

Prevalence of Dry Socket Among the Patients Reporting for Extraction to Khyber College of Dentistry (KCD), Peshawar.

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Abstract

Aims: The main objective of the current study is to determine the Prevalence of dry socket among the patients reporting for extraction to Khyber College of dentistry (KCD), Peshawar.

Material and Methods: A hospital base descriptive cross-sectional study to determine the prevalence of dry socket among the patients reporting for extraction to Khyber College of dentistry (KCD), Peshawar. The duration of the study was from May 2018 to May 2019. Our data collection was through proforma, and convenience sampling technique was applied.

Results: among 356 patients, 89(25.0%) patients were having dry socket, while 267(75.0%) patients were no this complication. Dry socket was more common in males than females in our study. Mandibular molars were most commonly involved. More common sign and symptom was empty socket after developing dry socket. Onset of symptoms for dry socket was 24 hours after extraction more commonly reported.

Conclusion: Dry socket was found as an uncommon post extraction sequela. Males were mostly affected than females. Lower jaw was mostly targeted. Empty socket was most common sign and symptom of dry socket that occurred after extraction.

Keywords: Dry socket, descriptive cross-sectional study, convenience sampling technique, prevalence, and alveolar osteitis.

Introduction:

Dry socket is the most frequent postoperative problem after tooth extraction. In 1986 Crawford described this term for first time.¹ This problem occurs after 2 to 4 days of tooth extraction. It has also known as alveolar osteitis(AO), localized osteitis (LO), postoperative alveolitis (POA), osteomyelitis (OM), septic socket (SS), necrotic socket, localized, sicca dolorosa, fibrinolytic alveolitis etc.² The clinical features of alveolar osteitis (AO) are pain with varying severity from the extraction socket, disintegration of formed blood clot, and halitosis.³ Dry socket (alveolar osteitis) is a painful dental condition that sometime occurs after extraction of permanent adult tooth. It occurs either due to failure in development of blood clot at extraction site, or clot is dislodged/dissolved before healing of wound.⁴ Commonly at the site of tooth extraction a blood clot is formed. This clot forms a protecting layer on the underneath bone and nerve endings present in the bare tooth socket. Beside this, it also helps in the development of new bone and growth of soft tissue upon the clot.⁵ When the underneath tissues are exposed, this results in severe pain not only in the socket but in the regions of side of face, towards the ear and temporal

region. Besides this, the frontal, ocular, maxillary, and frontal regions are also involved sometimes.⁶

When dry socket develops the patient generally experiences pain after 1-3 day of extraction as a result of inflammation. When empty socket is filled with food debris the pain increases.⁷ The major reasons of dry socket include microbial contamination of socket and injury at surgical area from a complicated extraction such as impacted tooth.⁸

Dry socket treatment concentrates on decreasing symptom, specifically pain. The treatment includes flushing the socket, dismissal of debris or food particles that may cause pain or potential infection, medicinal dressing, and analgesics.⁹

Epidemiologic surveys reveal significant information on prevalence and harshness of a disease in a specific resident and can be used to predict the disease pattern, development, threat factors and treatment requires. Several studies have been carried out globally on dry socket. A study done in United States discovered that the prevalence of AO ranged between 0.5% to 5%.

Moreover, the prevalence of AO after extraction of mandibular third molars vary between 1% to 37.5%. Also, surgical extraction of teeth results in higher prevalence of AO.⁶

A study done in Jordan reported the prevalence of dry socket as 4.8%. Some patients had multiple dry sockets, which made the overall prevalence of 6.4% per patient. Furthermore, the prevalence (per tooth) of dry socket after non-surgical extractions and surgical extraction was 3.2% and 20.1% respectively.⁷

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A study in Pakistan showed that 3.3% reported with dry socket after extraction and there was slightly higher incidence of dry socket noted in females as compared to males although results were not significant. 2.6%). Moreover, it developed more in (6.1%) in smokers as compared to non-smokers (1.9%).¹⁰

The main objective of the current study was to determine the Prevalence of dry socket among the patients reporting for extraction to Khyber College of dentistry (KCD), Peshawar.

