

# Role of Honey as Dressing Material in Oral Cavity

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**The treatment of dry socket was evaluated in 62 patients. Honey dressing proved to be analgesic and curative.**

**Key words: Honey, Dry socket.**

Dry socket is a post-extraction complication in which blood clot does not form in the alveolar socket or it disintegrates after its formation. Surgical site reveals a partially or completely denuded alveolus. The condition is characterised by severe pain, foul odour but no pus formation. It usually occurs from the second to fourth day after extraction. The aetiology of dry socket is multifactorial, complex and not fully understood.

Honey is a remarkable liquid prepared by bees from the nectar of various plants of different families. It is an equimolecular mixture of dextrose and fructose known as invert sugar 50-90% and water. Honey also contains 0.1%-10% of sucrose, small quantities of dextrin, volatile oil, inihbine, catalase and formic acid<sup>1,2</sup>

The study on the healing of infected wounds and ulcers by honey concluded that wound treated by topical application of honey resulted in rapid epithelization, absorption of edema from and around the ulcer margins.<sup>3</sup> Animal study<sup>4</sup> conducted on ethanol induced gastric lesions to investigate the protective mechanism action of honey and author suggested that honey may be used in preventing and reducing ethanol induced gastric lesions in humans.<sup>4</sup>

Allen and associates<sup>5</sup> have also proved antimicrobial activity of honey in their studies in New Zealand. A detailed study conducted on the efficacy of honey as antibacterial agent on bacterial growths including gram +ve and gram -ve organisms and concluded that honey inhibited the growth of even resistant organisms.<sup>6</sup>

Subrahmanyam<sup>7</sup> recommended the use of honey as an ideal dressing for topical application after his study on 104 burns cases. Author stated that honey treated patients reported relief of pain. He also observed low incidence of hypertrophic and post burn scars. In a study of 40 patients with wounds of various origin honey provided healing in 88%. At the end of healing process a few micro-organisms were isolated from the wounds, but they did not prevent consolidation. Treatment with honey is simple, effective and inexpensive. Researchers further proposed that it should be added to the list of commonly used antiseptic agents<sup>8</sup>.

The role of honey as a healer dressing has been proved by recent studies in different fields of medicine and surgery, however no detailed study has been conducted in the oral cavity to investigate its efficacy. The aim of this project to evaluate the efficacy of honey in treatment of dry socket and to introduce an inexpensive, readily

available material for dressing.

## Material and Methods

Clinical observations and monitoring were made on 62 patients suffering from dry socket attending the Punjab Dental Hospital/de Montmorency College of Dentistry, Lahore. Honey soaked ¼ inch sterile gauze was applied as a dressing material. The debilitating patients were excluded from the study and maximum care was taken to include the patients whose local and systemic conditions would not adversely effect the wound healing.

Evaluation was done in respect of post-dressing pain and granulation tissue formation. Each patient was asked to keep an accurate record detailing the date, time and quantity of post-operative pain medication ingested. The patients recorded pain ratings upon a visual analogue scale 100 mm in length. The pain ratings were performed 3 times a day until 7 days post-operative appointment.

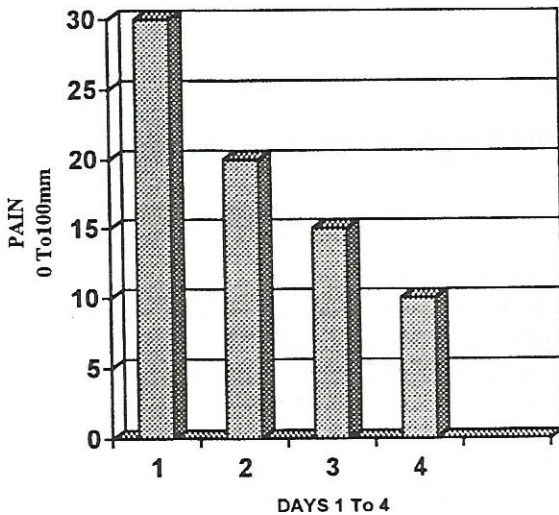
Isolation of socket area was done with cotton rolls. Socket was irrigated with normal saline and dried with sterile cotton gauze. One by four inch sterile honey soaked gauze was loosely inserted into the socket. The dressing was lightly packed into the socket so that it will not interfere with the granulation tissue formation. Irrigation, drying and dressing of the socket was repeated daily. The dressing was continued for five to seven days.

## Results

Average pain ratings on the 1<sup>st</sup> day showed significantly reduced pain levels which was 12.2 mm less on the visual analogue scale and was statistically significant. Pain was gradually reduced on 2<sup>nd</sup> and 3<sup>rd</sup> day. Patient compliance was a problem during days 4 through 7. The number of patients who complete the pain scales declined from 30 on the 1<sup>st</sup> day, 10 on the 4<sup>th</sup> day respectively. A graphic representation of days 1 to 4 is given in the figure. The information for days 5, 6 and 7 was omitted because of the lack of patients compliance and presumed that patients were comfortable.

Health granulation tissue formation started from 3<sup>rd</sup> day in 69% cases and in 31% cases granulation tissue appeared on 4<sup>th</sup> day. Delay in granulation tissue formation occurred in those patients who missed their regular dressing. Offensive odour of the socket was vanished after third dressing.

Fig.: Average pain chart from day 1 to 4.



### Discussion

Honey as a traditional medicine remained popular in every region of the globe but research on its dramatic properties has been boosted for the past few years. Honey is sterile itself and inhibit the growth of both gram +ve and -ve organisms. Its antimicrobial properties are attributed to its low pH, a thermolabile substance called inihbine and its hygroscopic properties. The viscous barrier formed by honey rendering the wounds sterile and preventing colonization. Honey also contains an enzyme catalase which may help in healing process. The physical, chemical and biological properties of honey have been well documented.<sup>9-14</sup>

Aluminium, sulphate and sucrose present in honey also accelerate healing process. The healthy granulation tissue appear in majority of the patients about 3<sup>rd</sup> day of treatment. The hygroscopic property of honey dhydrates bacteria, rendering them inactive. The bacteria can not live in the presence of honey for the reason that honey is an excellent source of potassium. The potassium withdraws moisture from the bacteria which is essential to their existence. The healing of the socket is associated with disappearance of dry bone and formation of health granulation tissue in the bony cavity. Chemical debridement action of honey, removal of offensive smell being antiseptic, antibiotic, and energy source provision of honey makes it a suitable dressing material for almost every type of wounds.

It has been known for more than 100 years that honey can accelerate wound healing.<sup>15</sup> There has been isolated reports on the use of honey in burns healing, ulcers, infected wounds except in the oral cavity. This study concluded that pain was reduced and healing was accelerated in patients treated with honey suffering from dry socket. It is noteworthy that there are no complications with honey dressing. Honey is easily, universally available and is far less expensive. It is, suggested to be dressing of choice for dry socket.

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