

PROTECTION OF HEALING SOCKET WITH ATTACHABLE INTRAORAL DRESSING

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ABSTRACT

Objective: was to assess the efficacy of intraoral attachable hydrophilic dressing after single and multiple teeth extractions wounds compared with the extraction sockets healing by 30 minutes packing and secondary healing. **Methods:** The study sample included 50 patients (14 females and 36 males) with age range from 20 years old to 77 years old all Iraqi nationality. The Ora Aids attachable intraoral wound dressing was placed in one group (cases group, n = 25, 9 females and 14 males) immediately after extraction of teeth parallel with the other groups (control group, n = 25, 5 females & 12 males) received no dressing after extraction. Pain assessment is taken from the patient through the visual analog scale (VAS) is 10 cm horizontal line with anchor statements on the left (no pain) and on the right (unbearable pain). **Result:** The mean and average of VAS indicating less pain with protection of extraction socket with attachable dressing) over control group, while the mean and average of post-operative bleeding and healing of the socket show no difference between the two groups. **Conclusion:** Ora-aid can be applied in many treatment cases, such as implant surgery, tooth extraction, periodontal treatment & surgery, ulcers, orthodontia and most oral wounds. Such patients will obtain great improvement in their comfort, reduce postoperative pain and hemorrhage, protect intraoral wounds from food, bacteria and cigarette smoke and promotes healing after oral surgery and treatment. There are no major complications or morbidity associated with the use of ora- aids in this study except in adhering time that are related to the educated level of the patients

KEY WORDS: intraoral dressing; healing socket.

RUNNING TITLE: Acceleration of socket healing by Intraoral Dressing

INTRODUCTION

The surgical removal of teeth is one of the important dental actions and the following procedure of socket curative ⁽¹⁾. The curative of wound is a arrangement of biochemical and cellular actions, which aim to returning the integrity and functional ability of the tissue after injury ⁽²⁾. The remedial of an extraction socket wound doesn't vary from the healing of other body wounds except by anatomical state, which occurs after elimination of a tooth ⁽³⁾. Healing include a varied variety of procedures including vascular changes; inflammatory beginning; migration, proliferation besides differentiation of extracellular matrix manufacture; distinct cell inhabitants and maturing; bone creation, modelling and makeover, ending in the restoration of the mislaid tissues ⁽¹⁾. This is completed through

time- and space- dependent choreographic interaction of "chemokines, cytokines and growth factors", initiation of signaling paths with modulation of record factors' and genes' expression, that control cellular destiny within the curative milieu ⁽⁴⁾. A dressing material should cover these wounds to prevent foreign material contamination, microbial infection, and improve healing ⁽²⁾. Management options of extraction socket healing have been improved by the availability of non resorbable membrane barriers such barriers can be used alone or in combination with particulate materials ⁽⁵⁾. Biocompatible supplies and procedures have gated a excessive agreement of notice for past years in the medical practice ⁽⁶⁾. Rendering to its biochemical bases, biomaterials can be generally categorized into two chief groups: (I) Normal biomaterials, like; "silk, collagen, elastin, keratin, most polysaccharides", and tissues, like

“bovine pericardium” (II) artificial biomaterials, which include “artificial polymers, ceramics, metals and alloys, and composites”^(7,8). The aim of this current research was to assess the efficacy of intraoral attachable hydrophilic dressing after single and multiple teeth extractions wounds compared with the extraction sockets healing by 30 minutes packing and secondary healing.

MATERIALS AND METHODS

Study design and setting

This study was done in the College of Dentistry at the Iraqi university through 2021. The study sample included 50 patients (14 females and 36 males) with age range from 20 years old to 77 years old all Iraqi nationality. The Ora Aids attachable intraoral wound dressing was placed in one group (cases group, n = 25, 9 females and 14 males) immediately after extraction of teeth parallel with the other groups (control group, n = 25, 5 females & 12 males) received no dressing after extraction.

Exclusion criteria: 1) Patients with deep wounds., 2) Patients with excessive bleeding, excessive exudation may reduce its adhesive strength, 3) Patients with shallow depth vestibules in order to avoid fall off the ora aids quickly, 4) Patients with sialorrhea or ptyalism (excessive salivation seen in ^[1]_{SEP} affected patients with profuse drooling), 5) Patients with previous history of Ora Aids allergic reaction, swelling or any sign of infection. ^[1]_{SEP}

Clinical procedures

History taken from the patients in details about all medical problems including (e.g. cardiovascular, hematologic, endocrine), a

family medical history should be taken including that of bleeding disorders and diabetes, a list of all medications being taken and allergy to take precautions to avoid complications during and after placement of dressing in the extraction sites. Pain assessment is taken from the patient through the visual analog scale (VAS) is 10 cm horizontal line with anchor statements on the left (no pain) and on the right (unbearable pain). The patient is asked to mark the severity of pain numerically also, we asked to point at various facial expressions ranging from a smiling face to an extremely unhappy face to examine the faces rating scale. Pain intensity measured in patients who applied Ora Aids ‘attachable intraoral wound dressing after extractions (n VAS in the case group = 50 score) were significantly lower than the conventional patients (n VAS in the control group = 83 score)

Assessment of post-operative bleeding after 2 & 24 hours the socket was examined if there is A clean, dry wound was recorded as “no bleeding”, Wound with oozing of blood was recorded as bleeding. Any incidence of bleeding was controlled by local hemostatic measures as required. They were contacted by telephone in-patient who cannot come into clinic for recall, to enquire about any occurrence of bleeding. The post-operative bleeding assessment was equal for case dressing and conventional control groups.

