



**Case Study**

**EFFICACY OF AYURVEDIC MEDICINES AND LEECH THERAPY ON PSORIASIS, COMPLICATED BY RECURRENT CELLULITIS: A CASE REPORT**

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**ABSTRACT**

Cellulitis and psoriasis are common bacterial skin infections. Psoriasis affects 1-3 percent of the world's population. According to Ayurveda, it is a curable disease, and leech therapy, a bloodletting method is considered the effective method in the treatment of psoriasis and cellulitis with no side effects. To evaluate the efficacy of leech therapy, Ayurvedic medicine, and lifestyle modification in the management of psoriasis complicated by recurrent cellulitis and other co-morbidities. This is a case report of a known diabetic and obese 39-year-old female patient. An Ayurvedic management plan and dietary modifications with leech application were administered to the patient. Leech application was done in five sessions with regular follow-ups. Leech therapy showed outstanding results in producing symptomatic relief for patients. It has helped the patient in reducing the condition of psoriasis and cellulitis with no common steroid therapy complications like weight gain and hyperglycemia. In this study, leech therapy showed excellent results in producing symptomatic relief for the patient. Leech therapy has a considerable anti-psoriatic and anti-cellulite impact without causing any toxicity or side effects.

**INTRODUCTION**

Psoriasis, most widespread diseases marked by red and itchy patches covered with white scales. They can grow on any part of the body, although the majority of them appear on the scalp, elbows, knees, and lower back. This skin disease can affect the person's psychological status and disturb social life. The specific cause of Psoriasis is uncertain, in 30% of patients, multifactorial inheritance is discovered, with a family history of psoriasis.<sup>[1]</sup>

Psoriasis can occur in all races and genders worldwide, with a prevalence of 2%.<sup>[2]</sup> In India, Psoriasis affects approximately 0.8% of its population.<sup>[3]</sup> According to Ayurveda, all skin ailments are classified as *Kushtha Vyadhi*- skin diseases, and the formation of *Kushtha Vyadhi* is caused by the involvement of *Rakta dosha*- blood disorders and *Tridosha*- three elements, and they are categorized

into distinct categories depending on the prevalence of contributing *Dosha*.<sup>[4]</sup>

Psoriasis is a recurring chronic illness requiring long-term treatment. The current therapy includes corticosteroids, anti-mitotic medications, Tumor necrosis factor (TNF)-alpha-blocking antibodies, TNF-alpha blockers, and other allopathic treatments. These treatments have certain shortcomings. Acharya Sushruta proposes bloodletting recommendations and asserts that it is the most effective treatment for half of the body's diseases.<sup>[5]</sup> The *Jalaukavacharana Karma* (leech therapy), *Prachhanna Karma* (scratching),<sup>[6]</sup> and *Siravedhana Karma* (vein puncture),<sup>[7]</sup> *Jalauka avacharna Karma*<sup>[8,9]</sup> is considered the ideal method to expel out the vitiated blood safely, and effectively.

We aimed to study management of severe psoriasis complicated by recurrent cellulitis and other comorbidities like diabetes mellitus and hypertension with the help of *Rakta-Mokshana* i.e., leech therapy.

**Case Report**

A 39-year-old female patient reported to Madhavbaug Clinic, Aundh, Pune, with a complaint of severe psoriasis and cellulitis.

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## Clinical Findings

Patient's lower limbs below the knee were covered in large red and silvery scales that itched at the time of presentation. She was diagnosed case of psoriasis for the last 14 years. Also, as a complication of psoriasis patient was suffering from recurrent painful cellulitis of both legs. Various local treatments and oral steroidal medication, as well as oral and IV antibiotics, have been tried in the past, but she did not get significant relief.

## Timeline

Along with severe psoriasis, the patient had other comorbidities i.e., obesity (since childhood), cellulitis (since 14 years), hypertension (since 11 years), gestational diabetes mellitus (since 7 years), depression, and insomnia (since 14 years), and leucorrhoea. There is no history of surgical illness. There is no history of psoriasis in the family. Her mother and father suffer from hypertension, while her sibling has diabetes. Table 1 presents the data of investigations done.

**Table 1: Data of investigations done**

Date	Test	Results
24/5/21	2D Echo- LEVF	60%
	LVESV	2.8mL/m <sup>2</sup>
	Diastolic dysfunction	2
	IVS	11
	PAH	0.0mmHg
10/6/21	Hb	8.5mg/dl
14/6/21	Doppler of both limbs	Diffuse subcutaneous edema over both lower limbs
7/7/21	Serum creatinine	0.7mg/dL
	HbA1C	7.2mmol/mol
	Iron	25mcg/dL
	Uric acid	7.0mg/dL

IVS - Intraventricular septum, LEVF - Left ventricular ejection fraction, LVESV - left ventricular end-systolic volume, PAH - Pulmonary arterial hypertension

## Diagnostic Assessment

Blood sugar level (fasting/post-prandial), lipid profile, complete blood count, urine routine, liver function tests, and renal function tests were advised to the patient for further diagnosis.

Based on prior diagnosis, the psoriasis was considered as *Ekkustha* and following Ayurvedic management plan with Leech application was administered to the patient.

## Therapeutic interventions

**Leech Therapy:** Leech therapy was performed according to the procedure described earlier.<sup>[10]</sup> Initially, a leech was placed on the affected part and observed for two minutes (to allow the leech to suck the blood from the affected area). To keep the leech moist, a damp gauze was placed over its body. After sucking the blood, the leech was detached from the spot after 10-15 minutes. If the leech did not detach itself, a small amount of turmeric or a drop of betadine was applied to the bite area and the leech was removed. To prevent further bleeding from the site of the bite, a piece of gauze was placed over the affected part. This process was carried out in five sessions with no difficulties.

