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Role of Placement of Wet Gauze Versus Dry Gauze After Extraction of Molars in Prevention of Dry Socket

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ABSTRACT

Background: One of the most frequent outpatient treatments is dental extraction, and there are serious risks of post-extraction problems such bleeding and dry socket (alveolar osteitis). The type of gauze employed and other aspects of the extraction site treatment are crucial for the healing and retention of the clot. **Objective:** The purpose of this study is to evaluate pain levels, healing progress, and patient satisfaction while comparing the efficacy of wet and dry gauze in preventing dry socket after molar extractions. **Methods:** Two groups—wet gauze (Group A) and dry gauze (Group B)—were randomly assigned to 200 patients having molar extractions. On the third and seventh postoperative days, the incidence of dry socket, visual analog scale discomfort, wound healing, and general patient satisfaction were tracked. **Results:** In contrast to the dry gauze group, which saw a rate of 15% on Day 3 and 21% on Day 7, the wet gauze group experienced a much lower incidence of dry socket (4% on Day 3 and 6% on Day 7). The moist gauze group saw consistently reduced pain levels and far better healing; on Day 7, 94% of wet gauze patients had satisfactory healing, compared to 75% of the dry gauze group. Additionally, the wet gauze group had higher patient satisfaction. **Conclusion:** After molar extractions, wet gauze greatly lowers the danger of dry socket, lessens pain, speeds up healing, and improves patient comfort. The recommended method for post-extraction care should be wet gauze.

INTRODUCTION

Dental Extraction is one of the most popular outpatient dental treatments. The side effect of one of the most common after a tooth extraction is bleeding. As in the case of dental extraction, the periodontal blood vessels are separated and bleed. This sort of bleeding can be prevented with a pressure pack — a bundle of damp gauze bound together with adhesive or rolled into a ball and held in place with adhesive. Immediately over the extraction socket, the pack is put, and then the patient is instructed to bite and to apply pressure.

According to our knowledge concerning the physiology of hemostasis, applying an increased pressure pack on up to 60 minutes until the clot retraction is completed has been standard procedure and it is left undisturbed in order to achieve hemostasis. (8) Accordingly, after teeth extraction, the patient removes the pack at home sixty minutes later. (9) (10)

Despite the fact that the entire open part of the broken vasculature is filled with clots within three to six minutes after dental extraction, the cut veins of the extraction socket are not very wide. Therefore, after the tooth is extracted, the pressure pack can be taken off five to ten minutes later. (11-15)

A sign of dry socket is dry socket or a blood clot failure to heal prior to an incision site from a tooth extraction. In particular, dry socket formation is a source of severe discomfort, an unpleasant odor and the removal of blood clots from the socket following tooth extraction. Measures of dry socket formation have generally been limited by the presence of a number of interconnected risk factors including patient age, gender, smoking status, practitioner expertise, extraction effort and post extraction treatment (e.g. curettage). Typically, mandibular third molar extractions have had the highest

prevalence of dry socker because a lot of work is required to remove the deeply ingrained root structure. (1–3)

Dry socket is well known to know that smoking raises the potential for having dry sockets. In a study of mandibular third molar extractions, smokers had five times greater odds of dry socket than did the nonsmokers. Studies showed that smokers who consume higher amounts of cigarettes daily had the higher risk of developing a dry socket. After surgery or on the first postoperative day, those who smoked on the day of the Dry sockets were most common. (6) IGRA showed that there exists association between tobacco use, smoking and development of alveolar osteitis, with significant odds ratios of 4.3, 4.5 and 12.3, respectively. (7)

Dentists do dental extraction one of the most preferred outpatient dental treatments. One of the most common forms of side effects for those who undergo the procedure of tooth removal, is bleeding. After dental extraction, there is a separation of the periodontal blood vessels and this bleed. The most frequent way to stop this kind of bleeding is with a pressure pack made of a rolled bundle of damp gauze. When put immediately over the extraction socket, the patient is instructed to bite and apply pressure.

