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PREVALENCE, CLINICAL PICTURE AND RISK FACTOR OF DRY SOCKET IN ORAL SURGERY DEPARTMENT OF DISTRICT HEADQUARTER HOPITAL, CHARSADDA, PAKISTAN

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Abstract:
Objective: *The aims of this study were to determine the prevalence, clinical picture and risk factor of dry socket at Oral Surgery Department of District Head Quarter (DHQ) Hospital Charsadda.*
Methodology: *Two specially designed questionnaires were completed over a four month of period. One questionnaire was completed for every patient who hadextracted one or more permanent teethin the Oral Surgery department. The other questionnaire was completed for every patient who returned for a post-operative visit and was diagnosed with dry socket during the study period.*
Results: *There were 183 patients who extracted the teeth in oral surgery department. The overall prevalence of dry socket was 4.9%. There was no statistically significant association between the development of dry socket and age, sex, medications taken by the patient, indications for the extraction and extraction site.*
Conclusion: *The overall prevalence and clinical picture was comparable to the previous finding reported in literature. The prevalence of dry socket was low due to maintenance of oral hygiene status after tooth extraction. Nowadays each and every practitioner gives postoperative instruction to every patient after Exodontia.The practitioner prescribed medication to the patients due to which the chances of dry socket become minimum.*
Key words: *Exodontia, Dry socket, prevalence, sign and symptoms and risk factors.*

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INTRODUCTION:

Dry socket, also called as Alveolar Osteitis [1]. Crawford accustomed the term 'Dry Socket', early in 1896 [2]. The dry socket has eighteen different delineations but the too common definition was the 'post-operative ache in and around the socket which become high in the third and fourth day after exodontia, due to partial or complete decay of blood clot in the alveolar socket [3]. Its occurrence has been recorded to fluctuate from 0% to 35%, more than 35% and most usual in the extraction of Mandibular third molar [4]. The occurrence of the dry socket is 10 times more in Mandibular Molar than Maxillary Molar [5].

The exact cause and pathogenesis of Alveolar Osteitis is yet contentious the most acquired theory and recent literature is the breakdown of the blood clot through fibrinolysis [2]. Crawford in 1896 was the first who delineated the clinical aspects of dry socket. Disintegration of blood clot happens after the second or third day of tooth extraction. The socket is completely or partially exposed extremely surfaces of bone, socket is covered by necrotic tissues and grey shallow layer of debris and inflame gingival margin [6]. The patient suffers from severe pain in mandible and pain is radiating from the socket toward ear and temporal region, while in maxilla pain mediate from the socket toward the frontal and ocular region. Complain of the patient were the bad taste from the mouth [7].

Several studies display thatthe dry socket happen 5 times more in female as compared to male. This may be due to use of oral contraceptive drugs and menstrual cycle. Maximum chances of dry socket have been occurred between 18 to 33 year of age [8]. Dry socket rarely occurs after 50 year of age. Adult patient having age above 21 year of age require more time for recuperation after surgery of third molar [5]. Dry socket is become increases with some diseases that minimize the blood supply to the extraction site for example diabetes, jaw become sclerotic in Paget diseases and in Albers Schonberg diseases and when the jaw is exposed to radiotherapy [9]. It was proved medically and scientifically that smoking can cause many variety of critical diseases, during the tooth decaying [10]. Chances of dry socket increase with severe trauma during tooth extraction, particularly in those procedures who involves flap reflection and maximum removal of bone. Lower third molar surgery is a long and much difficult procedure involving reflection of flap and excessive removal of bone. The third molar region is the most common site of occurrence of dry socket.It was observed that anaerobic microorganism like Treponema denticola have plasmin like fibrinolytic activity, which become the risk factor to increase the chances of dry socket [5].

This study was conducted with an aim to determine to determine the prevalence of dry socket both in male and female, the risk factor of dry socket and sign and symptoms of dry socket.

