

Case study

PAIN MANAGEMENT BY AYURVEDA IN SPONDYLOSIS– A CASE STUDY AND **SELECTIVE REVIEW OF LITERATURE**

ABSTRACT

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Introduction: In Ayurveda, Snehana is an important method of treatment in diseases of spine. As per Ayurveda, fatty substances are having properties opposite to that of Vata Dosha which is the root of many diseases. Therefore, Sneha (fatty substances) have important position in Ayurvedic treatment. Fatty substances are of 4 types of Ghrita (Ghee), Taila (oil), Vasa (muscle fat) and Majja (bone marrow fat).

Among these types, the literature is available pertaining to Ghrita (ghee), Taila (oil), and Majja (bone marrow fat) only, but Vasa (muscle fat) is not currently practised. We got a case study, in which cod liver oil capsules were used as a representative of Vasa Sneha.

A male of 35 suffering from lumbar spondylosis approached for moderate to severe low back pain. We successfully used cod liver oil capsules as representative of Vasa Sneha in this case.

Study design: A single case study and selective review of literature

Place and Duration of Study: Panchakarma OPD, Yashwant Ayurvedic medical college, PGTRC, Kodoli, 416114, Dist. – Kolhapur, Maharashtra, India

Presentation of case: this is a single case study in which a male of 35 years was suffering from chronic low back pain (CLBP) due to lumbar spondylosis. The patient had chronic low back pain which was aggravated for 3 months.

We prescribed him Ayurvedic medicines and cod liver oil capsules orally. The patient was followed for 16 months.

Results: outcome measure was assessed by the Oswestry low back pain disability questionnaire. The low back pain score was measured in different positions. The before treatment value was 36 (median \bar{x} = 3.5) and the score was 72, and after treatment value was 2 (median \bar{x} = 0) and the score was 4. The Mann Whitney U test was performed. The p was 0.00009 (<0.05).

Conclusion: It is concluded that cod liver oil can be successfully used as a representative of vasa Sneha, and it is very effective in relieving chronic low back pain in lumbar spondylosis along with other ayurvedic preparations

Keywords: Vasa Sneha, cod liver oil, muscle fat, chronic low back pain

1. INTRODUCTION

Snehana (therapeutic oleation) is the administration of fatty substances into the human body through various routes like oral route, anorectal route, smearing of fats over skin etc. It forms an important part of Ayurvedic treatment. It is not only useful for treating diseases, but also plays a significant role in maintaining health among healthy individuals.

The Snehana Drugs are divided into 4 types basically, Ghee, oil, Vasa (muscle fat) and Majja (bone marrow fat). Each type has specific qualities and indications for example in patients having frequent constipation or hard stools, oil is preferred among the 4 types of fatty substances. It is essential to select fatty substances in a particular condition to relieve the symptom perfectly.[1]

However, at the present time, only ghee and oil are in practice and Vasa (muscle fat) and Majja (bone marrow) are not in practice.

In a case study, by (late) Dr T.M. Gogate, cod liver oil capsules were used as a representative of Vasa Snehana in a patient suffering from earache. The patient had good relief. In this anecdote, cod liver oil capsules were used as representative of Vasa Snehana Pana. [2]

In the present case study also, cod liver oil capsules were used as a representative of Vasa Snehana along with other Ayurveda medication.

Analysis of the low back pain was done using the Oswestry disability index for low back pain prior to initiating the therapy and after the completion of the therapy. We found that there was a significant reduction in the pain and associated symptoms in absence of modern medicines. The patient was able to resume his daily routine without any fear and pain.

2. SELECTIVE REVIEW OF LITERATURE

In Ayurveda, fatty substances are described in detail. The sources of fats such as plants like sesame, mustard etc. and animal such as cow milk, buffalo milk etc. are also described. The method of the extraction of fats is also described for example, preparation of ghee from milk. Since these fatty substances play a key role in the treatment of diseases as well as to maintaining health, Ayurveda gives a special position to the fats or fatty substances.

Snehana (therapeutic oleation) is the method of the application of fatty substances to the human body. The method of application may be internal or external.

Ayurvedic treatment cannot be completed without application of fatty substances.

Snehana or fatty substances are originated from plants or animals i.e., Sthavar yoni or Jangam yoni. The fatty substances are divided into 4 types of viz. ghee (Ghrita), oils (Taila), Vasa (muscle fat) and Majja (bone marrow).