## Therapy Timeline

The treatment of the patient was started on 20<sup>th</sup> June 2021. The diet modification and *Panchakarma* treatment were done for next 7 months.

**Table 2: Ayurvedic management plan administered to the patient**

Oral medication	Appetizer, digestant, detoxifiers, skin purifier, blood purifier, anti-obesity, herbal nootropic drug, ghee, and antiparasitic drugs.
Diet	Low calorie, high protein, anti-diabetic diet, an anti-inflammatory diet with antioxidant fruits and vegetables.
<i>Panchakarma</i>	1. Centripetal oleation, thermal vasodilation, per rectal drug administration. 2. Decoction steam on forehead 3. Purging

**RESULT****Clinical Findings Post study Therapy**

There was a significant recovery in the patient. The changes were observed in weight loss, BMI, abdominal girth, and random blood sugar and BP. When the patient was reviewed on 28<sup>th</sup> January 2022, she had a recurrence of severe cellulitis along with psoriasis. Then she was advised to leech therapy. The treatment was continued for 7 months with regular follow-ups.

**Follow-up and Outcome**

The patient was extremely troubled and frustrated with psoriasis and cellulitis for 14-15 years. She has tried many allopathic and homeopathic treatments and has been hospitalized many times, but got no relief. All these affected her physical and mental health. Due to steroids, her weight was also increasing and she started suffering from acidity, headaches, constipation, insomnia, and depression. Then she started her Ayurvedic treatment at Madhavbaug. Based on the diagnosis, an Ayurvedic management plan with leech application was administered to the patient. The treatment was carried out without any steroids and without hospitalization with no complications. Her psoriasis and cellulitis were reduced to a large extent. She got relief from the majority for her health concerns. Results were compared through photograph assessment taken before the treatment and after 7 months of treatment.

**Table 3: Changes in Body Parameters at Baseline and at the end of the Treatment**

Parameters	Before treatment (20/06/2021)	After treatment (22/04/2022)
Appetite	Anorexia	Improved
Sleep	Disturbed/Insomnia	Improved
Defecation	Constipation	Improved
Pedal edema	3+ Pitting	Edema subsided
HbA1C	7.2%	5.2% (15/8/21)/reduced by 2%
Weight	114.1 kg	108 kg/reduced by 6 kg
BMI	48.9	46 / reduced by 2
Abdominal girth	133	122 / reduced by 11cm
Allopathic medication	4	0
Blood pressure	150/100 mm of Hg	130/80 mm of Hg
Itching at night	Present	Reduced
Hyper-acidity	Present	Reduced
Leucorrhoea	Present	Reduced
Headache	Present	Reduced
Burning micturition	Present	Reduced
Dryness of skin	Present	Reduced
Ankle joint pain with restricted movement	Present	Pain subsides, normal movements of joint

**Table 4: Clinical Features Baseline and at the end of Leech therapy treatment**

Symptoms	Before treatment (28/01/2022)	After treatment (22/04/2022)
Redness	+	Reduced
Red Streaks	+	Subsided
Swelling	+	Subsided
Warmth	+	Subsided
Pain	+	Subsided
Tenderness	+	Reduced
Leaking of yellow/pus fluid	Oozing	No oozing

+: Present



**Before the treatment**



**During the treatment**



**After the treatment**

## DISCUSSION

The study was conducted at Madhavbuag clinic, Aundh, Pune, for a period of 10 months from 20<sup>th</sup> June 2021 to 22<sup>nd</sup> April 2022 on an OPD basis. Diet restrictions were imposed on the patient. Leech application was administered to the patient for a period of 3 months in 5 sittings. In this case, leech therapy showed excellent results in producing symptomatic relief to the patient without recurrence of the complications. The patients were treated without any allopathic medicine. And the treatment was been carried out without hospitalization. This patient was diabetic and obese along with it, she has developed a condition of cellulitis for which the only treatment was supposed to be was allopathic medicines and steroids. As published in known literature steroids and allopathic medicines have various side effects which include an increase in sugar levels and weight gain. This therapy has helped the patient in reducing the condition of psoriasis and cellulitis without increasing sugar levels and weight gain. Additionally, appetite, sleep, defecation, pedal edema, and HbA1C were reduced. And other parameters like weight, BMI, abdominal girth, blood pressure, itching, acidity, headache, leucorrhoea, skin dryness, and pain in ankle joints were also reduced. Allopathic medicines were also reduced to a greater extent. All the other parameters like intra ventricular septum left ventricular ejection fraction, left ventricular end-systolic volume, pulmonary arterial hypertension, diastolic dysfunction, Hb, Doppler of both limbs, serum creatinine, iron, and uric acid remained within the normal range in the patient after the treatment.

A recent case report by Mohammed Sheeraz et al. studied<sup>[11]</sup> the safety and efficacy of leech therapy in a case of psoriasis on scientific parameters. The visual analog score and the psoriasis area and severity index were used as the primary end measures. The study proved that leech therapy offers a powerful anti-psoriatic impact without causing any toxicity or side effects.

The blood purifying, analgesic, anti-inflammatory, disinfectant, and wound healing qualities of leech therapy make it beneficial and more effective. Leech therapy improves blood circulation and reduces congestion due to the presence of carboxy-peptidase, ACE inhibitor, and histamine-like substances. The saliva of leeches contains a peripheral vasodilator, which improves blood circulation.

## CONCLUSION

Therefore, it can be concluded that Leech therapy has a considerable anti-psoriatic and anti-cellulite impact without causing any toxicity or side effects. Comprehensive and large sample size investigations are required to detect relapse of the disease over a relatively extended period.

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