

OUTCOME OF RE-ESTABLISHMENT OF BLOOD CLOT AND ZINC OXIDE EUGENOL DRESSING FOR MANAGEMENT OF DRY SOCKET IN TERMS OF PAIN

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ABSTRACT

Objectives: To compare the outcome of Re-establishment of blood clot and Zinc oxide eugenol dressing for management of dry socket in terms of pain.

Materials and Methods: This cross sectional study was conducted in the department of Oral and Maxillofacial surgery Khyber College of dentistry Peshawar. Sample size was calculated by WHO calculator taking 5% occurrence of dry socket. Data of 72 patients' data was collected. All outpatients visited to department of minor oral surgery at Khyber College of dentistry Peshawar with post extraction pain fulfilling the inclusion criteria were included in the study after detailed history and clinical examination of extraction socket area. Once dry socket diagnosed after history, clinical examination and periapical radiograph lottery method was used to choose the treatment option (Dressing of Zinc oxide eugenol/Re-establishment of blood clot after irrigation with normal saline and debridement). All patients were medicated with non-steroid anti-inflammatory drug (Ibuprofen 400mg after every 8 hours) and were recalled after 48 hours. Pain was recorded on visual analog scale (scale used for measuring intensity of pain) before treatment and after 48 hours. For data analysis SPSS 22 was used. Percentages and Frequencies were calculated for variables like gender, Age and common tooth with dry socket. Pain control for two groups of treatment was compared and chi square test applied.

Results: Total patients included in the study were 72. Female male ratio was 1:1.6. Mandibular second molar was the most commonly presenting tooth with dry socket. Mean age was 24±10. P value for pain control in both treatment group was 0.000 which is less than 0.05 and is significant. gender, Age and common tooth with dry socket. Pain control for two groups was compared and chi square test applied.

Conclusion: Both of these treatment methods (Dressing of Zinc oxide eugenol/Re-establishment of blood clot) are reliable and predictable but the new method used (reestablishment of clot) was better treatment option in terms of Pain control, less number of visits to the dentist, psychological satisfaction of patients and more economical.

Key words: Dry Socket, Post extraction pain, Zinc Oxide eugenol dressing

INTRODUCTION

After tooth extraction one of the most common complication occur is Dry socket¹. It is the most common post op complication associated with pain

and delayed healing². Dry socket incidence ranges from 0.5 to 5% for all routine extractions but in impacted mandibular third molars extractions this reaches up to 38%.² Pathogenesis of dry socket is believed to be due to localized fibrinolysis (resulting from conversion of plasminogen to plasmin, which acts to dissolve fibrin cross links) occurring within the extraction socket and subsequently leading to loss of the blood clot³.

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There are a number of treatment methods for dry socket which are directed locally to the extraction socket these methods include irrigation of the socket with a 0.12-0.2% chlorohexidine rinses giving instructions to use syringe for irrigation of socket at home, placement of an obtundent dressing such as zinc oxide eugenol and lidocaine gel, placement of one step self-eliminating medicament such as Alveogyl (containing eugenol, butamben and iodoform), or a combination of these therapies and, where appropriate, the Prescription of systemic antibiotics⁴.

Placement of dressing require several visits of the patient to dentist after every 24 or 48 hours which leads to waste of working hours of the patients^{5,6}. Therefore a more economical method needs to be developed which can reduce the patient pain and number of dentist visits⁷.

The aim of this study was to developed a new method of treatment for dry socket management the objective of which was introducing re-bleeding in extraction socket and comparing it with traditional method of placement of zinc oxide eugenol packing in terms of pain reduction and number of visits required for patient complete relief of discomfort.

There is no difference in outcome of reestablishment of blood clot and zinc oxide eugenol dressing for management of dry socket in terms of pain.

MATERIALS AND METHODS

This comparative cross-sectional study was conducted in the oral and Maxillofacial surgery department at Khyber College of dentistry Peshawar after approval of Ethical Committee of Hospital. Sample size was calculated by WHO calculator taking 5% occurrence of dry socket, 95% confidence interval and 5% margin of error. Data of 72 patients was collected from October 2020 to October 2021. All outpatients visited to department of minor oral surgery at Khyber College of dentistry Peshawar with post extraction pain fulfilling the inclusion criteria were included in the study after detailed history and clinical examination of extraction socket area. Once dry socket diagnosed after history, clinical examination and periapical radiograph lottery method was used to choose the treatment option (Dressing of Zinc oxide eugenol/Re-establishment of blood clot after irrigation with normal saline and debridement). All patients were medicated with non-steroid anti

-inflammatory drug (Ibuprofen 400mg after every 8 hours) and were recalled after 48 hours. Pain was recorded on visual analog scale⁸ (scale used for measuring intensity of pain) before treatment and after 48hours. Visual analogue scale was recorded on a paper with a mark placed at one point along the length of a 10-cm line that represents a continuum between the two ends of the scale “no pain” on the left end (0 cm) of the scale and the “worst pain” on the right end of the scale. Scale was explained to the patients and were asked them to point the area on the scale where pain intensity lies after 48 hours of treatment. Data collection and treatment provided by single operator to exclude interpersonal biases.

Collected data was analyzed by SPSS22. percentages and frequencies were calculated for categorical variables age and gender. pain control for two groups was compared and chi square test applied to all collected data in which treatment provided.

