

A case of myiasis in the post-excisional wound of a malignant lesion managed by Ayurveda

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Abstract

Parasitic infestation of the body by dipterous larvae belongs to the most undesirable events in patients with post-excisional wounds after malignant skin lesions. wound myiasis is more common in tropical regions. We reported a case of 55 years old female with wound myiasis with a history of surgical removal of non-melanoma skin cancer – basal cell carcinoma a local skin lesion approximately 0.5 -1 cm² sized from the left temporal region 15 days back under local anaesthesia. A case treated with maggots' extraction, *Triphala kwatha* (decoction of *Terminalia bellerica*, *Terminalia chebula* and *Emblica officinalis*) wound irrigation, and the local application of *Katupilla* (*Securinega leucopyrus* (Willd.) Muell) oil. Adjuvant ayurveda medicaments like *Pathyadi Kwatha*, *Avipatikar* powder and *Haritaki* (*Terminalia chebula* Retz.) powder were given during treatment. A case was completely cured in 50 days. *Triphala Kwatha* wound irrigation ceases the growth of maggots and microbes also provides

autolytic wound debridement. *Katupilla* enhances wound healing. Adjuvant medicament has *Pita Shamaka* (*Pitta* eliminate), *Anuloman* (regulating physiological movement) and *Shothahar* (anti-inflammatory) properties.

Keywords: Basal cell carcinoma, *haritaki*, *katupilla oil*, wound myiasis.

Introduction

Human myiasis is defined as the infestation of live vertebrates with dipterous larvae. These larvae in the wound feed on the host's living or dead tissue and body fluid. The tissue invasion in humans by maggots is generally a well-recognized complication of neglected wounds. A lack of hygiene and poor socioeconomic status, in the presence of an open wound are the most important predisposing factors for human wound myiasis. Worldwide, cases of myiasis in humans have been reported for multiple localisations, such as the foot, sternal, vulvar or tracheostomy wounds, leg ulcer, nose/sinuses, ear, eye (orbit), oral cavity or lymph nodes, tumour lesions, etc.^[1]

No documentation has been found on myiasis in the post-excisional wound of a malignant lesion managed by Ayurveda. This case was managed by topical application of *Katupilla oil* and systemic medicament.

Case report

A non-diabetic non hypertensive 55 years old female reported a with wound on the left temporal region for 15 days. Pricking pain and pus discharge from the wound for the last 7 days. The patient had a history of surgical removal of a local skin lesion approximately 0.5 -1 cm² sized from the left temporal region 15 days back under local anaesthesia. Histopathology of excisional tissue showed non-melanoma skin cancer – basal cell carcinoma. The patient had not taken or advised any chemotherapy or radiotherapy. The patient was clinically afebrile. The patient had poor hygiene maintenance related to the wound. The patient avoided wound dressing. After surgery, the patient did not visit the same hospital for follow-up and reported to our OPD after 7 days. The patient has not even changed dressing for 7 days. On examination, the patient was noted to have a wound on the left temporal region, a swollen and erythematous left forehead, with erythema extending to the left cheek with a fistula track. Pus was discharged from the wound, wound was covered with slough, tenderness grade 2, and maggots inside the wound. Wound connected to cheek with subcutaneous fistula track

with the opening. There were no lymph nodes enlarged at the left cervical, post-auricular, occipital, or pre-auricular region.

All Routine haematological blood investigations were found under normal limits except for low Hb-10.1 gm %, the total count was 12,546 /Cumm and erythrocyte sedimentation rate (ESR) was 45 mm/hr. In biochemistry investigations RBS (random blood sugar) -98mg/dl. virological investigations like Hepatitis B surface antigen (HBsAg), venereal disease research laboratory (VDRL), and human immunodeficiency virus (HIV) were found nonreactive. Urine routine and micro found in normal limit.

Case successfully managed through maggots extraction done under surface anesthesia by 10% xylocaine spray on the 1st day of consultation wound irrigation with *Triphala Kwatha* (decoction of *Terminalia bellerica roxb*, *Terminalia chebula Retz.* and *Emblica officinalis L.*) once a day, and wound dressing with *Katupilla (Securinega leucopyrus (Willd.) Muell) oil* once a day. Systemic management included *Pathyadi Kwatha* 30 ml two times a day empty stomach, *Avipatkar* powder 250 mg two times a day empty stomach and *Haritaki (Terminalia chebula Retz.)* powder 3 gms at night with lukewarm water.

Timeline:

The timeline of the clinical events in the case is described in Table 1.