In the Ayurvedic texts like Charaka Samhita, Sushruta Samhita and Ashtang Sangraha, qualities and indications of each type of fatty substance has been mentioned in detail. For better and quick results in the treatment, the suitable fatty substance among the 4 types must be applied, for example, ghee is suitable for the persons with Vata – Pitta dominance and the diseases due to Vata and Pitta. Oil is mentioned as suitable for stoutness. It is applicable in sinus and constipation (hard stool), [3,4,5]

However, in the present era, only ghee and oils are in practice and there are also some studies to establish the use Majja (bone marrow) but there is not a single publication regarding the Vasa (muscle fat) among these 4 types of fatty

substances. Vasa (muscle fat) has been mentioned in the treatment of various pains like pain due to various injuries, **bone injuries**, pain in the joints, abdominal pain etc. but, since the Vasa Sneha has been not in use in the current practices, this description has **remained** in the texts only. (fig.1)

In this connection, we got a case study by (Late) Dr.T.M. Goagate, a veteran Panchakarma physician. In this case study, he used cod liver oil capsules orally in the patient having earache. In that case study, excellent relief in earache was reported by the author. As per Ayurveda, Vasa is defined as the fat obtained from Mamsa (flesh), while Majja (bone marrow fat) is the fat inside bones. Though cod liver oil is considered as an oil in modern medicine, since it is extracted from fish liver (cod fish -Gadidae) which can be considered as Vasa from Ayurvedic perspective. Secondly, among properties of oil, there is no indication of pain. Vasa is indicated in various pains like Asthi Ruja (severe pain in bones), Sandhiruja (pain in joints), Marmaruja (pain in the Marma) etc. therefore, by applying reverse logic i.e., from action the cause is investigated), cod liver oil capsules gave good relief in the chronic low back pain. Thus, cod liver oil was considered as representative of Vasa Sneha.

Cod liver oil contains higher concentrations of vitamin A and vitamin D. It also contains omega-3 fatty acids. The presence of omega 3 fatty acids in cod liver oil is in range of 11-24%. it also contains EPA (eicosatetraenoic acid) and DHA (docosahexaenoic acids) cod liver oil also contains other unsaturated fatty acids such omega 6 fatty acids mainly linoleic acid and arachidonic acid and omega 9 namely oleic acid which are also useful for health.

By considering the indications of Vasa Snehapana, chronic low back pain (CLBP) is the condition in which, there is continuous pain. As low back is the seat of Vata as per Ayurveda. CLBP is considered as **a Vata** dominant disorder. Fatty substances are the mainstay in the treatment of any Vatavyadhi. So, Cod liver oil capsules were used as Vasa Sneha in this case study. **It is used as Shaman Sneha (palliative). The patient was asked to consume cod liver oil capsules when he was hungry, so that it may act as Shaman Sneha (palliative)**

Cod liver oil has been used **for years** in modern medical science as a rich source of Vitamin-D and it plays **a very** good role in the treatment of rickets, beriberi. It has been used since ancient times in Europe. Hippocrates also used cod liver oil. Edward Mellanby, an English physician conducted a study in 1919 to explore the role of diet in the etiology and treatment of rickets. [6] In 1922, **the therapeutic** value of cod liver oil and young sunlight against rickets was confirmed. [7] Fish oil might encourage brain development and gene expression to brain maintenance during aging through nutrigenomic mechanism.[8]

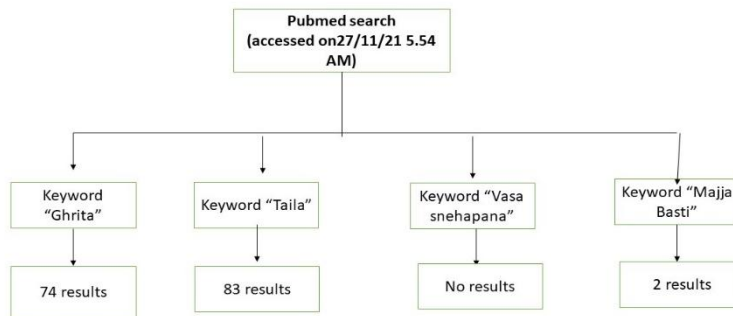


Figure 1 review of literature

2.1 CASE STUDY

A male of 35 years visited OPD of Panchakarma with his relative complaining of chronic low back pain (CLBP). A desperate man having the poor economic background and working as laborer in Peth Vadgeon a town near Kolhapur, Maharashtra state.

