



A CASE STUDY OF NIRGUNDI PASTE UPANAHA IN THE MANAGEMENT OF SEVER'S DISEASE

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ABSTRACT

Sever's disease is one of the cause of posterior heel pain and it is considered a common pathological condition, especially in paediatric population between ages 8 and 15 years. This condition is characterized by heel pain and calcaneal inflammation in children who are physically active. The probable cause of the disease is overuse of the heel e.g., prolonged standing, jumping, running etc. To make a correct diagnosis, proper history taking, thorough physical examination, laboratory investigations and x-rays are needed. The positive heel squeeze test is positive in most of the cases. Treatment is usually conservative management and it includes complete physical rest, gentle active exercise, hot water fomentation, anti-inflammatory medicines, corticosteroids, etc.

Sever's disease can be correlated with *Padakantaka* (painful heel condition) in Ayurveda. The *upanaha* (poultice) with the paste of *Nirgundi* (*Vitexnegundo*) is beneficial in the management of this disease due to *vata*-alleviating and anti-inflammatory property of the *Nirgundi*.

Keywords – Sever's disease, *Padakantaka*, *Nirgundi*, *Vitexnegundo*, *Upanaha* etc.

INTRODUCTION: Sever's disease is one of the frequent cause of heel pain in pediatric population between 8 to 15 years with immature skeletons¹. Sever's disease was first described by James Warren Sever² in 1912. The incidence of disease is 3.7 per 1000 patients³. It occurs due to repetitive trauma (traction) to the secondary ossification centre where Achilles tendon inserts on the calcaneus⁴. It accounts 2% to 16% of all musculoskeletal complaints in children and boys are more likely to develop this disease, with the ratio to the male and female occurrence of 3: 1 (M:F). It is common among children who engage in sports e.g., running and jumping and usually, it is not related to the traumatic event⁵. Generally, the pain starts when the child involves in sports activities too

much; however, the pain subsides with the rest⁶. It may also develop in child who wears flat shoes.

Clinical examination reveals tenderness over the calcaneal bone where Achilles tendon inserts and squeeze test (compression of the posterior calcaneus) is positive in most of the cases and it suggests the underlying pathology^{7,8}. The gait examination exhibits a limping gait or walking on the toes to avoid putting pressure on the affected heel. The diagnosis is basically depends on the clinical examination and does not necessitate imaging studies. The plain x-ray may be needed to rule out bone fractures, infections and tumours.

The management of Sever's disease involves complete rest, use of analgesics and anti-inflammatory medications,

corticosteroids, ice packs, hot water fomentation, immobilization, use of especially designed brace, gentle active exercise, etc⁹. However, recurrence of the disease is also common.

Nirgundi(Vitexnegundo)

Ayurvedic properties¹⁰:

Rasa- *Katu* (pungent), *Tikta* (bitter)

Guna- *Laghu* (light), *Ruksha* (dry)

Virya- *Ushna* (hot)

Vipaka- *Katu* (pungent)

Doshakarma- *Kapha-VataShamaka*

The active components in the leaves are nishindine, flavanoids like flavones, luteolin-7, glucoside, casticin, iridioid, glycosides, an essential oil and other benzoic acid, B-sitosterol, and C-glycoside¹¹.

Nirgundi (*Vitexnegundo*) is a shrub which is commonly found in India. It grows up to 10 feet tall. It is usually used as a hedge plant. It can be reproduced readily from shoot cuttings. The leaves of the plant possess aromatic odour and have bitter taste.

The therapeutic properties of *Nirgundi* is anthelmintic, expectorant, carminative, digestive, anti-inflammatory¹², antiseptic, antipyretic, diuretic, rejuvenating, ophthalmic, etc. It is used in various inflammatory conditions, arthritis, colic, rheumatism, skin diseases, urinary disorders, wounds, ulcers, bronchitis, malaria fever, epilepsy, dysmenorrhoea etc.