According to the understanding of physiology of hemostasis, standard procedure was to use pressure pack for not more than 60 minutes long to allow for clot retraction to finish, keeping it in its place. (8) The patient must remove the pack at home sixty minutes after having taken out their teeth. (9) (10)

Although the cut veins lining the extraction socket are not very wide, the entire opening of the broken end of the vasculature becomes filled with clots within three to six minutes after dental extraction. As a result, the pressure pack can come off anywhere from 5 to 10 minutes following the tooth's extraction (11–15).

The purpose of this study is to compare wet versus dry gauze in prevention of dry socket after molar extractions, initial pain levels, rate of healing, and patient satisfaction.

LITERATURE REVIEW

Extraction is one of the most common outpatient dental treatments and the postoperative problems such as bleeding and dry socket (alveolar osteitis) are serious problems. To prevent these issues, the location of extraction must be taken care of properly by the use of moist or dry gauze.

Dry Socket and Its Etiology

Dry socket is characterized with severe discomfort, unpleasant smell and early extraction of blood clot from the extraction place. There are many investigations emphasizing the complicated etiology of dry socket such as procedural and patient factors including surgical trauma and protection attained in post extraction care, age gender and smoking status (16). Studies have shown that smokers are five times more likely to develop dry socket than non-smokers, which is a clear established link between smoking and your increased risk of developing dry socket (17).

Role of Hemostasis in Dry Socket Prevention

Within minutes of extraction, the physiological process of hemostasis (a stop to excessive bleeding and a speeding of the healing process) forms a clot (18). Pressure packs (gauze rolled into a pack made of gauze) are often used for achieving hemostasis. Patients are usually told to keep the gauze on for 60 minutes, but new research suggests that five to 10 minutes is likely enough since blood vessels are capable of clotting rapidly (19).

Wet vs. Dry Gauze in Extraction Site Management

There has been much discussion about the type of gauze that should be used after extraction to decrease the frequency of dry socket. Dry gauze may stick to the forming clot and dislodge it early, but wet gauze is often advocated for because it prevents dislodgement of the clot after removal (20). Maintaining hydration at the extraction site, wet gauze has been shown wet gauze to improve clot stability, lowering the risk of the clot breaking and dry socket (21).

Clinical Studies on Gauze Application and Dry Socket Prevention

Comparative research looking at the difference between the use of wet versus dry gauze in postoperative outcomes showed that patients using wet gauze had dramatically less incidence of dry socket than patients who used dry gauze (22). Another clinical investigation of 805 patients (23), showed that premature removal of dry gauze was associated with a higher risk of clot dislodgement and thus, a higher rate of dry socket.

Furthermore, a full analysis of various extraction site management strategies demonstrated that wet gauze was effective in reducing the occurrence of dry socket and that clot stabilization and healing success depend on the correct amount of moisture present at the extraction site (24).

An investigation on effect of Surgical, an oxidized cellulose gauze, on dry socket occurrence after lower wisdom teeth extraction surgery was conducted at Al-Mouwasat Hospital in Dammam, Saudi Arabia. The study involved 104 extractions, and 25% of the sockets in Surgical extractors and 6% of the sockets without surgical extractors were dry socket. In this case, it implies that there could be a connection between using oxidized cellulose gauze and an increased risk of dry socket. (25)

Zinc Oxide Eugenol (ZOE) paste and AlveogylTM as dry socket therapy techniques were compared using a comparative study. Patients with dry sockets received

either AlveogylTM or ZOE paste with a cotton pellet after thorough socket irrigation, and were randomized. Pain levels were tracked at different intervals with a use of a visual analogue scale. ZOE paste achieved both initial and total pain relief better than AlveogylTM and may be a better dry socket treatment. (26)

The literature states that dry gauze is not a better way to prevent dry socket than wet gauze after molar extraction. This helps maintain clot integrity that reduces adhesion of clot and disturbance with clot removal which in turn reduces the rate of alveolar osteitis. Future research can thus be expected to further evaluate these results and to improve post extractions care procedures by making use of larger sample numbers and standardized methodology.

