Clinical Research

Vranaropaka effect of Laksha Churna with Madhu on wound after removal of Danta Sharkara

Mridula Maurya, Dinesh K. Maurya

Lecturer, Department of Shalakya Tantra, GJ Patel Ayurveda College, New Vallabha Vidya Nagar, Anand, Gujarat,
Professor and Head, Department of Shalakya Tantra, SKD Government Ayurveda College, Muzaffarnagar, Uttar Pradesh, India

Abstract

According to Sushruta, disease in which plaque formed on teeth and hardened by the action of deranged Vayu, lies in a crystallized form at root of teeth is called as Dantasharkara. According to Vagbhata, accumulation of dirt on teeth by not cleaning them daily or of Kapha dehydrated by Vata adhering to the teeth, becoming hard and emits bad odor is known as Dantasharkara (Tartar). Tartar manifests as a deposit of inorganic salts composed primarily of calcium carbonate and phosphate mixed with food debris, bacteria and desquamated epithelial cells which reduce the quality of whiteness and strength of the teeth. Teeth loss is also not uncommon in tartar sufferers. Such deposits tend to destroy the healthy growth and function of teeth. It should be removed in such a way as not to hurt the roots of the teeth and then parts should be rubbed (Pratisarana) with Laksha Churna and Madhu. In trial group, management of tartar is attempted by local rubbing of Laksha Churna with Madhu on the surface of teeth and gingiva. Regeneration, repair and new attachment are the aspects of periodontal healing that are achieved by gingival physiotherapy on scaling wound. Pratisarana of Laksha Churna with Madhu is easy to apply, cost effective and free from side effects in comparison to systemic use of modern drugs.

Key words: Dantasharkara, Laksha Churna, Madhu, Pratisarana, Vranaropaka

Introduction

Tartar is the single most common cause of teeth loss in adults. Disease attacks the gum, alveolar bone, periodontal ligament and cementum which are the supporting structures of the teeth. Causative factors are improper tooth brushing, fast changing lifestyle, faulty dietary habits, tobacco addiction and using more cooked food against hard and raw food, hence the need to chew the food grew less and less.1 It allows the deposition of sticky materials on teeth due to lack of gum and teeth exercise.

If we do not follow the proper methods to clean the teeth in daily routine, plaque deposit mixes with sugar and starch in the diet to form acid and other byproducts in the mouth, irritating the gum and causing them to become red, tender and swollen. If not removed daily, plaque hardens to form tartar by calcification. In spite of vast development of modern science, satisfactory treatment of oral diseases by newer drugs are not achieved, rather than the chemical compounds have exposed the patient to their different ill effects. After primary review of textual references, it was found that Laksha Churna and Madhu both have wound healing properties.2

Keeping these properties in view, a study on the “Vranaropaka effect of Laksha Churna with Madhu on wound after removal of Dantasharkara” was designed in interest of the patient’s health.

Aims and Objectives

Present study is designed with the following objectives.
1. To assess the Vranaropaka property of Laksha Churna and Madhu.
2. To assess the changes in condition of gum and teeth after Pratisarana of Laksha Churna with Madhu on scaling wound.

Materials and Methods

Inclusion criteria
1. Patients between 15 to 60 years of age group.

Address for correspondence: Dr. Mridula Maurya,
D/O Dr. Radhey Shyam Maurya,
305-E, Nakha No. 1, Teacher’s Colony, Naya Tola
Basarapur, Gorakhpur, U.P.-273 004, India.
E-mail: drmridulata@gmail.com
2. Patients having normal BT and CT.
3. Patients having swollen gums, bleeding gums with tartar.
4. Mobility of teeth + or ++.

Exclusion criteria
1. Patients having Hb % below 5 g.
2. Patients with acute conditions like acute pulpitis, acute Ludwig’s angina.
3. Patients having mouth ulcers.
4. Mobility of teeth +++ or more.

+ Less than 0.5 mm labio-lingual movement
++ Less than 1 mm labio-lingual movement
+++ 1mm or more labio-lingual displacement and including tooth movement up and down in an axial direction

Randomization and treatment schedule
Sixty cases were randomly selected on the basis of clinical presentation and patient’s narration from dental OPD of Shalaka Tantra. Patients are divided into two groups namely A (Trial group) and B (Standard group) and were asked to follow-up in O.P.D on 3rd, 7th, 15th day and on 1 month.

