Case Report

*Krimighna* (anthelmintic) role of Neem Oil (medicated oil of *Azadirachta indica* Linn.) and adjuvant Ayurvedic therapies in the management of anal myiasis: A case report

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**Abstract**

Myiasis is an uncommon pathology of parasitic infestation in live mammals by fly larvae (maggots). The fly grows and gets nourished by invading host tissue. Epidemiology of Myiasis has been recorded in tropical regions of world. No any documentation has been found on Ayurvedic intervention for anal myiasis management. The study is about a 49-year male having anal myiasis along and interno-external piles together. The case was managed by local application of Neem oil (Medicated oil of *Azadirachta indica* Linn.) soaked gauze piece once a day on daily bases in the invaded tissues of myiasis along with Ksharasutra ligation in the base of pile mass once during the treatment protocol. Internal medicines like *Pippali* (*Piper longum* Linn.), *Erand Bhrisht Haritaki* (*Terminalia chebula* Retz. roasted with castor oil) and *Vidanga* (*Embelica ribes* Burm. f.) were prescribed along with the local management during the course of the treatment. The case was completely cured and was relieved in 29 days.

Neem oil revealed *Krimighna* (anthelmintic) effect which helped in tissue debridement and enhanced wound healing. Neem oil remains less irritant on local application and also gives soothing effect and kills the maggots as well.

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1. Introduction

A parasitic infestation of the body of a live mammal by fly larvae (maggots) that grow inside the host while feeding on tissue is described as Myiasis. Hand full of clinical researches are documented on case of anal myiasis along with anal pathologies most in pre-existing carcinomatous ulcers, condyloma acuminata, fistula-in-ano, and gangrenous haemorrhoids [1,2]. Neem (*Azadirachta indica* Linn.) is an Indian origin herbal medicine and classically indicated for its anthelmintic, disinfection, anthelmintic, anti-itching and wound healing activity [3,4].

Ksharasutra is a medicated seton device, which is practiced for the management of Haemorrhoids and known for its chemical cutting effect and pressure necrosis especially for the management of haemorrhoids [5]. Herbal medicines like *Pippali*, and *Haritaki* are single drugs that provide Deepana-Pachana effect and their anti-oxidant role helps in tissue healing [6].

This case is about Bahya Krimi (external maggotification) in Ayurveda, for which ‘Three stages management’ has been recommended by Charaka. They are *Apakarshana* (to remove the Krimi) *Prakriti Vighata* (counteracting the cause of disease) and *Nidana Parivarjana* (necessary prerequisite for cure and prevention of recurrence of disease) [7].

2. Case details

2.1. Patient information

A 49-year male labour was reported with 10 days history of severe peri anal pain along with irregular bowel habit. He developed on and off bleeding per rectum in bouts during defecation for 5 days. He revealed 3 days history of peri anal itching and crawling sensation. Poor hygiene, improper cleaning of private parts after defecation by using stones and grass and open defecation were revealed by the patient on the first consultation. On inspection active venous bleeding and live maggots were detected in open wound of 1 o’clock position on anal verge. 7 to 11 o’clock matted interno-external pile mass was also observed along with that. With
this, patient was diagnosed as a case of anal myiasis with interno-external piles [Fig. 1].

Haematology profile of the case was reported with Hb: 12.3 g%, TLC: 8600/cmm, DLC (polymorph neutrophils: 72, lymphocytes: 22, eosinophils: 03 and monocytes: 03), ESR: 50 mm/h; RBS: 102 mg/dL, BT: 1 min, 56 s and CT: 4 min 2 s. Serological investigations for HIV and HBsAg were found negative. Urine routine and microscopic examination was found normal (19/07/2017). All the investigations were carried out before and after the treatment [Table 1].

2.2. Ayurvedic management

After consultation and thorough investigations, the case was managed by applying therapeutic principles of management of maggots in Ayurveda along with conventional management of piles in Ayurveda i.e., Ksharasutra ligation [Table 2] [Fig. 2] [7,8].

Maggots were extracted from myiasis wound of the patient before wound dressing on once-a-day bases for initial 5 consecutive days of treatment. Neem leaves decoction (decoction of A. indica Linn.) sitz bath was given to the patient once a day followed by 5 ml Neem oil-soaked gauze pack dressing in myiasis wound for throughout the treatment duration i.e., 29 days. Interno-external pile mass was ligated under local anaesthesia on 8th day of treatment in single sitting with Apamarga Ksharasutra prepared at Ksharasutra Laboratory of PD Patel Ayurved Hospital (NABH Accredited). Post-operative wound of the sloughed-out pile mass was cleaned with Neem leaves decoction once a day followed by Neem oil dressing up to complete wound healing i.e., for 15 days from day 15th to day 29th from the initiation of the treatment. Neem oil was procured from the Sundar Ayurved teaching pharmacy (GMP certified) of the same institute.