Materials and Methods:

It was descriptive cross-sectional study done at Khyber College of Dentistry (KCD) Peshawar. The duration of study was one year, and sample size was 356 while sampling technique was non-probability convenience sampling. The ethical approval was taken from review committee of KCD. The inclusion criteria was every patient who had extracted permanent tooth/teeth and patients who came back with pain within 1 week after extraction having empty socket/socket with food debris while exclusion criteria was patient who had extracted deciduous teeth.

Every aspect of the research study was evaluated to ensure the privacy and confidentiality of the study participants. The study participants gave their verbal agreement, and those who did so were asked to fill out the Proforma completely with answers to a few questions. The completed proforma contained information about the patient's demographics, smoking habits, medical history, medications, teeth extracted, indications for each tooth's extraction, extraction technique, operator experience level, postoperative instructions, socket affected, signs and symptoms, onset of symptoms, and treatment given.

Results:

Out of 356 participant 183 were males while 173 were females in which only 52 (28%) males and 37 (21%) females had onset of dry socket as shown in figure 1.

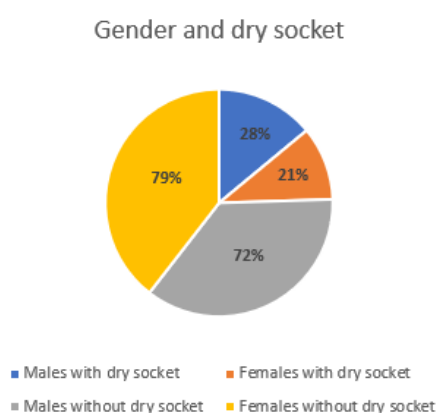


Figure 1: Distribution of Patients

The patients who reported with dry socket having any systemic disease were 36 patient who had no systemic disease came with complaint of dry socket. The details

regarding systemic disease and dry socket are given in table 1.

Table 1: Systemic disease and Dry Socket

Presence of Systemic disease		Presence of dry Socket with patients having systemic disease	Presence of dry Socket with patients without systemic disease
Yes	No	36	53
130	226		

Regarding previous dental history 280 patients had history of tooth extraction in which 76 developed dry sockets previously while 13 patients who extracted teeth for 1st time established dry socket. When considering extraction technique 64 (24%) patients and 25 (23%) patients who developed dry socket had flap without bone and flap with bone respectively. Regarding reasons of extraction, there were various reasons such as caries, orthodontic treatment, periodontal diseases, and others. All these details are given in table 2.

Table 2: Previous Dental History and Presence of Dry Socket

Previous Dental History		Presence of Dry Socket	
		Yes	no
tooth-extracted	Yes	76	204
	No	13	63
Extraction-technique	flap without bone	64	197
	flap with bone	25	70
Reason-for-extraction	advance caries	32	164
	orthodontic treatment	34	68
	advance periodontal disease	13	17
	Pericoronitis	7	9
	other specified	3	9

When considering sign and symptoms and onset of symptoms 33 patients experienced pain and in 41 patients' symptoms appeared 24 hours after extraction. The details of which are given in figure 2 and figure 3 respectively.