Group A: Trial group
Thirty patients were advised to apply Laksha Churna with Madhu on surface of teeth and gum after scaling. It is applied twice a day for 7 days.

Group B: Standard group
Thirty patients were advised to take Tab. Ciprofloxacin 500 mg and Tab. Diclofenac sodium 50 mg after scaling. It is given twice a day after meal for 5 days.

Pathyapathya
Patients of both groups were asked to follow same Pathyapathya. All patients were advised to brush teeth twice a day and eating nutritious diet to avoid deposition of tartar further.

Methods
Both subjective and objective parameters were taken into consideration for the assessment of drug efficacy on scaling of wound. All clinical observations were recorded in a tabular form as follows:
At the end of the study, all follow-up patients were subjected to the data as compiled and interpreted.

The result have been classified according to the percentage of effectiveness on signs and symptoms as follows:
Very effective- 90-99% effective on signs and symptoms.
Effective- 75-90% effective on signs and symptoms.
Slight effective- 50-75% effective on signs and symptoms.
Not significant - Below 50% effective on signs and symptoms.

Observations and Results

General observations
1. A maximum of 51.67% patients were belonging to 30-45 years of age group, where the age group of 30-45 year is the standard monitoring age group for the oral health of adults especially for the level of severe periodontal involvement and general effects of care.
2. A maximum of 61.67% patients were females. It is probably due to lack of awareness about the oral hygiene.
3. A maximum of 70.00% patients were from rural area, suggesting that patients having poor nutrition which are considered to be one cause of tartar deposits.
4. A maximum of 41.67% patients were from lower middle class. This may be a reflection of socio-economic factors which in turn determine both nutritional status and oral hygiene habits.
5. A maximum of 55.00% patients were Pitta-Kaphaja Prakriti, suggesting tartar deposits are more common in Pitta-Kaphaja Prakriti cases [Table 1].
6. A maximum of 56.67% patients were housewives, suggesting patients neglect their oral hygiene due to lack of awareness.
7. A maximum of 60.00% patients were addicts, suggesting that these are aggravating factors for the tartar.
8. A maximum of 48.33% patients were having mixed (supra and sub-gingival) type of tartar deposits, neglected oral hygiene in primary stage.
9. A maximum of 53.34% patients were having moderate type of tartar suggesting that chronic gingivitis and periodontitis supervene if not treated early.
10. 100% patients were having bleeding gums, swollen gums and pain. 91.67% patients had reduced teeth strength, 86.33% patients complaint of mobility of teeth, 95.00% patients had reduced teeth whiteness, 91.67% patients had halitosis.

Effect of treatment

Bleeding gums
50.00% patients were improved on 3rd day, 70.00% improved on 7th day, 86.67% were improved on 15th day and 1 month follow-up in group A.
60.00% patients were improved on 3rd day, 66.67% improved on 7th day, 80.00% were improved on 15th day and 1 month follow-up in group B [Tables 2,3]. It signifies that the Pratisarana of Laksha Churna with Madhu causes haemostatic action on fragile oozing capillaries at wound site.

Swollen gums
46.67% patients were improved on 3rd day, 73.33% improved on 7th day, 90.00% were improved on 15th day and 1 month follow-up in group A.
53.33% patients were improved on 3rd day, 70.00% improved on 7th day, 83.33% were improved on 15th day and 1 month follow-up in group B [Tables 2,3]. It signifies that the Pratisarana of Laksha Churna with Madhu has an anti-inflammatory action.

Pain
36.67% patients were improved on 3rd day, 66.67% improved on

Table 1: Prakriti wise distribution of 60 patients

| Type of Prakriti | Group A no. (%) | Group B no. (%) | Total no. (%) |
|-----------------|-----------------|-----------------|---------------|
| Vata-Pitta      | 06 (20.00)      | 05 (16.66)      | 11 (18.33)    |
| Pitta-Kaphaja   | 16 (53.33)      | 17 (56.67)      | 33 (55.00)    |
| Vata-Kaphaja    | 08 (26.67)      | 08 (26.67)      | 16 (26.67)    |
Maurya and Shalakya: Vranaropaka effect of Laksha Churna with Madhu

7th day, 80.00% were improved on 15th day and 1 month follow-up in group A.

