Original Article

Maxillofacial Surgery

Dry Socket following Extraction of Permanent Teeth. A Study

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ABSTRACT

Objective: To find out frequency and clinical presentation of dry Socket following extraction of permanent teeth among patients at Liaquat University hospital Hyderabad.

Study Design: Retrospective Study

Place and Duration of Study: This study was carried out at department of oral & maxillofacial surgery Liaquat university hospital Hyderabad from May 2012 to May 2013.

Materials and Methods: Patients of both genders and all ages were included in the study. They were observed for the presence of dry socket. Patients with previous history of two or more days of extraction, pain, sensitivity on gentle probing of the extraction socket and empty / partially empty socket / halitosis were included in the study. Data was analyzed using SPSS version-17.

Results: A total of 1540 patients who underwent extraction of permanent teeth for various reasons were studied. There were 960 male patients and 580 female patients. Dry socket was found in 110 patients. 64 were male patients and 46 were female patients. Majority of patients were in 3rd decade of life. Mandibular first molar was affected in 42 patients followed by Mandibular 3rd molar in 29 patients. Pain and sensitivity on gentle probing was found in all patients, complete empty socket in 49 patients, partially empty socket in 61 patients and halitosis in 16 patients.

Conclusion: Treatment of dry socket are inadequate and aimed at to soothing. Dry socket site should be irrigated with hot saline packing with a BIPP. Zinc oxide–eugenol paste can be relieving pain.

Key Words: Dry Socket, frequency, permanent teeth

INTRODUCTION

Dry socket is postoperative complication of dental extractions. It has been defined as postoperative pain within and around the socket, which worsens at some point between the first and third post-extraction day, accompanied by partial or total disintegration of the intra alveolar blood clot, with or without associated halitosis.[1,2]

American dentists James Young Crawford first describe the term Dry socket in 1896[,3,4]. Since that time, other terms have been used to describe dry socket: alveolar osteitis (AO), fibrinolytic alveolitis, alveolitis sicca dolorosa, localized osteomyelitis, and delayed extraction wound healing[5,6,7]. Dry socket or acute alveolar osteitis is a common and often very painful and distressing condition for a patient who has recently undergone a tooth extraction[8,9].

Dry socket is a well-known complication after extraction or surgical removal of tooth[10,11]. The incidence of dry socket has ranged from 1% to 4% of extractions, reaching 45% for Mandibular third molars[12]. The clinical features of dry socket present as necrosis or disintegration of formed blood clot, halitosis and pain with a varying intensity from the extraction socket, which usually occurs 2-4 days after tooth extraction and may last for several days to weeks[13,14].

Risk factors that affect blood clot leading to dry socket include excessive extraction trauma, limited local blood supply e.g. Mandibular teeth, use of oral contraceptives, osteosclerotic disease, radiotherapy, use of excessive local anesthesia containing vasoconstrictor, smoking, presence of acute infections and inexperienced operator[15,]

Several modalities have been advocated to reduce the incidence of dry socket in patients. They include the use of antiseptic mouth washes, antifibrinolytic agents, antibiotics, steroids, clot supporting agents and intra-alveolar dressings. As a specific etiology has not yet been determined, it is necessary to follow preventive measures in the daily practice of tooth extraction starting with the patient's medical history[16].

MATERIALS AND METHODS

This study was carried out at the Department of Oral and Maxillofacial Surgery, Liaquat University Hospital Hyderabad from May 2012 May 2013. Patients of both genders and all age groups who have undergone one or more extractions were observed for the presence of dry socket. The diagnostic criteria for dry socket was based on history of extraction of two or more days ago and pain, clinical examination for sensitivity on gentle probing of the extraction socket, halitosis and condition of tooth socket. Radiographs were advised for the

presence of broken root or bony pieces. Pain was measured by Visual Analogue Scale (VAS). According to this scale patients measured their pain subjectively from out of three i.e. mild pain as S1, ranged from 1-4; moderate pain as S2, ranged from 5-7 and severe pain as S3 ranged from 8-10. Sensitivity on gentle probing of the extraction socket, halitosis were considered on all or none basis (present or absent), and Condition of tooth socket was categorized as partial or full empty.
Data was analyzed using SPSS version-17.

RESULTS

In this study a total of 1540 patients including 960 (62.3%) males and 580 (37.7%) females were attended during the study duration i.e. one year period. Dry socket was found in 110 (7.14%) patients including 64 (58.1%) males and 46 (41.9%) females, see Table 1 for male to female ratio. Majority of patients were in 3rd decade (31.9%) followed by 4th decade of life (23.6%).

