ROLE OF LEKHANAKARMA IN THE MANAGEMENT OF DANTASHARKARĀ W.S.R TO CALCULUS

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ABSTRACT :

Dantasharkarā is descried under the Dantagat Rogās in our classics, which is a group of the *Mukha Rogās. Dantasharkarā* can be correlated with Calculus on the basis of similarities in sign & symptoms, involvement of anatomical structure, aetiology and prognosis. It is *Kapha Vāta Pradhāna Vyādhi.* Calculus is the early stage of periodontal diseases. This occurs due to negligence of oral hygiene, changing life-style, habits, and addictions. Statistical data reveals that, periodontal diseases affect millions of people in the world. Hence, *Dantasharkarā* should be treated effectively. *Lekhanakarma* is mentioned for management of *Dantasharkarā* in *Astang hridayam. Acharya vāgbhatta* clearly mentioned *Dantalekhana shastra* for *Lekhanakarma* of *dantasharkara*. The calculus is removed by the procedure of scaling with handscaler or ultrasonicscaler in modern science. The characteristic of *Dantalekhana shastra* is almost similar with handscaler. In present study, *Lekhanakarma* was selected as surgical administration followed by *pratisārana* of *Lodhra chūrna* in the management of *Dantasharkarā* and also advised for maintenance of proper oral hygiene which is beneficial for no recurrence of tartar and reduced risk of other periodontal diseases. The purpose is to achieve a clean surface that can be maintained further, with regular oral hygiene, thereby lowering risks for tooth decay and periodontal disease.

Aim: To evaluate the efficacy of *Lekhanakarma* in the management of *dantasharkarā* w.s.r to calculus

Material and Methods: Total 10 patients of age more than 16 years were registered. Assessment was done based on observing Graded clinical Sign & Symptoms of *dantasharkarā*. The data obtained in clinical study was analysed by using Wilcoxon Test.

Result: complete improvement was 70%**,** Markedly improvement was 20%**,** while Moderate improvement in 10% and none of the patients were remained unchanged.

Conclusion: Lekhana karma is effective on *Dantasharkarā.*

Key words: *Dantasharkarā,* Calculus, *Lekhanakarma, Dantalekhana shastra,* oral hygiene

INTRODUCTION: *Dantasharkarā* is mentioned by *Ācāryas* Suśruta & *Ācāryas* Vāgbhatta under '*Danta Rogās'*, which is a group of the *Mukha Rogās.*[1-2] It is characterized mainly GhanaMala *(sharkarā)* accumulation on Danta, *Mukhadaurghandhyatā* and occurs due to vitiated *Kapha* and *Vāta.*[2] The symptomatology of *Dantasharkarā* can be compared with calculus. In Dantasharkarā mainly *Kapha* and *Vāta pradhāna Vyādhi.* Due to improper cleaning of mouth and teeth, vitiated *Kapha Dosha* accumulate on surface of Danta which get *shoshit*(dry) by *Vāta Dosha* ultimately leads to formation of D*antasharkarā* . Similarly, according to modern dentistry Dental Calculus consists of mineralized bacterial plaque that forms

on the surfaces of natural teeth and dental prosthesis.[3] Accumulation of debris, plaque or calculus on the teeth margin mostly due to negligence of oral care. It is a state incompatible with good oral health. It can progress to more serious conditions like periodontitis. Statistical data reveals that, periodontal diseases affect millions of people in the world. The symptoms of periodontal disease start early age of life and cause the loss of teeth. The percentage of teeth loss was high in this compared to other dental diseases[4].

In *Ayurveda*; *Acharya Vāgbhatta* has mentioned *Lekhanakarma* in the management of *Dantasharkarā.*[5] According to him *dantasharkara* should be removed with the use of Dantalekhana *shastra.*[6] In modern dentistry the tartars are removed by the procedure of scaling with handscaler or ultrasonicscaler. The characteristic of *Dantalekhana shastra* is almost similar with handscaler. In present study, *Lekhanakarma* was selected as surgical administration followed by *pratisārana* of *Lodhra chūrna* in the management of *Dantasharkarā.*

Hypothesis:

H_0: There is no effect of *Lekhana karma* the management of *Dantasharkarā.*

H_1: There is effect of *Lekhana karma* the management of *Dantasharkarā.*

AIMS AND OBJECTS:

- To evaluate the efficacy of *Lekhanakarma* in the management of *dantasharkarā* w.s.r to calculus.