Follow up

See the patient after 2 hours and after 24 hours to evaluate the post-operative bleeding either found or non-with use of ora-aid intraoral wound dressing and without packing gauze as seen in fig 1



Fig. (1) :-(A) applied oro-aid attachable intraoral dressing immediately after extraction (B) attachable intraoral dressing after 2 hours

Evaluate the patient after 72 hours to assessment the healing procedure either normal healing or presence of abnormal healing (dry socket) in each in study group and in control group. As seen in fig 2



Fig.(2):- (A) applied oro-aid attachable intraoral dressing immediately after extraction (B) attachable intraoral dressing after 72 hours

STATISTICAL ANALYSIS

The results are presented as number, median, and mean \pm SD. The data were analyzed using two-tailed paired t-test taking.

The pain elected when applied the oro-aids attachable intraoral dressing on post extraction socket and without applied the oro-aids attachable intraoral dressing were compared by unpaired t test the difference was not statistically significant between the control and study groups > 0.05

The post-operative bleeding occurs when applied the oro-aids attachable intraoral dressing on post extraction socket and without applied the oro-aids attachable intraoral dressing were compared by unpaired t test the difference was

not statistically significant between the control and study groups > 0.05

The post-operative healing of the socket and possibility of dry socket when applied the oro-aids attachable intraoral dressing on post extraction socket and without applied the oro-aids attachable intraoral dressing were compared by unpaired t test the difference was not statistically significant between the control and study groups > 0.05

RESULTS

Table 1 shows the characteristics of the participants enrolled in this study. Male to female ratio was 2.55: 1 Age ranged from (21-77 yr) in male and (20–53 yr) in female.

Table (1): - age and sex distribution of 50 cases.

Age	Male	Female	Total
Number of cases	36	14	50
percentage	72%	28%	100%
Range of age	21-77 years old	20- 53 years old	20 -77 years old

Table 2-show Site distribution of extraction sockets with the predominance of maxilla to mandible.

Table (2):- Site distribution of extraction sockets of 50 cases.

Site	Maxilla	Mandible	Total
Number of cases	28	22	50
percentage	56%	44%	100%

Table 3 show reduces the post-operative pain according to vas scale in group 1 (with protection of extraction socket with attachable dressing) over the group 2 (control group), while

there are of different registered in post-operative bleeding and healing of the socket between the two groups.

Table (3): - Comparison of VAS, post-operative bleeding and healing of the socket between group 1 and group 2.

Group 1				Group 2			
Case No.	VAS	Post-operative bleeding	Healing of the socket	Case No.	VAS	Post-operative bleeding	Healing of the socket
0	9	20	21	0	5	19	21
1	3	4	4	1	4	6	4
2	8	1	-	2	6	-	-
3	4	-	-	3	1	-	-
4	-	-	-	4	1	-	-
5	-	-	-	5	1	-	-
6	1	-	-	6	1	-	-
7	1	-	-	7	2	-	-
8	-	-	-	8	2	-	-
9	-	-	-	9	1	-	-
10	1	-	-	10	1	-	-
Average	2	0.24	0.16	Average	3.32	0.24	0.16
mean	2	0.24	0.16	Mean	3.32	0.24	0.16
SD	2.48	0.52	0.37	SD	3.20	0.44	0.37

Chart 1 show Comparison of VAS, post-operative bleeding and healing of the socket between group 1 and group 2

