred at the age of 36-45 years and is similar to the study conducted by Noroozi 2 and Daly.

This is contrary to the claim of Upadhayaya and Humagain¹⁶ that dry socket occurs before 11 years and after 61 years. Also at variance with other reports¹⁷ but in concordance with that of Babar¹⁸ present study shows the same peak incidence.

In the present study females reported more with dry socket and this is in accordance with the study of Upadhayaya and Humagain.¹⁶ This is in contradiction to the study of Mohammad and Abu Younis¹⁴ as they claim no gender difference in occurrence of dry socket.

In this study patients with underlying systemic conditions like diabetes, has developed dry socket frequently. Two female taking contraceptive pills also developed dry socket. These findings correlate well with the study of Mohammad and Abu Younis.¹⁴ Also study conducted by Babar¹⁸ showed similar predisposing factors in development of dry socket. Eight patients (27.58%) were smokers who developed dry socket in this study. It also correlates with the study of Krishman and his colleagues¹⁹ and Sweet.²⁰

Among 29 cases of dry socket even healthy individuals developed dry socket due to negligence of oral hygiene instructions following surgical or non surgical extraction. The study of Lodi¹³ and Kolokythas²¹ also emphasize the importance of post extraction instructions and follow up as best prevention tool for the development of dry socket. The study of Yenogopal²² also correlates well with this study and shows that underlying systemic conditions and smoking plays significant role in the development of dry socket.

Sixty-two percent of posterior mandibular extractions presented with dry socket. The wide range of study conducted by Khithab²³ and Abedal Wahaba²⁴ shows similar findings. The Hedstrom²⁵ and Malwaki²⁶ discussed the role of anesthesia in the development of dry socket and found that hypovascularity due to local anesthetic agents affects the healing process. Also the route chosen for anesthesia act as predisposing factor for the development of dry socket. In the study of

Mithila²⁷ intra-ligamental and posterior mandibular block anesthesia presented more cases with dry socket than when infiltrations anaesthesia was given.

Nine cases of dry socket had surgical extractions with flap elevation and bone cutting. The study conducted by Browe¹⁰ and Serra²⁸ discussed the trauma induced by surgical procedure verses the non-surgical extraction and correlate well with the present study.

CONCLUSION

It was concluded that formation of dry socket can be prevented by taking proper history of patient, prescribing antibiotics for infections and avoiding excessive use of local anesthetic with adrenaline. Atraumatic surgical extraction will reduce the development of dry socket. Proper home care instructions after extraction with follow ups for 3-4 days will further reduce the chances dry socket. Intra alveolar dressing with Alvogyle showed quicker healing.

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