MATERIALS AND METHODS:

The study is conducted in the Oral Surgery Department of District Head Quarter (DHQ) hospital Charsadda. This is a Descriptive Cross-sectional study, Non probability convenient sampling technique was used. The study was conducted from September 2017 to December 2017. A total of 183 samples were selected from adult, physically and mentally healthy patients; with or without other systemic diseases. For data collection procedure, first the approval was taken from the Research Ethical Committee Khyber Medical University (IPMS) and then from the DHQ hospital, Charsadda. The study included two proforma, one for the dentist and the other one for the patient. After examine the patient, the Surgeon prescribed the treatment. If the treatment includes extraction, they advised the diagnostic tests e.g. HCV, HbsAg and HIV. The patient who was medically fit for extraction, the dentist filled the proforma by taking history from the patient, after that the extraction was done by the dentist and gave the post-operative instructions and prescribed the medicines. The Surgeon asked the patient to follow up, if there is any post-operative problem. The patient who has diagnosed dry socket by using the examination instrument, the patient proforma was filled. After that socket was first irrigated with normal saline and pyodine and dressing of Zinc Oxide Eugenol on the socket and also medicated the patient. The data was statistically analyzed through SPSS and Excel.

RESULTS:

In this study we have a sample size of 183 patients in whom we want to find the prevalence of dry socket, clinical features and risk factor of dry socket in those patients who have done extraction. In this sample the male were 79 (43.2%) and female patient were 104 (56.8%).

Table 1.1: Gender wise frequency of extracted patients

	Frequency	Percent	Valid Percent	Cumulative percent
Female	104	56.8	56.8	56.8
Male	79	43.2	43.2	100.0
Total	183	100.0	100.0	

In the whole sample we have found dry socket in 9 (4.9%) patients, in whom male patients were 2 (22.2%) and female patients were 7 (77.8%). The total prevalence of dry socket was 4.9%.

Table 1.2: frequency of dry socket patients

Dry socket					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	174	95.1	95.1	95.1
	Yes	9	4.9	4.9	100.0
Total	183	100.0	100.0		

Gender, age, oral hygiene status, smoking, systemic diseases, indication of tooth extraction, dry socket, onset of pain are the risk factors for dry socket in this study. Different age patients were included in the study ranging from 20 to 50 years. Three ranges were included for age distribution i.e. 20-29years, 30-39years, and 40-50years. For oral hygiene status we gave three options poor, good and fair, at the end we found that 111 (60.7%) patients had poor,59 (32.3%) had good and 13 (7.1%) had fair oral hygiene.

Table 1.3: Frequency distribution of oral hygiene status who done extraction.

Oral Hygiene Status				
	Frequency	Percent	Valid Percent	Cumulative Percent
Fair	13	7.1	7.1	7.1
Good	59	32.2	32.2	39.3
Poor	111	60.7	60.7	100.0
Total	183	100.0	100.0	

In total 9 dry socket patients, 2 (22.2%) were good and 7 (77.8%) patients were poor oral hygiene.

Table 1.4: Frequency of oral hygiene status who had dry socket

Oral Hygiene Status	Frequency	Percent
Dry socket	9	100
Good	2	22.2
Poor	7	77.8

33(18.0%) male patients were smokers while the rest of 150(82.0%) patients were nonsmokers out of 183patients.In total 9 dry socket patients 1 (11.1%)was smoker while 8 (88.9%) patients were nonsmokers.

Table 1.5: Frequency of smoker and nonsmokers who had done extraction

Smoking					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Smoker	150	82.0	82.0	82.0
	Nonsmoker	33	18.0	18.0	100.0
	Total	183	100.0	100.0	