He was having episodes of moderate to severe low back pain in the last 3 months. The pain used to be so severe that, he was not able to continue the work. He returned from the work due to pain. So, he rushed to an orthopedic surgeon and had investigations and treatment, He was informed that he had been suffering from lumbar spondylosis. He started consuming medications as prescribed, but he did not have relief. The pain was related to overactivity. The surgeon advised him to consume the analgesics, nutrients and calcium supplements, that he prescribed and take rest, which was not feasible for him, as the only working person in the family. As the patient had to join his work, he looked for an alternative treatment. He arrived at our hospital as his uncle brought him. He was examined in detail at our hospital. He was non-diabetic, non-hypertensive and was not having any other disorder. He was a thin person (body weight 52 kg, height – 5 feet, 3 inches). The nature of pain was moderate to severe and persisted for 4 – 6 hours. The pain was relieved after the ingestion of pain killers temporarily.

He was having a history of trauma, but it appeared not so severe, and it was too old. The record of the trauma was missing, the oral history appeared that it was not severe and not directly over the low back. (Fig.2)

The patient was exhibiting signs and symptoms related to Vata Dosha, so, as per Ayurvedic principles, fatty substances were applicable in this condition. Therefore, the treatment for Vata alleviation was given (Table No.1)

He was also given local Snehana in the form of sesame oil massage over concerned body part followed by Swedana (fomentation) for 3-4 days. He got relief by Snehana -Swedana. Therefore, it was concluded that Niram Vata is present. So, cod liver oil was started as representative of Vasa Snehana. Since the patient was not able to visit the hospital for Snehana – swedana, he was asked to take the medicines at home.

The main reason to prescribe cod liver oil capsules in this patient was the patient was suited for Snehana (therapeutic oleation). In the Ayurvedic texts, Vasa (muscle fat) is indicated for the patient suffering from Marma Ruja (pain in Marma-vital points). As low back is also a marma as per ayurveda, Vasa (muscle fat) was indicated for him. Secondly, Vasa Snehana (muscle fat) is indicated for those who perform heavy physical activities like lifting, walking etc. The patient was working as laborer at a construction site involving heavy physical work. Thirdly, Vasa (muscle fat) is also useful for those who feels intense hunger and who consume large quantity of food. This was also seen in this patient. So, vasa (muscle fat) in the form of cod liver oil capsules were prescribed for this patient.

Timeline symptoms



Figure 2 timeline of symptoms

Once cod liver oil was prescribed, the patient had marked relief in the symptoms. After a few months he began to visit the workplace. He also started to work next week, and he has good confidence about the treatment. He used to have low back pain sometimes, but as soon as he started cod liver oil capsules, the pain relief was there. He was asked to stop all the medicine and continue cod liver oil only. So, he was on cod liver oil for 7 – 8 months.

In September 2020, he visited the orthopedic surgeon once again but not because of pain but for another patient's consultation. He was advised to take an x-ray to check the prognosis. The x-ray was showing spondylosis at the level of L₄ – L₅. (Fig.3) He was taking the cod liver oil capsules continuously.

In the year 2021, he stopped cod liver oil as well and now he is free from low back pain. He has been working with full efficiency. He has been advised to take sesame oil massage regularly before bath and avoid pungent taste food articles, as pungent taste is responsible for the disease chronic low back pain, as per Ayurvedic literature.

The follow up was taken in March 2021, at that time patient was free of chronic low back pain without any kind of medicine. He was performing all his daily activities including physical activities, related to agriculture without any trouble. We followed up with the patient for further 6 months. But there was no recurrence in the symptoms. However, it should be noted that, the patient feels the low back pain occasionally, but it is very mild, and it often gets relieved by a local massage with sesame oil/Nirgudi oil and sudation with sand at home. The patient also consumes

cod liver oil capsules as soon as the episode of low back pain appears. He mentioned 2 -3 times the episodes of low back pain in these 6 months.



Figure 3 x-ray LS

Table 1 treatment 1

SR	Medicines	Dose	Anupana
1.	Sinhanada Guggul [9]	250 mg two times AD	Hot water
2.	Ekangveer Rasa [10]	125 mg two times AD	Honey
3.	Mahavatvidhvanas Ras [11]	125 mg two times AD	Honey
4.	sesame oil massage & hot fomentation [12]	-----	-----

Table 2 treatment 2

SR	Medicines	Dose	Anupana
1.	Sinhanada Guggul	250 mg two times AD	Hot water
2.	Ekangveer Rasa	125 mg two times AD	Honey
3.	Mahavatvidhvanas Ras	125 mg two times AD	Honey

4. Cod liver oil capsule 2 cap 2 times (415) Hot water

1. Sinhanad Guggul is preparation useful in pain and edema in the joints. It contains Trifala, Amruta, Guggul, Gandhaka and castor oil.