Patient was given Pippali Churna (fine powder of Piper longum Linn.) 3 gm with honey before meal twice a day for initial 7 days of the treatment for Deepan Pachana purpose. Erand Bhrishta Haritaki (Terminalia chebula Ritz. roasted with castor oil) 6 gm was given once a day at bed time with Luke warm water throughout the treatment for complete 29 days. Vidanga Churna (Fine powder of Embelica ribes Burn.) 3 gm was given for complete duration of the treatment after meal twice a day. For post-operative 5 days patient was prescribed to take Tab. Cefixime 200 mg + ornidazole 500 mg 1 tablet twelve hourlies after meal with simple water and Tab. Diclofenac sodium 50 mg + Paracetamol 500 mg, 1 tablet twelve hourlies with simple water.

Patient was prescribed to have food of green gram and rice along with leafy vegetables and gourds throughout the treatment and all the flour products, bakery products and dairy products were avoided. Patient was also restricted to take alcohol. Patient was restricted to sleep in day time and restricted for awaking till late nights throughout the treatment. Patient was advised to use commode for defecation and cleaning the anal area with water to maintain local hygiene.

2.2.1. Follow up

After getting discharged from IPD unit of the hospital, patient was followed up on daily bases in OPD up to complete healing of the wound. After that for 6 months, patient was followed up for a year on monthly once bases on his physical OPD visitation. Till date (for last 3 years) he has not developed any other incident of same clinical condition and he is otherwise healthy in his daily routine and physical works.

3. Result

Maggots were removed completely by 5th day from initiation of the treatment. Ksharasutra along with ligated pile mass were sloughed out up to 7th post-operative day. Myiasis wound and post-operative wounds were healed and patient was completely free from pain and discomforts up to 29th day of the treatment [Fig. 3].
4. Discussion

Manual extraction of maggots provided Apakarshana (removal of the flea-larvae) whereas Prakriti Vighata (counteracting the cause of disease) was provided by Neem Oil application, with its anthelmintic effect. Regular application of Neem Oil provided Autolytic tissue debridement through its antimicrobial and anti-oxidant properties [9]. Anthelmintic properties of Neem (A. indica Linn.) have also been established against various parasite species [10,11]. Local application of Neem oil is less irritant. Moreover, turpentine oil irritates and provokes the maggots to come out of the wounds, but Neem oil helps in reducing the growths of microbes and maggots as well on regular application. Prakriti Vighata (counteracting the cause of disease) have been established in this case by this therapy.

Proper sanitization, use of commode lavatories, personal anal hygiene during and after therapy have provided Nidana Parivarjana (necessary prerequisite for cure and prevention of recurrence of disease). Ksharasutra ligation removed the pile mass from base by chemical cutting and pressure necrosis principle [3]. Moreover therapeutic effect of Ksharasutra provided moderate alkaline burn (with pH-9.5) and wound debridement, which augmented the complete demolition of maggots.

Antioxidant property of Pippali (P. longum Linn.) and Madhu (honey) provided tissue rejuvenation and promoted in physiological repair of cellular injury [12]. Eranda Bhrishta Haritaki is known for its Anulomana action (elimination of flatus, urine and faeces) [13]. That may have synergized the effect of therapy. Krimighna (anthelmintic) effect of Vidanga (E. ribes Burm.f.) has been classically mentioned and clinically proven. It may have augmented the therapy to recover the case throughout the treatment [14].

5. Conclusion

Clinical implementation of classical principles provides a horizon of research and validation of ancient science. A rare case of Anal myiasis with interno-external pile was cured with Ayurvedic principles of Vranakrimi Chikitsa of Sushruta along with additional benefit of low-cost management and without any harmful untoward effect to the patient.
Patient’s perspective

The patients opined that the entire treatment he opted was helpful to him for rising up from his dreadful condition. There was little pain during post operative dressing but it was far less in compare to pain he was having during his clinical condition of Myiasis and interno-external piles.

Informed consent

Informed written consent for the therapeutic procedure and scientific publication was taken prior to starting the management.

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None.

Author contribution

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The entire study clinically and documentation part has been completed by the author herself.

Conflict of interest

Nil.

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