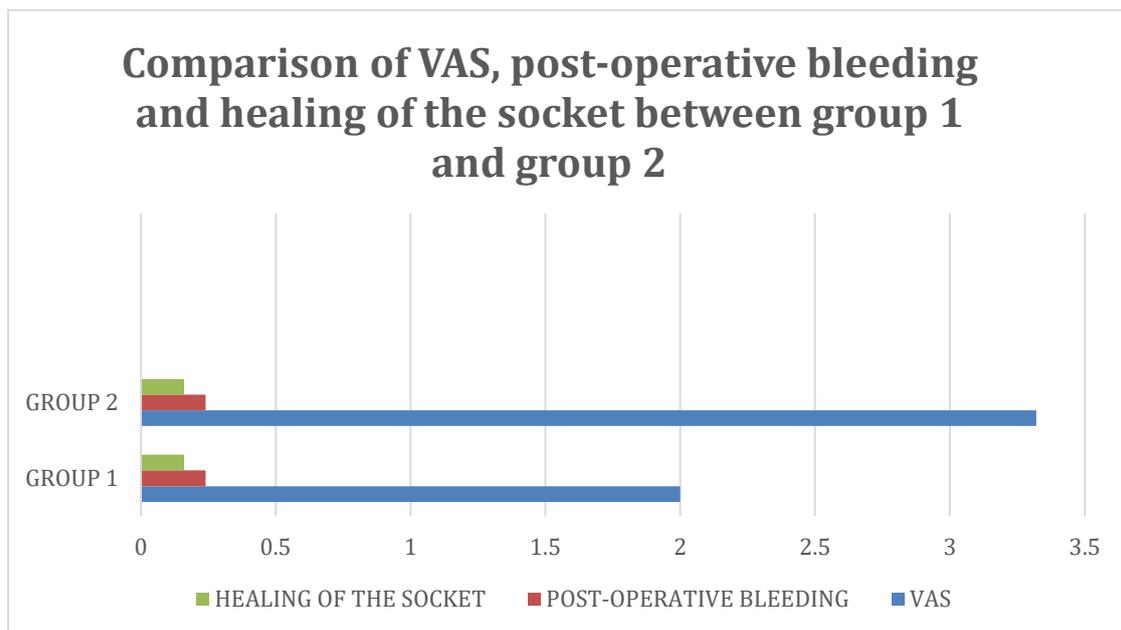


Chart (1):- Comparison of VAS, post-operative bleeding and healing of the socket between group 1 and group 2

Table (4):-Table: 4Comparison of Ora-Aid with other types of oral dressing { Reso-pac , and Hemcon dental dressing (HDD) } according to average range of VAS , Wound healing , Age , Gender

VARIABLE	COMPARISON		COMPARISON	
	Ora -Aids	Reso-Pac	Ora -Aids	Hemcon Dental Dressing (HDD)
Vas (Pain)	2	0.16 (0.548)	2	1.87
Wound Healing	0.16	4.80 (0.404)	0.16	30
Total Sample	25	50	25	30
Age (years)	20-77	20-40	20-77	18-90

Hemcon Dental Dressing (HDD) will affect post-operative care and surgical healing outcome in minor oral surgical procedures⁽¹⁰⁾. So, we compare it with ora aids, the comparison found that Ora-aids resulted in good wound healing than the HDD, which was less postoperative pain than the Ora aid. Taking into account the obvious difference in the sample size between the Ora-Aid sample which set n= 25/group. (male: 36 - female: 14, age range = 20-77 years) and in HDD sample set n=30 (male:12 , female : 18 , age range = 18-90 years . Also, the differences in medical condition of the patients that All patients with HDD taking Oral Anticoagulation Therapy (OAT) were included for treatment in the study without altering the anticoagulant regimens⁽¹¹⁾. We conclude that patients will obtain great improvement in their comfort, reduce postoperative pain and hemorrhage, protect Intraoral wounds from food, bacteria and cigarette smoke and promotes healing after oral surgery and treatment.

DISCUSSION

As we previously mentioned in chapter two, that ora-aids® is a promising attachable intraoral non-eugenol protective wound dressing material, made of polymeric materials including hydroxy ethyl cellulose.

Data were analyzed the application of ora-aids in extraction socket after evaluate the patient's comfort was (pain), post-operative bleeding and assessment the healing procedure for 2 - 72 hours. Our study shows that oral aids adhesion in these 25 patients (study group) ranging from 3-5 hours. The mean and average of VAS indicating less pain with protection of extraction socket with attachable dressing) over control group, while the mean and average of post-operative bleeding and healing of the socket show no difference between the two groups. As shown in table 3. We compare the efficacy of ora-aids with other types of intra oral dressing (reso-pac®, hemcon dental dressing (HDD)) as the show in table 4. According to table 4 below, the comparison found that Ora-Aids resulted in good wound healing than the reso-pac, which was also associated with less post-operative pain than ora-aids⁽⁹⁾. Taking into account the obvious

difference in the sample size between the Ora-Aid sample which set n= 25/group. (male: 36 - female: 14, age range = 20-77 years) and in Reso-Pac sample set n=50/group (male: 58, female: 42, age range = 20-40 years. also, the differences in the site distribution of our research which is in any extraction socket (28 maxilla, 22 mandible) as show in 4.2 table while the reso pac are predominantly on extraction impacted mandibular third molar surgically.

CONCLUSION

Ora-aid can be applied in many treatment cases, such as implant surgery, tooth extraction, periodontal treatment & surgery, ulcers, orthodontia and most oral wounds. Such patients will obtain great improvement in their comfort, reduce postoperative pain and hemorrhage, protect intraoral wounds from food, bacteria and cigarette smoke and promotes healing after oral surgery and treatment. There are no major complications or morbidity associated with the use of ora- aids in this study except in adhering time that are related to the educated level of the patients

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