2. Ekangveer Rasa – It is indicated in paralysis, facial paralysis, and sciatica. It contains Rasa Sindur, Abhraka Bhasma, Loha Bhasma, Tamra Bhasma, Nag Bhasma, Trifala and Trikatu.

3. Mahavatavidhvansa Rasa – it is useful for joint diseases, it contains Kajjali, Nag Bhasma, Vanga Bhasma, Loha Bhasma, Tamra Bhasma, Abhrak Bhasma, Tankan, Vatsanabha and Trikatu

3. RESULTS AND DISCUSSION

3.1 Assessment of chronic low back pain

There are 28 different scales available for evaluation of low back pain. Oswestry low back pain disability index was applied.

The assessment of the low back pain was done with the help of the Oswestry low back pain disability index.[13]

It was done before the initiation of the therapy and the follow up was taken 30/11/2021. The score was compared. The findings of the score have been summarized in the table below

Table 3 Oswestry low back pain index score

SR		BT	AT
1.	Pain intensity	4	0
2	Personal care – washing/dressing	3	0
3	Lifting	6	1
4	Walking	3	0
5	Sitting	3	0
6	Standing	4	1
7	Sleeping	4	0
8	Sex life	2	0
9	Social life	4	0
10	Travelling	3	0
	Total	36	2
	Score	72	4

For the assessment of low back pain working hours, work nature, the Roland -Morris disability questionnaire [14] was applied.

SR		BT	AT
1.	Working hours	0	8
2.	Roland-Morris Disability questionnaire	2	10

The improvement in Roland Morris disability questionnaire score was 10 points of improvement (83%) which is statistically significant.

3.2 Statistical analysis

Since the obtained data is a scale, it is an ordinal type of data from one group. The before treatment value is 36 (median $\bar{x} = 3.5$) and score is 72 and after treatment value is 2 (median $\bar{x} = 0$) and the score is 4.

Mann-Whitney U test was performed at the level of 95% confidence interval using online Mann-Whitney U test calculator. The Z score was 3.74185. the p value was 0.00009. the result was significant at $p < .05$.

Thus, there is a statistically significant difference in the low back pain before and after the intervention.

3.3 Probable mode of action of cod liver oil in chronic low back pain

Cod liver oil has been used in the variety of the disorders like rickets, respiratory diseases, cardiac diseases, and lipid disorders. Cod liver oil contains omega-3 fatty acids in unsaturated form. oxidative stress and inflammation are two important causes in the chronic low back pain due to lumbar spondylosis. The etiopathogenesis of chronic low back pain is partially known. The oxidative stress is an important factor in the pathogenesis of inflammatory or non-inflammatory chronic low back pains.[15]

Omega-3 fatty acids probably reduce the oxidative stress and thereby, give marked relief in the pain. They may act as antioxidants by regulating antioxidant signalling pathways.

We have been using the conventional Ayurvedic preparations in the mild pain. This case was having moderate to severe pain and when cod liver oil capsules were administered, there was marked relief in the low back pain.

Now the conventional Ayurvedic preparations are hold and only cod liver oil capsules are administered, still there is marked pain relief in chronic low back pain. Therefore, we concluded that cod liver oil capsules administration caused significant pain reduction in our case.

We also believe that cod liver oil capsule can be considered as Vasa Sneha in Ayurveda.

4. CONCLUSION

From our study, it is concluded that cod liver oil can be successfully used as a substitute to vasa Sneha, and it is very effective in relieving chronic low back pain in lumbar spondylosis along with other ayurvedic preparations. This intervention can be tried for a pilot study on a larger sample.

CONSENT (WHEREVER APPLICABLE)

Written consent of the patient has been obtained for publication of the case report, x-ray and other findings and investigations.

ETHICAL APPROVAL (WHEREVER APPLICABLE)

Since the patient had moderate to severe pain, he was advised to consume the pain killers as per the severity of the pain

NOTE:

THE STUDY HIGHLIGHTS THE EFFICACY OF "AYURVEDIC TREATMENT" WHICH IS AN ANCIENT TRADITION, USED IN SOME PARTS OF INDIA. THIS ANCIENT CONCEPT SHOULD BE CAREFULLY EVALUATED IN THE LIGHT OF MODERN MEDICAL SCIENCE AND CAN BE UTILIZED PARTIALLY IF FOUND SUITABLE.

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