RESULT

In this study total 72 patients were included. In one group (36 patients) irrigation with normal saline followed by re -bleeding in the socket was performed. In other group of 36 patient's irrigation with normal saline and placement of medicaments in the socket was done. Males presented with dry socket were 44(61.11%) out of 72 and female were 28(38.88%) as shown in Graph1. Female male ratio was 1:1.6.

Out of 72 dry socket patient most commonly presenting tooth was mandibular second molar (16.7%), followed by maxillary third molar (11%) with equal distribution of maxillary and mandibular 1st molar. Details shown in Graph No 2.

The 36 patients in whom treatment was performed with irrigation with normal saline and re bleeding (clot) introduction in the socket, were followed after 48 hours and it was observed that there was no pain after first visit in 77% patient after this treatment as compared to Zn eugenol dressing in which 22% patients were pain free after first visit. Pain on visual analogue scale in rebleeding treatment group was significantly less than second group in which irrigation with normal saline was done followed by placement of zinc oxide eugenol packing, the value was 0.000 which is less than 0.05 and is significant. Details shown in table 1.

The minimum age of patient presented with dry socket was 24 years while maximum age was 60 years with standard deviation of ± 10 . Mostly patients were in 25 years of age Details shown in Table 2.

DISCUSSION

Healing of a tooth extraction socket occur by secondary intention when a blood clot is organized⁶. Dry socket is a common post extraction complication with incidence of 3% in all routine extractions⁹. In our study a total of 72 patient of dry socket were treated in which 44 were male and 28 were female patients. Female to Male to ratio was 1:1.6. Our study results are similar with results of study of Umar Khitab and Ahmad¹⁰ but contradict the results of other studies done by Babatunde et al¹¹ reported more females (63%) than males. AL Jadid and OG but p value was non- significant¹².

The difference in gender distribution in this study from western study is due to lack of smoking in our female population and exclusion of female who were using oral contraceptives, which are predisposing factors of dry socket. Mean age in our study was 24 ± 10 which is similar to the results of

other studies Ogunlewe et al¹³ and Khorasani¹⁴ who reported that the average age of people with dry socket was 36.61 ± 13.59 years and without dry socket 42.86 ± 15.49 years. In our study Mandibular molars were more commonly involved in dry socket than maxillary molar. The result of our study is similar with results of other studies^{15,16}.

Different methods are used for management of dry socket. In this study placement of medicaments in socket after irrigation in one group and inducing bleeding to create a clot after socket irrigation is done in second group and both groups were compared for pain control after 48 hours. It was noticed that pain

Table 2:

Age of patient in Years	Frequency	Percentage
24.00	2	2.8
25.00	20	27.8
26.00	4	5.6
28.00	4	5.6
30.00	8	11.1
35.00	6	8.3
37.00	6	8.3
40.00	2	2.8
45.00	12	16.7
50.00	4	5.6
60.00	4	5.6
Total	72	100.0

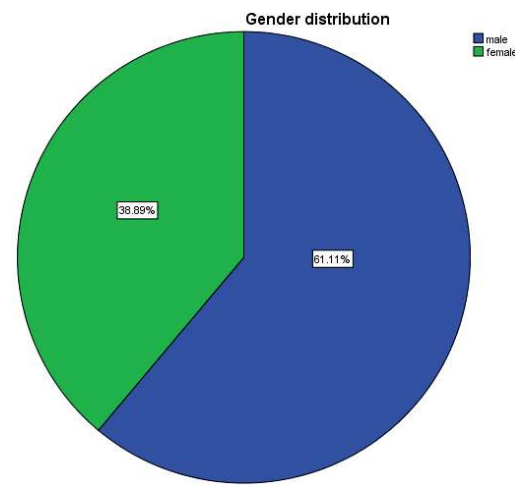


Fig 1:

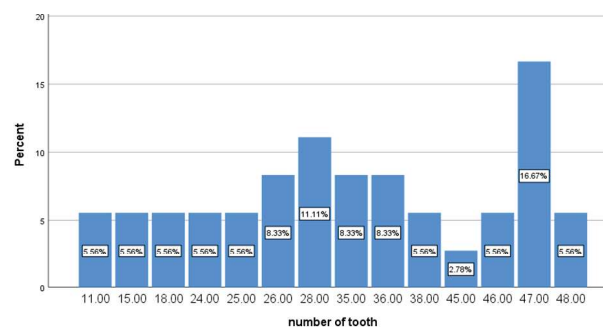


Fig 2:

Table 2:

S. No	Treatment performed	Pain on visual analogue scale (Frequency)				Total Number of patients	Chi square value
		0	1-3	4-5	8-10		
1	Irrigation with normal saline and re bleeding (clot) in socket	28 (77%)	4(11.1%)	4(11.1%)	0(0%)	36	0.000
2	Irrigation with normal saline and medicament placement in socket	8(22%)	0	10(27.8%)	18(50%)	36	
Total		36	4	14	18	72	

was better controlled and visits were less frequent in patients in whom bleeding was induced. compare to two to three visits in the group in which medicament's placement was done. Study performed by Charles has similar results as our study¹⁷.

CONCLUSION

Both of these techniques are reliable and predictable but new method used (re-establishment of clot) was better treatment option in terms of Pain control, less number of visits to dentist, psychological satisfaction of patients and economical. Limitation of this study was limited number of patients in both groups so further studies with increased number of patients should be performed to establish this treatment option.

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