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Original Research Article

# An Observational Study to Assess the Effect of Attachable Intra Oral Wound Dressing Tape on Post Extraction Dental Socket

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**Conflict of interest: Nil**

**Abstract**

**Aim:** The aim of the present study was to assess the effect of Attachable intra oral wound dressing tape on post extraction dental socket.

**Methods:** The study was conducted as a prospective, randomized, controlled, and single-blind clinical trial in the Department of Dentistry, NMCH, Jamuhar, Sasaram, Bihar, India. The study took place over a period of year. The approval includes a unique registration number and adherence to the instructions outlined in the Declaration of Helsinki. A total of 58 teeth in 58 patients were enrolled in this study.

**Results:** The patients included 31 with (49.2%) percent females, and 27 with (42.9%) percent males and a mean age of 30 years (range, 15-65). Most teeth were located in the mandible (74.6%, n= 47) and (17.5%, n =11) in maxilla. The demographic distribution regarding the age, sex, and jaw at a Mean ± SD (30.30±11.210).Based on postoperative assessments, the data show great percent (65.5%, n= 19) of normal bleeding grade in a study group with a p value of 0.001 so result showed statistically significant difference in the study group when compared with the control group regarding the post dental extraction bleeding. Regarding the incidence of alveolar osteotis after 4 days post dental extraction, the result show 5 cases of alveolar osteotis in control group with (17.2%) percent, and 2 cases of alveolar osteitis in study group (6.9%) with a statistically significant difference in the decrease of alveolar ostietis incidence in study group with a p value = 0.000.

**Conclusion:** Ora-aid is a dental product that can be used after a dental procedure to safeguard the blood clot in the dental socket and prevent it from being dislodged within the initial 5-6 hours following the tooth extraction.

**Keywords:** ORA-AID, post extraction bleeding, alveolar osteitis



## Introduction

The skin and oral mucosa are crucial barriers against exogenous substances, pathogens, and mechanical stresses. [1] Compared to the healing of cutaneous wounds, wound healing of the oral mucosa proceeds quickly and leaves less scar formation. [2,3] The causes of mucosal wounds are classified as physical, chemical, and thermal. Physical and mechanical traumas of the oral mucosa include linea alba, chronic biting, epulis fissuratum, and inflammatory papillary hyperplasia. Chemical injuries of the oral mucosa include chemical burns, post-anesthetic ulceration of the hard palate, and contact allergic stomatitis. [4]

Topical treatment is more effective than systemic treatment for healing physical traumas and chemical injuries in the oral mucosa. [5] Various topical treatments, such as adhesive tablets, gels, and films, have been developed for oral wound healing. [6] Among these treatment types, films possess properties such as adhesiveness and flexibility and protect the wound surfaces, reducing pain and increasing treatment effectiveness. [7,8]

The attachable oral wound dressing tape is a novel method of securing an intraoral patch to safeguard areas affected by procedures such as tooth extraction, implant surgery, orthodontics, and ulcers. It consists of a hydrophilic polymer complex and a mucoadhesive layer. The mucoadhesive layer interacts with the moisture in the oral mucosa, transforming into a gel-like state and partially expanding. This process aids in maintaining the moisture level of the wound by absorbing exudate and minor bleeding. The attachable oral wound dressing tab is extremely pliable, securely adhering to the surface of the oral wound, and causes a minimal sensation of a foreign object. Mucoadhesion persists until the hydrophilic polymer dissolves, after which the outer layer is naturally removed from the mucosa within approximately 6-8 hours later. [9-12]

The aim of the present study was to assess the effect of Attachable intra oral wound dressing tape on post extraction dental socket.

**Materials and Methods**

The study was conducted as a prospective, randomized, controlled, and single-blind clinical trial in the Department of Dentistry, NMCH, Jamuhar, Sasaram, Bihar, India. The study took place over a period of one year. The approval includes a unique registration number and adherence to the instructions outlined in the Declaration of Helsinki. A total of 58 teeth in 58 patients were enrolled in this study.

A sample size was chosen for its convenience after performance the Clinical examination by the specialist in oral medicine in the diagnosis department, extraction difficulty assessment by oral surgeon was done at oral surgery department for every patient who had first permanent molar teeth extraction To identify suitable participants for the study. Prior to commencing the implementation of this investigation, the operators underwent specialized training in order to position the attachable oral wound dressing tape precisely on the fresh dental socket, assess the difference between dental socket oozing and bleeding after 2 hour, and the incidence of alveolar ostieotis after 4 days.

The necessary information regarding the patient's medical and dental history, as well as other individual data, was obtained through a face-to-face interview with each patient. Appendix I Extraction of 1st molars for each patient was made under local anesthesia (lidocaine with adrenaline 1:80000). The patients were divided randomly into study group in it dental sockets were covered by attachable oral wound dressing tape (oral aids) and control group in it dental sockets were covered with intraoral sterilized gauze pack.

During patient selection, particular care was taken to ensure that the groups were similar with respect to age and sex in order to eliminate the possible effects of personal variables on the outcome of study.

A signed statement of informed consent was obtained from each patient before to their participation in the trial. Parents/caregivers provided their approval for patients who were below the age of 18 by signing the informed consent declaration.

**Appendix III Inclusion Criteria**

1. Patient without any history of bleeding disorders.
2. Patient without any history of uncontrolled disease.
3. Person without any history of allergy to dental anesthesia.
4. Patient with first molar permanent tooth indicated for atraumatic dental extraction.

**Exclusion Criteria**

1. Patient with history of bleeding disorders.
2. Patient with history of uncontrolled disease.
3. Patient with history of allergy to dental anesthesia.
4. Patient with periapical lesion or traumatic dental extraction.