Plan of Study:

Patient's Consent -Written consent of the patient was taken before starting of treatment.

A. MATERIALS:

1. Conceptual Material: It was compiled from the text book of *Āyurveda*, latest

research papers, modern textbooks, recent articles, journals, PG & Ph.D thesis etc.,

2. Clinical Material:

A) Patients: A detail CRF (case report form) was made on the basis of signs and symptoms of *dantasharkarā* as well as calculus.

Patients fulfilling the inclusion criteria of *dantasharkarā* were selected from O.P.D and I.P.D Department of *Śālākya* from Govt. Akhandanand Āyurvedic hospital, Ahmedabad.

B) Drugs: The drug of the mention trial formulation was dispatched from the Govt. Akhandanand Ayurvedic Hospital.

B. METHODS:

a).Selection of Patient: The patients having signs and symptoms of *dantasharkarā* as well as calculus were selected.

b).Sample Design:

Method: Random sampling method.

Size: 10 registered patients.

Diagnostic Criteria:

I. Both subjective and objective criteria of *dantasharkara* as well as calculus.

Parameters:

Subjective :

1. *Mukhadaurgandhyatā* - Foul smell / Halitosis

2. *Dantamamsa seeryatha* –Gingival recession

3. *Dantamulgat sotha*-Inflammation of gums

4. *Raktha srava* - Bleeding gums

Objective : Calculus Index

Examination: - B.P, Pulse, R.R and Temperature

-Rutine oral examination was be done under the light source.

Inclusion Criteria:

1. Patients presenting with signs and symptoms of *dantasharkarā* - calculus,

described as per Āyurvedic and Modern texts.

2. Age - above 16 year

Exclution Criteria:

- Patients with marked pus discharge from gums.
- Malignancy, syphilis or TB presenting disease, diabetes Mellitus and Hypertension, pregnancy.
- Presence of other somatic or mental disorder requiring treatment.
- Immune-compromised patients
- Patients not willing to be registered for the trial.

*Lekhanakarma***:**

*Poorvakarma***:-***Mukhasudhdhi (gargling)* with Luke warm water was carried out.

*Pradhānakarma***:-** *Dantasharkarā Nirharana* with *Dantalekhana shastra* (handscaler) –only once time

*Paschātkarma***:-** *Lodhra Chūrna* :- for *pratisārana karma* twice a day upto associated symptoms reduced.

Pathyā-Apathya:

- Advised soft food
- Advised soft brushing twice a day
- Advised Rinsing after meals
- Avoid hard and hot food
- Avoid hard brushing.
- Avoid junk foods.

Follow Up: Follow up was done upto 15 days after the completion of therapy.

Criteria for Assessment: Patients were assessed before, during and after the treatment by

- **Observing graded clinical Sign & Symptoms of *Dantasharkarā.***

Subjective symptoms were assessed with the help of following scoring techniques.[7]

1) *Daurgandhyatā* (Halitosis):

0 : Absence of bad odour

1 : Presence of mild bad odour

2 : Presence of severe bad odour

2) *Shiryamana Dantamamsa* (Gingival recession):

0 : At CE junction.

1 : At cervical 1/3

2 : At middle 1/3

3 : At apical 1/3

3) *Śotha* (Inflammation):

0 : Absence of inflammation

1 : Mild inflammation, slight change in color and in texture of the marginal or papillary gingival unit.

2 : Moderate inflammation, glazing redness, edema of the marginal or papillary gingival unit.

3 : Severe inflammation, marked redness, edema of the marginal or papillary gingival unit.

4) *Dantamūlagat Rakta Srava* (Bleeding):

0 : Absence of bleeding.

1 : Bleeding on probing.

OBJECTIVE ASSESSMENT (ASSESSMENT INDICES):

1) Calculus grading scale[8]

0 : no calculus

1 : Trace- trace level of calculus at gingival margin or between teeth

2 : Slight-calculus deposits 1 mm or less

3 : Moderate – calculus deposits 1 to 2 mm,but covering less than one third of teeth surface

4 : Heavy- calculus deposits greater than 2 mm,may extend over soft tissues,or may be bridge

Analysis Of Data And Presentation Of Result: The obtained data was analyzed statistically by using the suitable test.

Assessment Parameters: The result was evaluated on the basis of the relief of Sign & Symptoms and relief were classified as mild, moderate and complete according to the rate of cure.