50.00% patients were improved on 3rd day, 63.33% improved on 7th day, 86.67% were improved on 15th day and 1 month follow-up in group B [Tables 2,3].

It signifies that the Pratisarana of Laksha Churna with Madhu has analgesic action.

**Teeth strength**
46.43% patients were improved on 3rd day, 78.57% improved on 7th day, 89.29% were improved on 15th day and 1 month follow-up in group A.

51.86% patients were improved on 3rd day, 74.07% improved on 7th day, 81.48% were improved on 15th day and 1 month follow-up in group B [Tables 2,3].

It signifies that the Pratisarana of Laksha Churna with Madhu increases gingival tone, surface keratinization and regeneration of gingival epithelial cells and thus strength of the teeth is restored.

**Tooth mobility**
38.46% patients were improved on 3rd day, 61.54% improved on 7th day, 84.62% were improved on 15th day and 1 month follow-up in group A.

40.74% patients were improved on 3rd day, 55.56% improved on 7th day, 85.19% were improved on 15th day and 1 month follow-up in group B [Tables 2,3].

It signifies that the Pratisarana of Laksha Churna with Madhu reduces pocket formation and helps in regain normal gingiva due to its astringent and purifying property.

**Teeth whiteness**
57.14% patients were improved on 3rd day, 71.43% improved on 7th day, 85.71% were improved on 15th day and 1 month follow-up in group A.

51.72% patients were improved on 3rd day, 68.97% improved on 7th day, 79.31% were improved on 15th day and 1 month follow-up in group B [Tables 2,3].

It signifies that the Pratisarana of Laksha Churna with Madhu removes stained pellicle from the tooth surface and enhances enamel whiteness.

**Halitosis**
53.57% patients were improved on 3rd day, 64.29% improved on 7th day, 89.29% were improved on 15th day and 1 month follow-up in group A.

37.04% patients were improved on 3rd day, 55.56% improved on 7th day, 77.78% were improved on 15th day and 1 month follow-up in group B [Tables 2,3].

It signifies that the Pratisarana of Laksha Churna with Madhu removes toxins, debris, food and bacterial particles; cleans the teeth, tongue and gingivae and makes breathe fresh.

**Overall effect on 1st month**
Both groups show effective results on all signs and symptoms. It signifies that result in group A has shown more or less identical effect on tartar induced periodontal signs and symptoms against group B [Table 4].

**Discussion**
Tartar in all 60 patients was removed by ultrasonic scaler as it acts as a barrier in healing. By ultrasonic scaler probe, the stream of water in the forms of tiny bubbles came in contact...
with the teeth surfaces will collapse and release shock waves. This has a bactericidal effect as it causes bacterial cell wall lysis. The stream of water produces pressure within the confined space of the periodontal pocket. This process can destroy Gram-negative rods and other bacteria. In trial group, Laksha Churna and Madhu encourages reattachment of gum to tooth surface due to its wound healing property.

Wound healing property of Laksha

Ayurvedic aspect

Laksha has Kashaya, Tikta and Madhura Rasa which is called Satmya Rasa. It pacifies Pitta. It is mentioned in Vranaropaka Churna in Bhela samhita.[3] It has Vednashamana, Daha Prashaman, Shothahara and Krimihara properties.[4]

Modern aspect

Laksha is having a mild abrasive action, which aids in eliminating plaque through cleaning and polishing tooth surfaces.[5] It restores natural luster and also enhances enamel whiteness.

Laksha Churna is astringent, having analgesic and anti-inflammatory property.

Its coloring agent imparts its color to soft deposits but can be rinsed easily from clean tooth surfaces so help in plaque control.