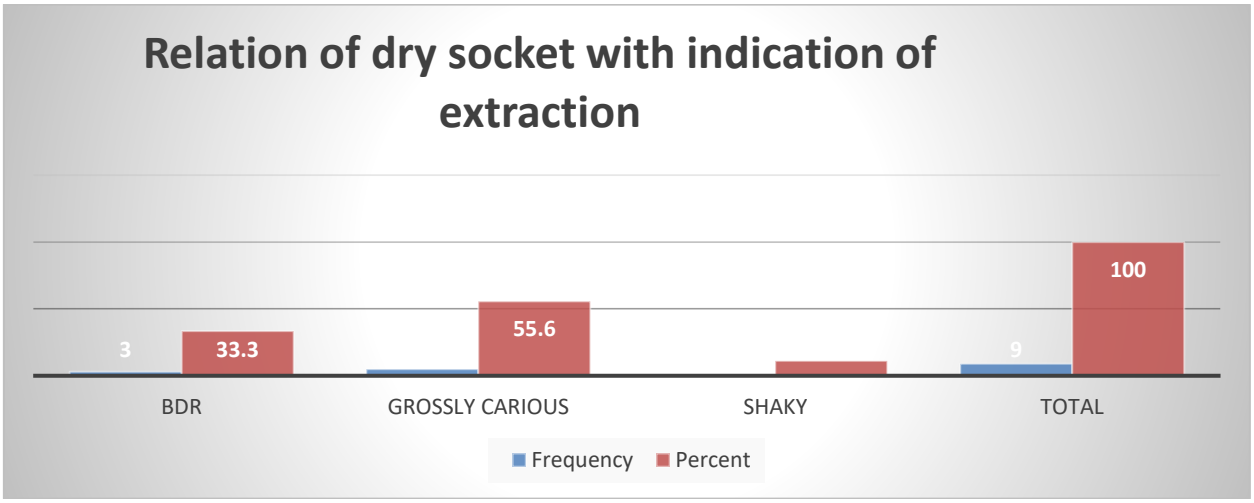
For indication of tooth extraction we gave four options, grossly carious, shaky, BDR, periodontitis.50 (27.3%) patients had BDR teeth, 85 (46.4%) patients were grossly carious, 5 (2.7%) patients had periodontitis and 43 (23.5%) patients had shaky teeth. Out of 9 dry socket patient, 3 (33.3%) patient had extract BDR teeth, 5 (55.6%) patient had extracted the grossly carious teeth and 1 (11.1%) patient had extracted shaky tooth.

Table 1.6 Frequency of indication of extraction

Indication of Extraction				
	Frequency	**Percent**	**Valid Percent**	**Cumulative Percent**
Broken Down Root	50	27.3	27.3	27.3
Grossly carious tooth	85	46.4	46.4	73.8
Periodontitis	5	2.7	2.7	76.5
Shaky tooth	43	23.5	23.5	100.0
Total	183	100.0	100.0	

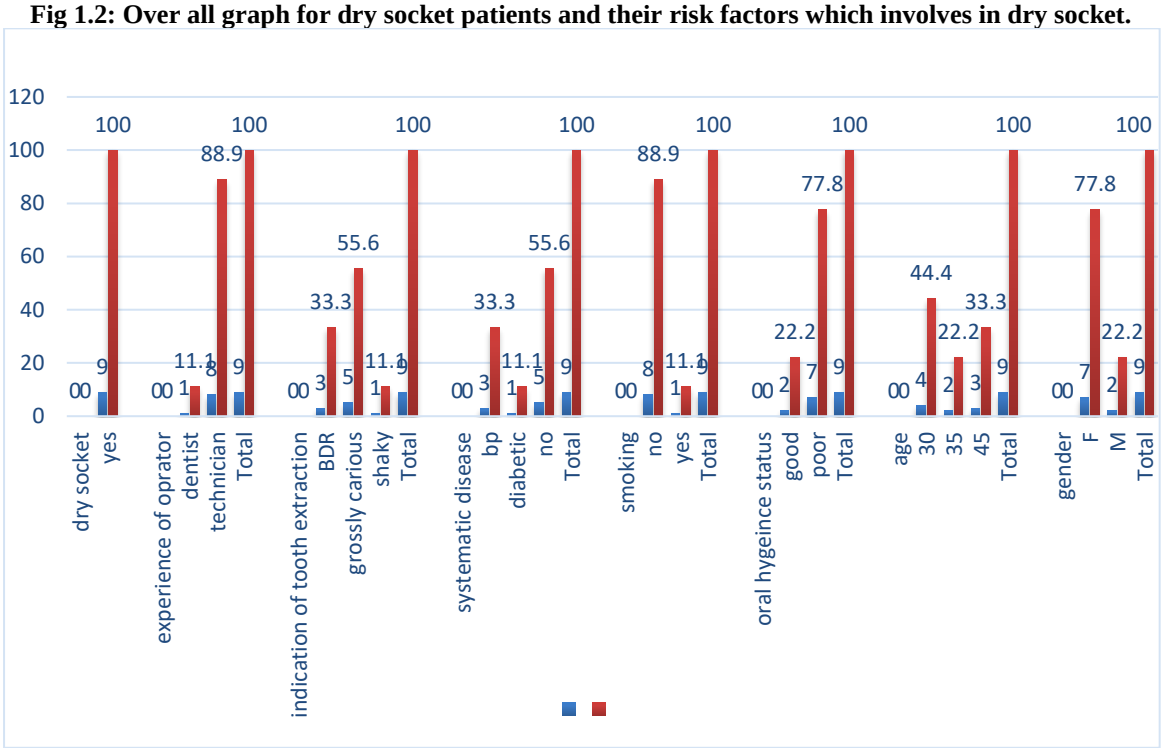
Out of 9 dry socket patient, 3(33.3%) patient had extract BDR teeth, 5(55.6%) patient had extract the grossly carious teeth and 1(11.1%) patient had extract shaky tooth.

