



Case study

Management of allergic contact dermatitis with Ayurvedic intervention

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ABSTRACT

Contact dermatitis is an inflammatory process in the skin caused by an exogenous agent or an agent that directly or indirectly injures the skin. Agents that cause allergic contact dermatitis (ACD) induce an antigen, a specific immune response. Available treatment protocols in modern are identification and avoidance of causative allergens, topical or systemic corticosteroids which will lead complications in future. It was critically reviewed in the context of *Vicharchika* (eczema). In this case report, a female patient suffered from ACD for 1 year. First, she took allopathic medicine but was not benefited. Then she was treated with Ayurvedic formulations, *Panchnimbadi churna*, *Panchatikta ghrī*, *sudh gandak*, *swarna gerik*, *amrita satva*, *haritaki churna* and *purodil ointment* for 15 days. After 2 months of treatment, the improvement was noticed in symptoms like severe itching, redness and burning sensation in the skin. The line of treatment followed in this case was to treat provoked *pitta dosha*, *vitiated Twaka*, *mamasa*, *vasa*, and *ambu dhatu*. There were no adverse effects found during the Ayurvedic medication.

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INTRODUCTION

Dermatitis is an inflammation of the skin caused by factors, such as allergens, irritants, UV light, foods, medications, hereditary, etc. Contact dermatitis is an inflammatory process in the skin caused by an exogenous agent or an agent that directly or indirectly injures the skin (Khanna, 2002). Contact dermatitis occurs when the skin comes in contact with a substance that causes a delayed allergic reaction. It is divided into two main types, allergic contact dermatitis (ACD) and irritant contact dermatitis (ICD). ACD accounts for 20% of all contact dermatitis reactions. ACD is a type 4 (delayed or cell-mediated immune reaction) that is elicited when the skin comes in contact with a chemical to which an individual has been previously sensitised (Longo et al., 2011). It requires prior sensitisation to the chemicals. Subsequent re-exposure of individual leads to allergen being presented to a primed T-cell leading to release of numerous cytokines and chemotactic factors. Once sensitized a low concentration of causative chemical elicits a response.

If contact dermatitis is suspected and an offending agent is identified and removed, the

eruption will resolve. Usually, the treatment of ACD is tropical but, if necessary, systemic corticosteroids are also effective. In Ayurveda, there is no clear description of dermatitis, but if we look into the text deeply, the clinical features of *Vicharchika* (*chudrarog*) can be correlated with dermatitis. There are a total of 18 types of *kusthrog* have been described by *Archaryas*. *Kusthrog* is *tridoshaj Pradhan vyadhi* and the main *dhusyas* are *twak*, *rakta*, *mamsa*, *ambu* (Acharya, 2009). It is included among the disorders of *rakta* and also known as *Mahagadh*. As *pitta dosha* is predominately vitiated, so, in Ayurvedic treatment, *tikta kashaya dravyas* are used to cure skin diseases. Hence, with this background, the trial drugs were selected for the present case.

AETIOLOGY

Common allergens are plants (parthenium), jewellery made from nickel or gold, latex gloves, perfumes or chemical in cosmetics and skin care products. An agent that caused ACD is induced an antigen, a specific immune response. Clinical lesions of contact dermatitis may be acute (wet and oedematous) or chronic (dry, thickened and scaly) (Khanna, 2002).

PATHOGENESIS

ACD develops due to the involvement of the immunological pathway. It does not develop on the first exposure. ACD is a type 4 (delayed hypersensitivity) reaction to exogenous contact antigens. Antigen, presented to the skin, is processed by antigen presenting cells (Langerhans cells). The processed antigen then interacts with the sensitised lymphocytes which are stimulated to multiply and to secrete cytokines. Cytokines then cause skin injury.

The sensitivity is specific to a chemical but the patient may develop cross-sensitivity to closely related chemicals. Repeated contact increases the chance of developing hypersensitivity, though ACD may begin after the first contact.