Wound healing property of Madhu

Ayurvedic aspect

Madhu has Sheeta Guna, having Madhura and Kashaya Rasa which are contradictory to the properties of Daha and Pitta. It is mentioned in Rakta Sthapana Mahakashaya and in Sandhiniya Mahakashaya.[6] It pacifies all three Doshas, having Vrana Shodhana, Sandhana, Ropana and Krimihara property.[7]

Modern aspect

Madhu increases the flow of saliva which contains a large number of leucocytes mainly polymorphonuclear leucocytes that migrate through the epithelium of the gingival crevice has not only a bactericidal effect but rinsing function also.

Thermolabile and photolabile substances that give madhu its bactericidal properties. Content of specific substances (inhibins) destroy many pathogens such as the Staphylococcus and the Diphtheria bacillus.

Hygroscopic nature of Madhu (by the potassium content) withdraws the moisture from the bacteria, which is essential for their existence and enables the wound to dry quickly.

Madhu stimulates the saliva flow which provides a protective coating for the oral tissues. Because of its bicarbonate and phosphate content it can act to buffer acids from food or micro-organisms. It contains lysozymes which lyse certain microorganisms, e.g., some Staphylococci and Gram-negative organisms, by breaking up cell walls.

Madhu contains small amounts of all the B vitamins (except B12) and vitamin C (ascorbic acid). These vitamins are most needed for the healing process of gingiva. Vitamin C is necessary for synthesis and maintenance of collagen. It is said to have crystal inhibiting properties and prevents plaque deposits.

Tissue responses after treatment in trial group are:
1. Epithelium restores surface continuity.
2. Connective tissue attaches bone to cementum and establish bone height.
3. Bone restores balance between formation and resorption.
4. Cementum attaches periodontal fibers [Figure 1].

Table 4: Summary of statistical analysis: (Combined)

| Signs/Symptoms    | Total | Improved | Not Improved | % relief | χ²   | Probability | Significance |
|-------------------|-------|----------|--------------|----------|------|-------------|--------------|
| Bleeding gum      |       |          |              |          |      |             |              |
| Group A           | 30    | 26       | 04           | 86.67    | 0.480 | P>0.05      | Insignificant |
| Group B           | 30    | 24       | 06           | 80.00    |      |             |              |
| Swollen gum       |       |          |              |          |      |             |              |
| Group A           | 30    | 27       | 03           | 90.00    | 0.1442| P>0.05      | Insignificant |
| Group B           | 30    | 25       | 05           | 83.33    |      |             |              |
| Pain              |       |          |              |          |      |             |              |
| Group A           | 30    | 24       | 06           | 80.00    | 0.480 | P>0.05      | Insignificant |
| Group B           | 30    | 26       | 04           | 86.67    |      |             |              |
| Teeth strength    |       |          |              |          |      |             |              |
| Group A           | 28    | 25       | 03           | 89.29    | 0.1920| P>0.05      | Insignificant |
| Group B           | 27    | 22       | 05           | 81.48    |      |             |              |
| Mobility          |       |          |              |          |      |             |              |
| Group A           | 26    | 22       | 04           | 84.62    | 0.1062| P>0.05      | Insignificant |
| Group B           | 27    | 23       | 04           | 85.19    |      |             |              |
| Teeth whiteness   |       |          |              |          |      |             |              |
| Group A           | 28    | 24       | 04           | 85.71    | 0.0825| P>0.05      | Insignificant |
| Group B           | 29    | 23       | 06           | 79.31    |      |             |              |
| Halitosis         |       |          |              |          |      |             |              |
| Group A           | 28    | 25       | 03           | 89.29    | 0.6221| P>0.05      | Insignificant |
| Group B           | 27    | 21       | 06           | 77.78    |      |             |              |
Maurya and Shalakya: Vranaropaka effect of Laksha Churna with Madhu

Conclusions

In trial group, rationale behind Pratisarana of Laksha Churna with Madhu is the fact that mechanical stimulation of the gingival cleansing by finger massage plays an important role in increasing gingival tone, surface keratinization and gingival circulation. This is resulted in an overall improvement in the gingival health due to modulation of the gingival host defence mechanism.

On the basis of the results of present study, it can be concluded that the Pratisarana of Laksha Churna with Madhu on scaling wound can have better line of treatment in the successful management of tartar without any systemic use of drugs.