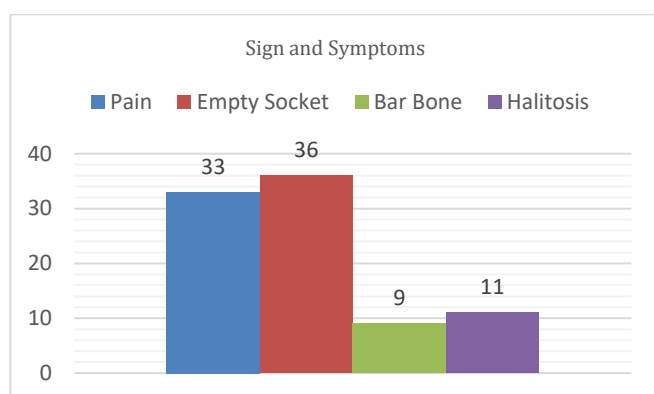


Figure 2: Signs and Symptoms of Dry Socket

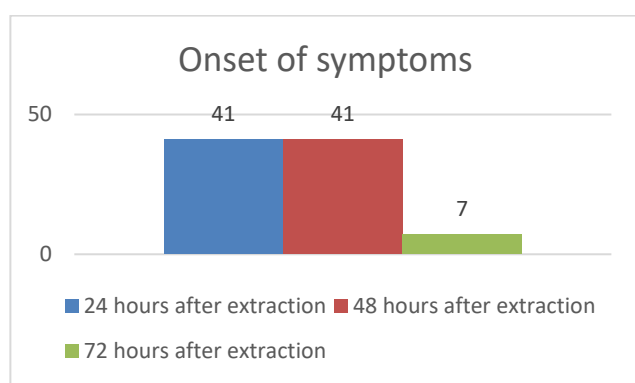


Figure 3: Onset of Symptoms of Dry Socket

Discussion:

AO is a painful condition that rarely occurs after extraction of permanent tooth. It develops when the blood clot at the tooth extraction site either dissolves or dislodges before the wound has healed, or it fails to form at all. In the present study the incidence of dry socket is 25.0% which is much higher than studies done in other countries.^{5,7,10-13}

Similarly, a study conducted in Saudi Arabia reveal that the incidence of dry socket as 1.2%, which is in contrast with our study. This may be due to poor oral hygiene in our society.¹⁴⁻¹⁵

Coming towards gender involvement a study conducted in Pakistan reveal that the incidence of dry socket was (4%) in female and (0.5%) in male. which is in contrast with our study. This may be due to more risk factors exposure of male in our findings i-e smoking, gum infection and Dislodgement of the clot.^[3] A study conducted in Malaysia revealed that male were more affected than female, which is in favor of our study.^[16]

In our study we find out that the main reason for tooth extraction was advanced caries. A study conducted in Palestine reveal that the main reason for extraction was advanced caries, which strongly supports our current conducted study.¹¹ Another study conducted in England which reveal that the main reason for extraction was advanced caries, which also strongly supports our current conducted study.¹ A Nigerian study revealed that the most common cause for tooth extraction is acute apical periodontitis, which is in contrast with our study.¹²

In our study we found out that the more common sign

and symptom was empty socket. The study conducted in Jordan shows us empty socket as the more common sign and symptom, which strongly supports our current conducted study.³ A study conducted in Jordan reveal that the most common onset of sign and symptom was after 24 hours of extraction. In our study we also found the same result.⁷ A study conducted in Pakistan shows us the most common onset of sign and symptom as, was 48 hours after extraction. In our study we also found the same result.¹⁸

The occurrence of AO after extraction of mandibular tooth is higher as compared to maxillary tooth extraction. The findings of current study also showed the same result, i.e 78% of the complications occurred after Mandibular extraction.³ A study conducted in Nigeria also concluded mandibular extractions more prone to dry socket occurrence.¹²

Conclusion

Dry socket occurrence is a painful condition, which was found as uncommon post extraction sequelae. Males were mostly affected than females. Lower jaw was mostly targeted. Empty socket was most common sign and symptom of dry socket that occurred after extraction.

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Author Contributions

1. Summia Bibi- Methodology of study and Data Collection
2. Abdul Basit- Literature review and Original Draft
3. Uzma Siddique- Manuscript review and data interpretation
4. Hina Shabbir-, Manuscript writing and Data Analysis
5. Muazzam Ali- Conceptualization and Literature review