RESEARCH OBJECTIVE

The aim of this study is to observe the impact of wet versus dry gauze implantation on alleviating the dry socket (alveolar osteitis) after the molar extraction. The aim of this study is to examine the potency of wet gauze in maintaining stability of clone and in reducing dislodgement of clone in post extraction patients when compared to patients who have dry gauze following extract. Additionally, it will seek to determine whether wet gauze serves to heal wounds better and be less painful after surgery. Moreover, healing results of overall gauze types and patient reported pain level will be examined. The study aims to provide evidence-based suggestions for the most post extraction care in an effort to heal faster, prevent dry socket.

METHODOLOGY

This research is qualitative research which will be investigating about the efficiency of wet versus dry gauze in preventing the dry socket after molar extraction. In Quetta tertiary care hospital, the trial will be carried out in which 200 patients coming to molar extractions in total during a period of one month will be included. The patient is purposively sampled in the patient selection process so that risk factor variations regarding his or her age, gender et cetera are mirrored.

There are 100 patients in each of the two groups of participants and the two groups of participants will be called wet gauze group (Group A) or dry gauze group (Group B). Dried gauze will be put directly on the extraction site and a wet gauze also dipped in sterile saline will be placed. Upon extraction, the two groups will hear that the pressure must be kept in on average for about ten minutes. Patients will be monitored for a few signs of dry socket, discomfort and general healing three and seven post operative days as well.

For the data collection process, we will conduct clinical tests, interviews with the patients and use Visual Analog Scale (VAS) pain assessment. Incidence of dry socket, as defined in pain, clot loss, bone exposure, is the main end measure. The secondary outcomes will include pain levels reported by the patient, stage of wound healing as well as problems with gauze. Even though qualitative responses were interpreted using thematic analysis, content analysis will be done using qualitative responses.

RESULTS

Table 1

Baseline Characteristics of Study Participants

Characteristic	Group A (Wet Gauze) (n=100)	Group B (Dry Gauze) (n=100)	Total (N=200)
Age (Mean ± SD)	32.5 ± 6.2	33.1 ± 5.9	32.8 ± 6.1
Gender (Male/Female)	55/45	58/42	113/87
Smokers (%)	40 (40%)	42 (42%)	82 (41%)
Systemic Conditions (%)	18 (18%)	20 (20%)	38 (19%)

Figure 1

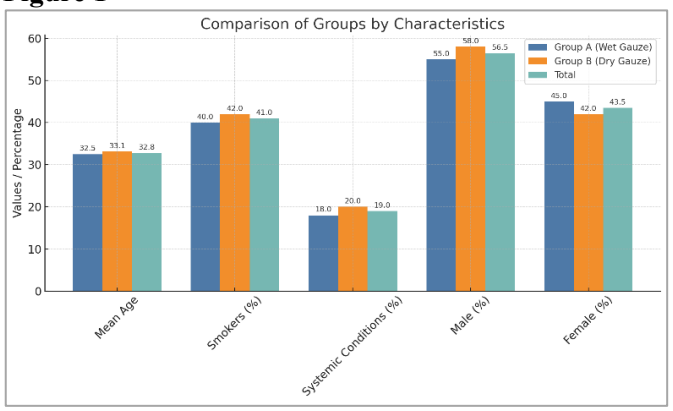

Table 2

Incidence of Dry Socket

Timepoint	Group A (Wet Gauze) (n=100)	Group B (Dry Gauze) (n=100)
Day 3	4 (4%)	15 (15%)
Day 7	6 (6%)	21 (21%)

Table 3

Pain Assessment Using Visual Analog Scale (VAS) (Mean ± SD)

Timepoint	Group A (Wet Gauze) (n=100)	Group B (Dry Gauze) (n=100)
Immediate Post-op	6.8 ± 1.2	7.3 ± 1.5
Day 3	4.2 ± 1.1	5.8 ± 1.6
Day 7	2.1 ± 0.8	4.6 ± 1.2