Fig 1.1: Graph between dry socket and indication of extraction



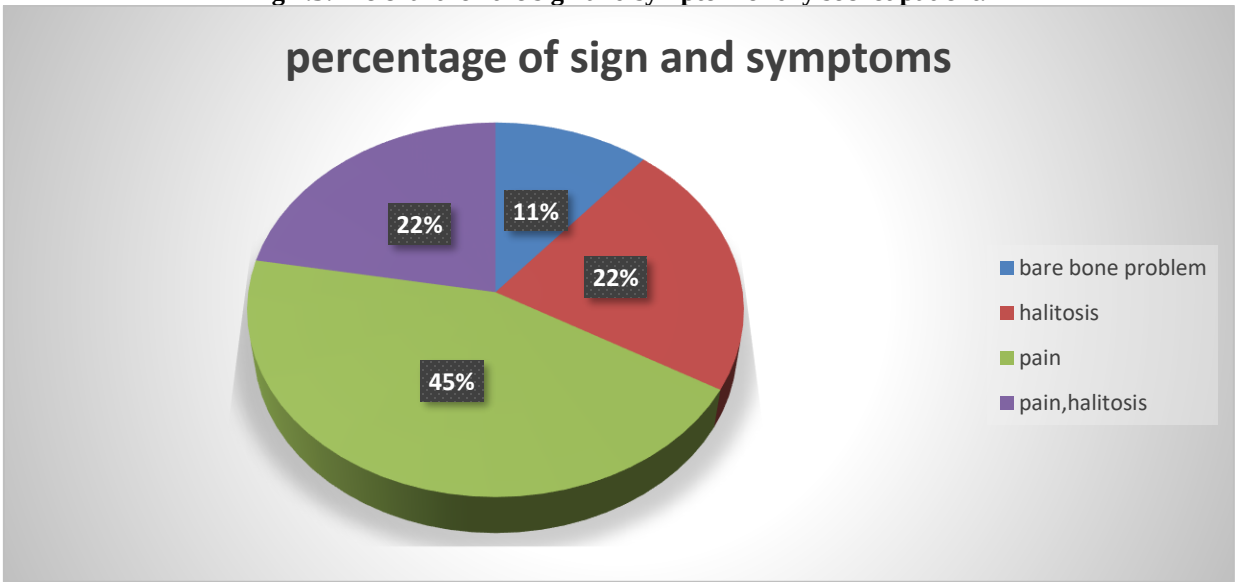
Onset of pain that were started after extraction, had three options 24hrs, 48hrs and 72hrs after extraction.4 (2.2%) patients had onset of pain after 24hrs, 4 (2.2%) patients had onset of pain after 48 hrs and 1 (0.5%) patient had onset of pain after 72hrs of extraction.

Fig 1.2: Over all graph for dry socket patients and their risk factors which involves in dry socket.



For sign and symptoms, we have four options i.e. pain, halitosis, bare bone and both pain and halitosis, and at the end 1 (11.0%) patient had bare bone problem, 2 (22.0%) patients had halitosis, 4 (45.0%) patients had pain, 2 (22.0%) patients had both pain and halitosis.