References

1. Athavale VB. Dentistry in Ayurveda (Danta Shastra). ed. Delhi: Choukhamba Sanskrit Pratishthan; 1999. pp. 7.
2. Kaviraj Kunjalal Bhishagratna, Translator. Sushruta Samhita – Vol. 2, Chikitsa Sthana, 22, 2nd edition, Choukhamba Sanskrit Sansthan, Varanasi, 2002; 545-46.
3. Sharma P., editor. Bhelra Samhita, Chikitsa Sthana, Vrana Chikitsa Adhayas, 27, 1st edition, Choukhamba Visvabharti, Varanasi, 2000; 469.
4. Bulusu Sitaram, Commentator. Bhavaprakash of Bhavmisra – Vol. 1, Laksha, 1st edition, Choukhamba Orientalia, Varanasi, 2006; 175.
5. Manson JD. Periodontics. 4th ed. London: Henry Kimpton Publishers; 1980. pp. 72.
6. Murthy K.R.S., editor. Vagbhat’s Ashtanga Hridayam Vol-1, Sutra Sthana, 15, reprint, Choukhamba Krishnadas Academy, Varanasi, 2005.
7. Bulusu Sitaram, Commentator. Bhavaprakash of Bhavmisra – Vol. 1, Madhu Varga, 1st edition, Choukhamba Orientalia, Varanasi, 2006; 550.

References

1. Athavale VB. Dentistry in Ayurveda (Danta Shastra). ed. Delhi: Choukhamba Sanskrit Pratishthan; 1999. pp. 7.
2. Kaviraj Kunjalal Bhishagratna, Translator. Sushruta Samhita – Vol. 2, Chikitsa Sthana, 22, 2nd edition, Choukhamba Sanskrit Sansthan, Varanasi, 2002; 545-46.
3. Sharma P., editor. Bhelra Samhita, Chikitsa Sthana, Vrana Chikitsa Adhayas, 27, 1st edition, Choukhamba Visvabharti, Varanasi, 2000; 469.
4. Bulusu Sitaram, Commentator. Bhavaprakash of Bhavmisra – Vol. 1, Laksha, 1st edition, Choukhamba Orientalia, Varanasi, 2006; 175.
5. Manson JD. Periodontics. 4th ed. London: Henry Kimpton Publishers; 1980. pp. 72.
6. Murthy K.R.S., editor. Vagbhat’s Ashtanga Hridayam Vol-1, Sutra Sthana, 15, reprint, Choukhamba Krishnadas Academy, Varanasi, 2005.
7. Bulusu Sitaram, Commentator. Bhavaprakash of Bhavmisra – Vol. 1, Madhu Varga, 1st edition, Choukhamba Orientalia, Varanasi, 2006; 550.

Hindi Saransh

दंतशर्करा उन्मूलन पश्चात मधु युक्त लाक्षा चूर्ण लेप के व्रणरोपण प्रभाव का अध्ययन

मुलता मौर्य, दिनेश के. मौर्य

आयुर्वेदानुसार दौंतों को ठीक प्रकार साफ न रखने से वायु से शोषित कर अक्सर दंतगत मल जम कर क्षाय हो सकता है। इससे दौंतों की दुःख, शुद्धत्व, सांदर्भिक आदि गुण बचा जाता है। इसमें मुख से दुर्गंध आती है। इसको दंतशर्करा कहते हैं। आधुनिक विचार से, मूल जम जाने से जो कठिन पदार्थ दौंतों पर जम जाता है उसको Tartar कहते हैं। इसकी विकिलस में दंतशर्करा का उन्मूलन कर देना चाहिये परंतु ध्यान रखें कि दंतमूल को कोई क्षति न रहे। इसके बाद लाक्षा चूर्ण में शहद मिलाकर उस स्थान पर प्रतिसारण कर नॉन चाहिए। दंतशर्करा को उखाड़ने के बाद लाक्षा चूर्ण एवं शहद के गुण रोपण गुण से दोष जल्दी ठीक हो सकता है। यह प्रयोग में आसान, सस्ता एवं दुष्परिणाम रहित है।