3. Upanaha(Poultice)

Upanaha (poultice) is one of the types of *Swedana*(fomentation)that is advised in the management of numerous inflammatory conditions. Meaning of *Upanaha* is bandaging with medicaments. In case of pain due to *vata-dosh* dominance, a poultice of warm medicinal

herbal paste applied locally to the affected parts of the body is beneficial. To achieve better outcome, the applied *Upanaha* should be kept at the local site for at least a period of twelve hours. Various clinical conditions that involve pain, stiffness and edema can be treated by *Upanaha Swedana*¹³ with satisfactory results.

AIM AND OBJECTIVES OF THE STUDY

Detail study of Sever's disease, diagnostic methods, probable *Ayurveda* correlation and *Ayurveda* management of Sever's disease.

To Access the *upanaha* (poultice) with the paste of *Nirgundi* (*Vitexnegundo*) Sever's disease

CASE REPORT

Chief complain-14 year old boy presented with right heel pain from last 6 months. The pain was moderate in nature and aggravated with physical exercise and relieved with rest. Rest of the joints were normal.

Examination- Locomotor examination was done and all were normal. The squeeze test was positive.

Investigations- X-ray of the heel performed but it showed no abnormality. Routine blood tests like CBC and RBS were normal but CRP was positive.

Differential diagnosis- Plantar fasciitis, calcaneal spur, calcaneal fracture, ankle sprain etc.

Final diagnosis- Diagnosis was made on the basis of clinical examination. The final diagnosis was Sever's disease.

Consent- The treatment protocol was thoroughly described to the patient as his parents as well and proper written consent was taken before initiating the treatment. The study was conducted at Pareek Ayurveda clinic, Jaipur.

Treatment-Upanaha (poultice) with *Nirgundi* (*Vitexnegundo*) on the affected part (right heel) was applied for twelve hours. The procedure was continued for fifteen days.

Outcome- The pain started to diminish after 5 days of therapy and after 15 days there were no pain and no tenderness.



A positive test elicits pain upon the compression of the medial and lateral aspects of the heel.

Fig. 1-The calcaneal squeeze test.



Fig. 2-A.Nirgundi plant

B.Nirgundi Paste

C.Upanahaswedana

DISCUSSION: Sever's disease can be correlated with *Padakantaka*¹⁴ in Ayurveda. *Padakantaka* is *avata*vyadhi and characterized by *shula* (pain) in the heel. In case of pain due to *vata*dosha dominance, a poultice of lukewarm paste of *Nirgundi* (*Vitexnegundo*) to the affected heel area is beneficial.

Vitexnegundo is a reputed drug which is beneficial in various inflammatory disorders, especially in arthritis. In case of inflammatory disorders, there is over activation of phagocytes and production of reactive oxygen species e.g., superoxide (O_2^-) radicals, hydrogen peroxide (H_2O_2) and hydroxyl radicals¹⁵ (OH) which are

harmful for the surrounding tissue due to their oxidizing action and these oxygen species may cause lipid peroxidation resulting in membrane destruction. The tissue destruction then aggravates inflammatory mechanism by the production of chemical mediators and chemotactic factors¹⁶. The reactive oxygen species may also stimulate an enzyme called matrix metalloproteinase (also known as collagenase) which further causes destruction of tissues e.g., collagen destruction is seen in various arthritic disorders. *Nirgundi* (*Vitexnegundo*) can scavenge these reactive oxygen species and hence, it is beneficial in the

inflammatory conditions. Flavonoids are supposed to inhibit prostaglandin synthesis, which are well-known inflammatory mediators. The anti-oxidative property could be one of the mechanisms responsible for the anti-inflammatory outcome shown by the *Nirgundi*.

CONCLUSION

On the basis of single case study, the followings can be concluded –

- The lukewarm paste *upanaha* (poultice) is beneficial in the management of Sever's disease.
- Sever's disease can be correlated with the *Padakantaka* in the *Ayurveda*.
- The *Upanaha* procedure is very easy, cost-effective, non-invasive and well-tolerable procedure.

To evaluate the detailed outcome, the further study on large number of patients should be performed.

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