Table 1: Case timeline

Year/ week/day	Relevant medical history and interventions	
4 th Dec 2021	Excision of non-melanoma skin cancer – basal cell carcinoma under local anesthesia.	
Day of visit	Summaries from initial and follow-up visits and descriptions of disease condition	Interventions
1 st day (21 st dec 2021)	Came to opd with a wound at left temporal region for 15 days	All routine hematological, biochemical, urine routine and microscopic. Maggots' extraction, <i>Triphala kwatha</i> wound irrigation, and wound bandage done with <i>Katupilla oil. Pathyadi</i>

		<i>Kwatha</i> 30 ml two times a day empty stomach, <i>Avipatikar</i> powder 250 mg two times a day empty stomach and <i>Haritaki</i> powder 3 gms at night with lukewarm water advised.
2 nd day (22 nd dec 2021)	No maggots were noted in the wound.	Local as well as systemic management were given as mentioned above.
8 th day (28 th Dec 2021)	Cellulitis at the left cheek, pus discharge resolved and tenderness grade I noted.	Treatment was given as described above. Blood investigations like Hb, TC, ESR were done. Hb was 10.2 gms%, TC 11,127 / Cumm and ESR 30 mm/hr
25 th day (14 th Jan 2022)	cessation of exudates, tenderness, inflammation, half of wound contraction with granulation tissue and healed fistula track noted	Same as above
40 th day (29 th Jan 2022)	The partially healed wound was achieved.	Same as above
50 th day (8 th Feb 2022)	Complete wound healing noted.	Local and oral medicament stopped.

Follow-up & outcome

A case was successfully managed in 50 days. On the 1st day of consultation, the patient was noted with an unhealthy wound with maggots inside the wound, tenderness grade 2, localized temperature, inflamed edges, cellulitis at the left temporal region to the right cheek and a wound connected to the fistula opening at the left cheek with the superficial track. Cellulitis at left cheek, pus discharge resolved and tenderness noted grade I after 7 days of treatment. On the 8th day of treatment, Hb was 10.2 gms%, TC 11,127 / Cumm and ESR reduced from

45 mm/hr to 30mm/hr. Regular wound irrigation with *Triphala Kwatha* and dressing with *Katupilla Oil* were done (image 1,2). The patient recovered with cessation of exudates, tenderness, inflammation, half of wound contraction with granulation tissue and healed fistula track noted by day 25 (image 3). On the 40th day, a partially healed wound was achieved (image 4). Complete wound healing noted by day 50.

	
<p>Image 1: On the day of consultation</p>	<p>Image 2: on the 1st day of consultation Maggots in the wound</p>
	
<p>Image 3: on the 25th day of contracted wound</p>	<p>Image 4: on the 40th day partially healed wound and completely healed fistula opening</p>

Discussion

Treatment of *Krimi* (worm) included *Apakarshana* (removal of the flea-larvae), *Prakriti Vighata* (counteracting the cause of disease) and *Nidana Parivarjana* (a prerequisite for cure and prevention of recurrence of disease). *Apakarshana* is done by Manual extraction of maggots from the wound. *Prakriti Vighata* is provided by Regular wound irrigation with *Triphala kwatha* having Anthelmintic,^[2] antibacterial and antimicrobial properties.^[3] *Krimighna* (Anthelmintic) property of *Triphala* ceased the growth of microbes and maggots. It also provided Autolytic tissue debridement through its antimicrobial and antioxidant properties.^[4] cytotoxic effect of *Katupilla* might prevent further proliferation of the cancerous cell.^[5] The acidic pH of *Katupilla* enhances wound healing by reducing the toxicity of bacterial end products, controlling wound infection, increasing antimicrobial activity, altering protease activity, releasing oxygen and enhancing epithelization and angiogenesis in the wound bed.^[6]

Patient properly educated on the importance of daily wound bandaging, and personal hygiene during treatment as a part of *Nidan parivarjana*.

Avipattikar Churna has *Mrudu Virechana* (mild laxative), *Pitta Shamaka* (~pitta eliminate), and *Vidagdha Pitta Pachaka* (~ digestion of acidification pitta) properties that eliminate aggravated *Koshthagata Pitta* and reduce inflammation surrounding the wound. *Pitta* is the main culprit in to development of *Pakavastha* (inflammation/ infection). It has an antioxidant effect that reduces DNA damage, mutagenesis, carcinogenesis, and inhibition of pathogenic bacteria growth.^[7]

Pitta Shamaka and *Ama Pachana* (digestive) properties of *Pathyadi Kwatha* break the pathology at the *Koshtha* (~ nature of bowel) level. The anti-inflammatory and analgesic activities of the ingredients of *Pathyadi Kwatha* were assessed in the trial models.^[8] It may resolve cellulitis and inflammation at the wound site.

Anulomana (regulating physiological movement) effect of *Haritaki* (*Terminalia chebula* Retz.) releases accumulated *Mala Sanchaya* from *Shakha*. *Haritaki* distributed a major increment in complete protein, DNA and collagen substance inside the granulation tissues of rewarded wounds.^[9] It shows an inhibitory zone against *Pseudomonas aeruginosa*, *P. fluorescens*, *Bacillus bronchiseptica*, *Staphylococcus Salmonella epidermidis*, *B. cereus*, *B.*

pumilis, Shigella boydii and Escherichia coli.^[11] It further resolves infection. It also shows ovicidal and larvicidal activity in vitro.^[12]

Conclusion:

The current treatment concept is based on *Krimi Chikitsa*, *Shothahara Chikitsa* and *Vrana Shodhana- Ropana Chikitsa*. A case of myiasis in the post-excisional wound of a malignant lesion can be managed by Ayurveda-based principles without any unfortunate effect on the patient.

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