Table No. 1: Male & Female Participants

Individuals	Total no. of extractions	No. of dry socket	%
Gender			
Male	960	64	6%
Female	580	46	7%
TOTAL	**1540**	**110**	7%

Table No. 2: Age Distribution

Age group	No.of patients	%
11-20	13	11.9%
21-30	35	31.9%
31-40	26	23.6%
41-50	20	18.1%
50 to onwards	16	14.5%
TOTAL	**110**	**100%**

Table No. 3: Distribution of Dry Socket by Site

Site	No: of dry socket
Maxillary incisors	00
Maxillary canine	01
Maxillary premolars	01
Maxillary 1st molar	07
Maxillary 2nd molar	02
Maxillary 3rd molar	06
Mandibular incisors	01
Mandibular canine	03
Mandibular premolars	03
Mandibular 1st molar	42
Mandibular 2nd molar	29
Mandibular 3rd molar	15
Total	110

See Table-2 for details of age distribution. Socket of mandibular first molar was involved in 42 (38.1%) patients followed by Mandibular third molar in 29 (26.3%) patients and Mandibular second molar 15 (13.6%) patients. The details of site distribution are given in Table-3.

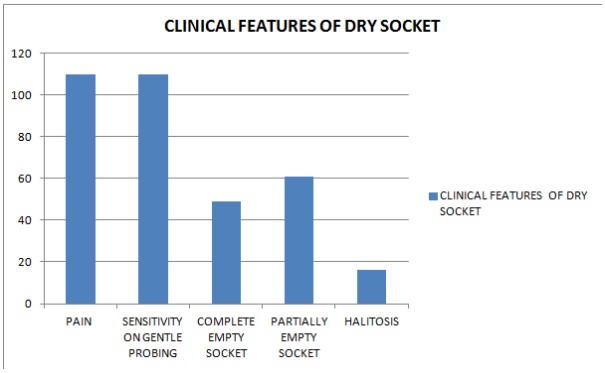

Figure 1: Showing Clinical Features of Dry Socket

Clinical features of dry socket in the patients of the present study are shown in figure 1. All patients measured their pain subjectively as S3 i.e. severe pain on visual analogue scale. Pain and Sensitivity on gentle probing of the extraction socket was present in all patients. Halitosis was present in 16 patients and socket was completely empty in 49 and partially empty in 61 patients.

DISCUSSION

Dry socket is a most common clinical complication after extraction of tooth. It is characterized by severe pain starting after two or three days of extraction. In 1973 Brin found increased fibrinolytic activity associated with the activation of plasminogen to plasmin. This was to be the cause of post-extraction clot dissolution and hence dry socket. [16 17] The etiology of this complication is an increased local fibrinolysis leading to breakdown of the clot, Surgical trauma and bacterial infections remain the acceptable initiating factors of this fibrinolytic activity. The frequency of dry socket in on a daily basis oral surgery is unavoidable. the majority of the studies have agreed the incidence of dry socket in all extractions as ranging from 2% to 4.4%10 and as elevated as 12.5% 11whereas third molar extraction has been associated with an incidence of 0.5% 12 to 15%.[18]

In this study show the frequency of dry socket at the Department of Oral & Maxillofacial Surgery, Liaquat University of Medical & Health Sciences and its clinical features are similar to those reported in the different studies in world.[19.20.]

In this study the difference in the frequency of dry socket between males (6%) and females (7%). This finding similar with the study carried out by amartunga and root[23,24] reported a higher incidence of dry socket in females with a male: female ratio of 2:3. This explanation of can hide behind the fact that urban societies differ from rural ones in smoking habit

between females and males. In rural areas of Sindh, females smoke in a higher percentage than in urban areas of Sindh. Our hospital covers the mostly rural areas of Sindh, so may be one reason of slightly increase incidence of dry socket in female, while western societies whereas others have associated it with the use of oral contraceptive pills, which increase if brinolytic during the menstrual stage.

This study has established an incidence of 7% for all kind of permanent teeth extractions carried out at hospital. This may be due to in our hospital. students of 3rd year, final year BDS and house officer were doing extraction, they had less surgical technique and skill causes more trauma, which documented in the literature trauma is measured as a contributing factor in the pathogenesis of dry socket.[21,22]

This study also showed dry socket to be uppermost in third and fourth decades of life with a peak incidence in the 18-33 year age group which has similar result to other studies.[4.9,15]

Dry socked incidence is most commonly seen in the third molar, second molar and first molars in that order. However in this study we establish the incidence most common in first molar, second molar and third molar of mandibular teeth Sequenced. This is similar to the other studies done regionally and internationally.[6,14.16,] May be hypothesis that hypovascularity as a risk factor in the development of dry socket. Another cause increased bone density and reduced capacity of producing granulation tissue is responsible at molar side.

In this study clinical feature of dry socket was similar to other studies and usually described dry sockets in the literature. Pain and empty sockets were found in all patients, which is in supported by regional and international studies.[17,18,19.20]

CONCLUSION

Treatment of dry socket are inadequate and aimed at to soothing. Dry socket site should be irrigated with hot saline, packing with a BIPP. Zinc oxide– eugenol paste can be relieving pain.

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