CASE STUDY

Patient description

A female patient, aged 18 years, unmarried, lives in Haridwar, was registered in OPD (No. 2030/47286) of the Department of Rog Nidan Evam Vikriti Vigyan, Rishikul Campus, Haridwar on 26/11/2018 with the complaints of itching and redness on the face and neck for 1 year, burning sensation on the face and neck for 1 year, irregular bowel habits for 2 months and decreased appetite for 15 days.

History of present illness

According to the patient, she was asymptomatic about a year ago. Since then, she has been suffering from intense itching with a burning sensation and also redness on the face and neck. She had also a complaint of irregular bowel habits and decreased appetite. She took 1 month of Allopathic treatment but she did not get any relief. Then she came to Ayurvedic hospital for better management.

Past history of the patient

She did not have any previous medical or surgical illness. Her family history revealed that there was no such complaint ever. On the general examination pulse rate was recorded to 80/min, BP 130/80 mmHg, and temperature 98.6 F. On the systemic examination, no abnormality was detected in the gastrointestinal, respiratory, cardiovascular and nervous system. *Prakriti* of the patient was diagnosed as *Kaphavataj* while *nadi* was *pittakaphaj*. There was no complaint with regard to *mutra* (urine) but *mala* (stool) was irregular, hard in consistency and *jihwa* (tongue) was slightly coated.

Differential diagnosis

The diagnosis was confirmed on the basis of symptoms, physical examination and the history given by the patient.

Study design

On the basis of symptoms, the treatment was carried out initially, a combination of *Panchnimbadi churna*, *sudh gandak* and *amrita satva*, *Mahamanjithadi kwath* was given. As she was suffering from severe constipation, *Haritaki churna* was advised at night. *Panchtikta ghrut* was given as a *Sanshamana chikitsa* and Purodil ointment for local application for 15 days. Allopathic medicines used by the patient were stopped when Ayurvedic treatment was started. The treatment was single blinded and the assessment of the patient was done at the interval of 15 days. The subjective assessment was done on the basis of the scoring pattern. During treatment, she was advised to take easily digestible food, green leafy vegetables, fruits, low fat diet and to avoid fried, junk, heavy, spicy foods and non-veg. She was encouraged to practice regular yoga, walking and other physical activities. The medication with the procedure applied in the present case is given in Table 1.

Table 1. Medication and procedure applied in the present case

S.No.	Medication	Dose	Time	Duration
1.	<i>Panchnimbadi churna</i> <i>Sudh gandak</i> <i>Amrita satva</i> <i>Swarna gerik</i>	3 g 250 mg 500 mg 250 mg	Twice a day after meal	15 days
2.	<i>Haritaki Churna</i>	3 g	At night before sleeping	7 days
3.	<i>Mahamanjithadi Kwath</i>	20 mL	Twice a day after meal	15 days
4.	<i>Panchatikta ghrut</i>	10 g	Twice a day	15 days
5.	Purodil ointment	NA	Thrice a day	15 days

Subjective assessment criteria

The subjective assessment criteria were dry, scaly, flaky skin, burning sensation, skin redness, oozing blisters, severe itching, sunlight sensitivity and swelling especially on eyes and face.

RESULTS

The progress report of the patient is given in Table 2 in the form of scoring. After treatment, the patient got significant relief in the symptoms. The follow up was made on the 15th day after

completion of oral medication. During this period, the symptoms, i.e. itching, redness, burning skin and irregular bowel habit have been improved. After further continuation of medicines, no flaky

and dry skin was observed and swelling was remarkably subsided. The progress in the symptoms of the patient in three follow-up visits was recorded.