Fig 1.3: Pie chart for the sign and symptom of dry socket patient.



DISCUSSION:

In India the oral disease load is very elevated in 2012, according to world health organization (WHO) organized the world statistic. These oral diseases infect palate, floor of the mouth, check tongue and periodontium. Oral hygiene maintenance is prime to minimize the chances of infections. There are many different oral cavity infections like periodontitis

(inflammation of periodontium), Alveolar bone absorption, endogenous candida is a fungal microorganism and thus cause oral candidiasis, tooth caries, dryness of mouth, dry socket [5].

Extraction is the most typical process in dentistry. Many patients have compete with the modest to acute ache over different periods not due to the suggestion of exodontia but also scared of ache from having exodontia. Sometimes, scares of suchlike patients literally result in the actual or discerned ache during exodontia depending on the expertise of the operator. Some patient may also have the rigor ache directly after the extraction of the tooth, which may persist for some days after the extraction. Dry socket, also called as Alveolar osteitis [1].

Dry socket is an important clinical complication that is represented by severe pain, usually starting on the second or third day after extraction. The generally accepted cause of dry socket is the increase of local fibrinolysis that cause the disintegration of clot. Certain antifibrinolytic agents when placed on the socket the incidence of dry socket is decreases after extraction [11].

In Iran the incidence rate of dry socket following the surgical extraction of lower impacted third molar was 19.14%.The high rate of incidence of dry socket was due to irregular use of antibiotics or not using the antibiotics according to physician prescription. Trauma also increases the incidence of dry socket [12]. In turkey the overall incidence rate of dry socket was 15%.their high incidence may be due total extraction of teeth on bilateral side of either mandible or maxilla [13].

In Jordan the prevalence of dry socket was 4.8%.smoking and use of open extraction in maximum patients due to which the prevalence of dry socket was 4.8% [4]. In Nigeria, the incidence of dry socket was 1.4%, more female patients had dry socket than male due to poor oral hygiene status [1]. The maximum rate of dry socket is found in Spain in female patients, 6.4%, due to use of oral contraceptive drugs [14].

In Palestine the incidence of dry socket was 3.2% which was minimum due to proper oral hygiene maintenance after extraction. The patients who extract the tooth surgically have more chances of dry socket than non-surgically [15]. According to Chandren et al study in India the incidence of dry socket was 5.37% ,in which female are more prone to dry socket than male due to use of oral contraceptive drugs, maximum dry socket was found in mandible than maxilla [6].

Pakistan, in Karachi the total prevalence of dry socket was 3.3%, which was due to proper maintenance of oral hygiene, 41 patients were found to be affected out of 1246 [2]. The result of this study shows the prevalence, clinical features and risk factor of dry socket at district head quarter hospital, charsadda. The clinical features of dry socket were generally similar to those reported in the literature. The overall prevalence of dry socket was 4.9%. It was mentioned in the literatures that the use of oral contraceptive drugs is a factor that raises the prevalence of dry socket among female patients. The use of oral contraceptive drugs thought to be the reason behind the increased susceptibility of female to dry socket which was minimum in this study. In the present study out of 183 patients, 9 patients had dry socket.

Out of a total nine dry socket, 77.8% patients had poor oral hygiene while 22.2% patients had good oral hygiene, brushed their teeth regularly. Out of these 9 dry socket patients 3(33.3%) were BDR, 5(55.6%) were grossly carious teeth, while 1(11.1%) tooth was shaky.88.9% dry socket patients were nonsmoker while 11.1% was smoker. The prevalence of dry socket was nearly similar to the finding of Nusair YM and MHAyounis that was 4.8% [15].

CONCLUSIONS:

From the result of this study the overall prevalence and clinical picture was comparable to the previous finding reported in literature. The prevalence of dry socket was low due to maintenance of oral hygiene follow after tooth extraction. Nowadays each and every practitioner gives postoperative instruction to every patient after exodontia. The practitioner prescribed medication to the patients due to which the chances of dry socket become minimum.

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