**Follow up**

All patients in this study was assessed

1. After 2 hour for post dental extraction bleeding, the grade 0 (very low), grade 1 (low), grade 2 (normal), grade 3 (high), and grade 4 (very high)
2. After 4 days to assess the post extraction dental socket healing (alveolar osteitis) as present or not.

**Results**

**Table 1: Demographic Characteristic**

| **Age** | **Frequency** | **Percent** |
|---|---|---|
| 15-24 | 21 | 36.2 |
| 25-34 | 22 | 37.9 |
| 35-44 | 11 | 19.0 |
| >44 | 4 | 6.9 |
| total | 58 | 100.0 |
| **Sex** | **Frequency** | **Percent** |
| Female | 31 | 49.2 |
| Male | 27 | 42.9 |
| Total | 58 | 100.0 |
| **Jaw** | **Frequency** | **Percent** |
| Maxilla | 11 | 17.5 |
| Mandible | 47 | 74.6 |
| Total | 58 | 100.0 |

The patients included 31 with (49.2%) percent females and 27 with (42.9%) percent males and a mean age of 30 years (range, 15-65). Most teeth were located in the mandible (74.6%, n= 47) and (17.5%, n =11) in maxilla. The demographic distribution regarding the age, sex, and jaw at a Mean ± SD (30.30±11.210).

**Table 2: Post dental extraction bleeding**

| Bleeding | Very low N (%) | Low N (%) | Normal N (%) | High N (%) | Very high N (%) | P value |
|---|---|---|---|---|---|---|
| Study group | 0(0%) | 18(62.1) | 9(31.0) | 2(6.9) | 0(0%) | 0.001 |
| Control group | 0(0%) | 6(20.7) | 19(65.5) | 4(13.8) | 0(0%) | |

Based on postoperative assessments, the data show great percent (65.5%, n= 19) of normal bleeding grade in a study group with a p value of 0.001 so result showed statistically significant difference in the study group when compared with the control group regarding the post dental extraction bleeding.

**Table 3: Alveolar osteoitis**

| Alveolar osteoitis | N (%) | P value |
|---|---|---|
| Study group | 2(6.9) | 0.000 |
| Control group | 5(17.2) | |

Regarding the incidence of alveolar osteotis after 4 days post dental extraction, the result show 5 cases of alveolar osteotis in control group with (17.2%) percent, and 2 cases of alveolar osteitis in study group (6.9%) with a statistically significant difference in the decrease of alveolar ostietis incidence in study group with a p value = 0.000.

## Discussion

Following a tooth extraction, it is typical for the extraction site to experience bleeding. Patients should be aware that it is common for the area to release a small amount of fluid for up to 24 hours following the treatment. Post-extraction bleeding (PEB) refers to the abnormal condition where bleeding persists without the development of blood clots or extends beyond a duration of 8 to 12 hours. Patients experiencing such bleeding occurrences may require immediate dental consultations and procedures, which can be distressing. The reasons of post-extraction bleeding (PEB) can originate from a specific area, result from a systemic condition, be triggered by medication, or occur due to the patient's failure to follow post-extraction recommendations. In order to manage this bleeding, many local and systemic approaches have been employed, relying on the proficiency of the clinician. [13]

The patients included 31 with (49.2%) percent females, and 27 with (42.9%) percent males and a mean age of 30 years (range, 15-65). Most teeth were located in the mandible (74.6%, n= 47) and (17.5%, n =11) in maxilla. The demographic distribution regarding the age, sex, and jaw at a Mean ± SD (30.30±11.210). Based on postoperative assessments, the data show great percent (65.5%, n= 19) of normal bleeding grade in a study group with a p value of 0.001 so result showed statistically significant difference in the study group when compared with the control group regarding the post dental extraction bleeding. ORA-AID is a new concept of attaching an intraoral patch or tape to protect the affected area such as post extraction, implant surgery, orthodontics and ulcers. [9]

ORA-AID is composed of 2 layers: an oral mucosa adhesive side and a protection side. When exposed to moisture, the water-soluble adhesive side changes into a gel state to achieve adhesion to the wound area for approximately 6 hours. The protection side consists of a non-resorbable polymer which covers the wound to protect it from the environment in the oral cavity. It is Protects intraoral wounds from food, bacteria, and cigarette smoke, Aids in hemostasis, besides it is Easy to cut and shape and Strong adhesive using hydrophilic polymer. [13] Regarding the incidence of alveolar osteotis after 4 days post dental extraction, the result show 5 cases of alveolar osteotis in control group with (17.2%) percent, and 2 cases of alveolar osteitis in study group (6.9%) with a statistically significant difference in the decrease of alveolar ostietis incidence in study group with a p value = 0.000.The study found a statistically significant difference in wound healing and dry socket formation between the study group and the control group. This difference may be attributed to the mucoadhesion, which is a result of various mechanisms including the conversion of the inner layer of ora aid into a body glue. [14] This mucoadhesion helps in promoting the proper healing of the dental socket. This aligns with the findings of Makvandi, Pooyan, et al [15], who demonstrated that the OWD film's effective mucoadhesion has significant promise in minimizing wound infections and enhancing tissue repair.

## Conclusion

Ora-aid is a dental product that can be used after a dental procedure to safeguard the blood clot in the dental socket and prevent it from being dislodged within the initial 5-6 hours following the tooth extraction. Furthermore, patients will have significant enhancement in their comfort, less postoperative pain and bleeding, safeguarding of intraoral wounds against food, bacteria, and cigarette smoke, and facilitation of recovery following oral surgery and treatment. No significant problems or morbidity were observed in this study regarding the use of ora-aids, except for difficulties in adhering to the prescribed regimen, which were

found to be connected with the educational level of the patients.

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