- No improvement 0-25% relief
- Moderately improved 26-50 % relief

- Markedly imprived 51-75% relief
- Cured 77%-100% relief

OBSERVATION & RESULT: Patients reported in the age group of 20–50 years, among them 6 female patients and 4 male patients were registered. Regarding oral hygienic measures, majority of patients maintained poor oral hygiene.10 patients were treated with *Lekhanakarma*. Therapy provided statistically significant results in sign & Symptoms [Table- 1] Evaluating the therapeutic efficacy of *Lekhanakarma* on *dantasharkara*, statistically significant relief is observed in- *Mukhadaurghandhyatā* (90%), *Dantamūlagat Raktasrava* (85.71%), *Dantamamsa Seeryante* (70%). *Dantamūlagat Śotha* (85.71%) & Calculus Index (85%)

Over All Effect of Therapy: 70% patients cured, 20% patients were markedly improved, 10% are moderately improved, and Unchanged was found in none of the patient.

[Table-1] Effect of Therapy on sign & Symptoms in the 10 Patients of *Dantasharkarā*

Sr. No.	Sign & Symptoms	'n'	Mean score			%	W	P
			BT	AT	Diff.			
1	Mukhadaurghandhyatā	10	1.70	0.20	1.50	90.00	55	0.002
2	Dantamūlagat Raktasrava	7	1.00	0.14	0.86	85.71	21	0.031
3	Dantamamsa Seeryante	10	1.40	0.50	0.90	70.00	44	0.004
4	Dantamūlagat Śotha	7	1.43	0.29	1.14	85.71	28	0.016
5	Calculus Index	10	2.90	0.50	2.40	85.00	55	0.002

[Table-2] Overall effect of therapy on 10 patients of *Dantasharkarā*

Result	No. of Patients	%
Complete remission (76-100%)	7	70%
Markedly Improved (51-75%)	2	20%
Moderate Improvement (26-50%)	1	10
Unchanged (0-25%)	-	-

DISCUSSION: *Dantasharkara* (calculus) is highly prevalent in India as well as the rest of the world. It is main cause of periodontal disorders. Calculus formation on the teeth due to lack of oral hygiene. Due to improper cleaning of mouth and teeth, *sharkarā* (*GhanaMala*) accumulate on Danta. Rough surface of *sharkarā* provides enough opportunity for Mala (food debris and plaque) to deposit. So, excessive deposition of food debris and plaque leads to *Mukhadaurghandhyatā* and also leads to *Dantamūlagat Śotha* and *Raktasrava*. Accumulation of *sharkarā* on the tooth margin leads to retraction of the gingival margin or loss of gingival tissue from the crown of the teeth which is called *dantamansashiryman*. An applications of Lekhanakarma with *Dantalekhana shastra* (handscaler) removed the *dantasharkarā*

(calculus) by using a proper method and reduces *Mukhadaurghandhyatā*, *Dantamūlagat Raktasrava*, *Dantamamsa Seeryante*, *Dantamūlagat Śotha* and prevent the infection with its best therapeutics action. *Pratisārana* of *Lodhra chūrna* was done as *paschātkarma* of *Lekhanakarma*. *Lodhra* has properties like *kapha-pittahara*, *grāhi, raktastambhaka, vrana śodhaka-ropaka* and *Śothahara.* So it was used for reattachment of gum to tooth surface due to its wound healing property. Follow up was done upto 15 days after the completion of therapy. Patient was advised for *Pathyā-Apathya* in follow up. So, no recurrence of *dantasharkara* found in patients during follows up. Thus, *Lekhanakarma* and maintain oral hygiene leads to minimize the formation of *dantasharkarā.*

CONCLUSION:

Dantasharkarā is efficaciously removed by *Lekhanakarma* with *Dantalekhana shastra* (*handscaler*).

The removal of *Dantasharkarā* with *Lekhanakarma* improved oral hygiene and reduced risk of periodontal disease. *Mukhadaurghandhyatā, Dantamūlagat Śotha*, *dantamansashiryman* and *Raktasrava* got reduced and there was no recurrence. *Lodhra* acts as *kapha-pittahara raktastambhaka, Śothahara, Mukhadaurghandhinashaka, vrana śodhana & Ropana* on account of which it reduces above symptoms and also prevent *dantaharsha* and *dantakshaya.*

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