Table 2. Observation before and after treatment

S.No.	Symptoms	Before treatment	After treatment		
		0 day	16 th day (1 st follow-up)	30 th day (2 nd follow-up)	60 th day (3 rd follow-up)
1.	Redness	3	3	2	1
2.	Itching	3	2	2	1
3.	Thickness/oedema	2	2	1	1
4.	Dryness	2	1	1	0
5.	Lichenification	2	2	1	0
6.	Burning sensation	3	2	1	0

DISCUSSION

The reference of *Panchatikta ghrīt*, a drug selected for trial, is taken from *Bhaishjya Ratnavali Kushth Rogadhikara*. The main contents of this drug are *Panchatikta gana dravyas* and *ghrit*. So, probable mode of action of *Panchatikta ghrīt* can be made on the basis that all the contents are of *tikta rasa*, *laghu* and *ruksh guna*, so, it acts as an anti-itching. It mainly acts on wastes (*kleda*), fat (*meda*), *lasika*, *rakta*, *pitta*, *sweda* and *shleshma* and also acts as *kled* and *vikrut meda upashoshak* and *vranashodhak*. *Nimb*, having main constituents *nimbin* and *nimbidin*, possesses significant anti-inflammatory and anti-ulcer effects (Lokhande et al., 2016).

Guduchi, having *berberin* and *tinospurin*, mainly acts as anti-oxidant and immune modulating. *Ghrīt* has lipophilic action so helps in ion transportation to a target organ. This lipophilic nature of *ghrit* facilitates entry of the drug into the cell and its delivery to mitochondria, microsomes and nuclear membrane. Also, it helps in restoring the normal texture to the skin. So, all these properties act mainly at the cellular level of skin decreasing keratinization of cell layer thus improving cell cycle as result symptoms like itching, deranged complexion, white or red patches are reduced giving normal texture to the skin. *Ghrīt* by its *sheeta* and *snigdha* properties acts as *Pitta shamak* and also induces *virechana* which is the best *shodhan* treatment for vitiated *Pitta*. So, it helps improving skin diseases because *Pitta* is the main causative factor for skin diseases and vitiation of *rakta*. *Panchnimbadi churna* contains *Nimb* and other herbal ingredients. It detoxifies the blood and helps in curing skin diseases. It has *Rakta prashadhak* and *Pitta prasamaka* action.

Guduchi has anti-inflammatory, antioxidant, immunomodulatory and several other medicinal properties. This *churna* contain *tikta kashaya dravyas* which is helpful in shaman of vitiated *pitta* (Rao, 2014).

Haritaki churna is a tonic drug and good for the digestive system. It balances *vata*, *pitta* and *kapha*.

It also has an anti-bacterial, anti-oxidant and immunomodulation properties. The properties like *deepana* and *panchana* act on *jataragnin* by improving the *agni*, cure the *ama* and act as a *shrotoshodak*. As it also acts as a laxative, it helps in *rechan* of *pitta* and ultimately helps in curing the vitiated *pitta*.

Inflammatory skin disorders require additional nutritional support. Therefore, it is important to ensure the essential nutrients in food to support normal skin. Some foods provoke allergic dermatitis, elimination of that diet can heal ACD. The use of dietary fatty acids, antioxidants and hydrolysed proteins can be beneficial in managing inflammatory skin problems (Mowad et al., 2016). Approximately 30-50% of individuals who are allergic to natural rubber latex show a related hypersensitivity to some plant-derived foods, especially freshly consumed fruits. Certain foods are usually high in nickel content, such as cocoa and chocolate, soya beans, nuts and almonds. Avoidance of these foodstuffs may alleviate contact dermatitis (Basavaraj et al., 2010).

CONCLUSION

The present case study concludes that the holistic approach of the Ayurvedic system of medicines gives relief to the patient of allergic contact dermatitis. There was no adverse effect found during the Ayurvedic medication. On the basis of this single case study, it can be concluded that *Panchnimbadi churna* along with *Panchatikta ghrīt* treatment is effective in the management of ACD. From this study, it is stated that Ayurveda can be a promising alternative in early ACD. Further clinical trials are needed to establish standard management of dermatitis.

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CONFLICTS OF INTEREST

The authors declare no conflicts of interest.

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