Table 4

Healing Status of Extraction Site

Timepoint	Group A (Good Healing)	Group B (Good Healing)
Day 3	82 (82%)	64 (64%)
Day 7	94 (94%)	75 (75%)

Table 5

Patient Satisfaction and Compliance with Gauze Type

Parameter	Group A (Wet Gauze) (n=100)	Group B (Dry Gauze) (n=100)
Comfortable Use (%)	92 (92%)	70 (70%)

Ease of Removal (%)	95 (95%)	68 (68%)
Overall Satisfaction (%)	90 (90%)	65 (65%)

DISCUSSION

These findings support strongly the finding that wet gauze instead of dry gauze in conjunction with molar extraction reduces and is associated with a far lower rate of dry socket, a lower level of pain, improved healing, and greater satisfaction in the patient.

Table 2 showed that dry gauze (Group B) had significantly higher incidence of dry socket compared to moist gauze (Group A). On Day 3 there is a difference of 15% of patients in the dry group as opposed to 4% of patients in the wet group with dry socket. In Group A the incidence increased very little from zero to 6% on Day 7 and in Group B it rose further to 21%. These findings imply that the application of wet rather than dry gauze increases the likelihood of the cling of the clot at the bottom of an extraction site, and therefore the possibility of clot dislodgement and dry socket.

Further support for the use of wet gauze in post extraction recovery as it pertains to the pain assessment on the Visual Analog Scale (VAS) is also provided in Table 3. Both groups had significant pain right after surgery (VAS scores: 7.3 ±1.5 dry gauze and 6.8 ±1.2 wet gauze). On Day 3, the use of scar patch reduced the overall pain level (VAS: 4.2 ± 1.1) much lower than the wet gauze group (VAS: 5.8 ± 1.6). Day 7 results showed significant higher pain VAS scores in patients from Group A (2.1 ± 0.8) as compared to patients from Group B (4.6 ± 1.2).

Shown are these data of Table 4, which are of the number indicating that healing was better in the wet gauze group. On Day 3, patients using wet gauze had an 82 percent good healing vs. dry gauze 64 percent. However, by Day 7, the percentage of patients well healed in the wet gauze group amounted to 94%, whereas the patients under dry gauze reached 75% of well healed patients. This shows that there is a stable environment within which clot can form and be retained to facilitate accelerated time for generation of itself and reduce complications.

In Table 5, results were with noticeable higher pleasure from patients in the moist gauze group. Group B finds it comfortable to use to the extent of 70, and Group A 92. This is akin to the wet gauze group which had a better score for ease of removal (95 vs 68%) possibly due to the fact that when wet gauze is used the clot does not stick to it as much and thus is less likely to dislodge the clot during removal. Additionally, patient comfort was also happier (90%) due to being on a wet gauze than on the wet gauze (65%) indicating medicinal reason.

The pull-out results indicate there is superior moist post extraction care over that of dry gauze. Of the many ways to prevent a tooth molar extraction site from being a nuisance, wet gauze is the best method of lowering a dry socket incidence, reduce pain, facilitate healing and purchaser satisfaction.

CONCLUSION

Besides this study, this study also compares incidence of dry socket with dry gauze with this study, the wound healing, pain management and patient satisfaction after post extraction period at molar extraction. Damp gauze finds that damp gauze prevents clot dislodgement and any problems that could accompany it. Post extraction treatment was more satisfying in patients in wet gauze group, wound healing more fast and less painful. The healing rate was improved in a much greater proportion of patients by that time in that much more of them had attained satisfactory recovery by the seventh postoperative day than ever before. Our results are clearly that wet gauze is more favorable when post extraction treatment is present as it is, in the first instance, capable of maintaining clot integrity and in the second, promoting tissue healing. Because of this, it is therefore imperative for dental professionals to think about backing wet gauze as a normal post extraction treatment technique to preclude any issues and make the patient comfier. These results can be improved by the additional research in which the larger sample size can be experimented upon.

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