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AIR BORNE CONTACT DERMATITIS (ABCD): A CASE STUDY IN AYURVEDIC SETTINGS

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ABSTRACT

Airborne contact dermatitis (ABCD) is a morphological diagnosis that encompasses all acute or chronic dermatoses predominantly of exposed parts of body, which are caused by substances which when released into the air, settle on the exposed skin. We are here with reporting a case of air born contact dermatitis in a 43 year old housewife patient. The possible understanding of the case in terms of Ayurveda and a therapeutic protocol with promising result has been discussed.

KEYWORDS: Air Borne Contact Dermatitis, ABCD, Contact Dermatitis, *Kushtha, Panchtikta ghrit.*

Key–message: In this case study, an effort was made to treat a patient of airborne contact dermatitis by implementing Ayurvedic principle on the basis of involvement of vitiated *dosha* and *dushya.*

INTRODUCTION

Airborne-contact dermatitis (ABCD) denotes a unique type of contact dermatitis originating from dust, sprays, pollens or volatile chemicals by airborne fumes or particles without directly handling this allergen.[1] This form of dermatitis commonly involves face, neck, v-area of chest and eyelids. Exposed as well as non exposed skin can be affected. This form of dermatitis can sometimes also be generalized.[2,3] Over the years, there has been an increasing recognition on the part of dermatologists regarding the occupational as well as the non-

occupational airborne allergens and irritants. Epidemiologically, ABCD can be classified into occupational and non-occupational ABCD. It is generally believed that occupational airborne irritant contact dermatitis is grossly underreported and is much more common compared to airborne allergic contact dermatitis. Although ABCD has been reported to be caused by a number of agents, in Indian patients has been attributed exclusively by pollens of the plants like *Parthenium hysterophorus,* etc., but in recent years the above scenario has been changing rapidly in urban and semi urban perspective especially in developing countries. Airborne dermatoses often cause diagnostic problems and create a puzzle not only to the patient but also to the doctor.[4] The incidence of airborne dermatoses has increased considerably in recent years.[5] ABCD[6] may be caused by: a) cement and wood dust, causing irritant as well as sensitization reactions b) fibrous materials like grain dust, glass fiber and rock wool causing mechanical dermatitis c) aerosols of mineral oils inducing irritant reaction d) pollens or dust containing particles from plants such as *Parthenium hysterophorus*, ragweed or certain types of woods or medicaments by the process of delayed hypersensitivity. Fragrance allergy leading to ABCD has been reported by many authors[7] In the recent years increased self-image and beauty consciousness due to media and film influence has contributed to the increased use of perfume, deodorants, and room fresheners among urban and semi urban people.[8] ABCD appears on areas of the skin where the dust or fibers can be trapped, e.g., on the eyelids, neck (under a shirt collar), forearms (under cuffs) or lower legs (inside trouser legs).[9] Contact dermatitis from prolonged, repeated exposure to relatively small quantities of airborne allergens, such as pollens, dusts and vapours, produces diffuse, dry and lichenified eruptions with vesiculations. The exposed portions of the body as well as wrinkles and folds are most markedly involved.[10] In the classical airborne allergic contact dermatitis, there is involvement of exposed areas of face, "V" of neck, hands and forearms, "Wilkinson's triangle," both eyelids, nasolabial folds and under the chin. The involvement of both light-exposed and protected areas helps to differentiate ABCD from a photo-related dermatitis.

Case report: A 43 yr old female patient, residing in Jaipur visited Kayachikitsa OPD of Arogyashala NIA, Jaipur presented with chief complaints of reddish rashes and hyperpigmented skin over V of neck (anterior and lateral part of neck), flexors of arms(bilaterally) and under the chin associated with intense itching since 2.5yrs. Patient also complained of oozing from lesion associated with burning sensation occassionaly. All above mentioned were progressive in nature. There was no history of any contacts like necklace wearing. No history of D.M., Hypertension, There was no any specific relation with sun

exposure. She consulted many dermatologists and speciality clinics but did not get permanent relief.

On general examination: Vitals were within normal limit (B.P. 114/80 mm of Hg, P.R. 74/min Regular, R.R. -18/min, Temp. 98.4^{0}F), Pallor- mild, Icterus-absent, Cyanosis- absent, clubbing, lymph node not enlarged, oedema – absent.

Dermatological examination: On anterior and lateral & V of neck, skin was rough, moderate erythematous, lickenified papules, mild exudates and scaling was present. On flexors of upper limb, skin was rough, lichenified, and scaly lesions were present but there was no exudates and erythematous skin. In other systematic examination no abnormality was detected.

Haematological reports: Reveals that Hb% -10.3 gm%, ESR-28 mm/hr, TLC, DLC and other haematological parameters were normal, renal parameters and blood sugar also within normal limits. **Allergy screening test** (by Immune – EIA) was done and it was found that IgE level was 430KU/L (Normal IgE Level – for >10 yrs is 20-100KU/L) and Allergy to contact (house dust mite, Perfume, Powder), food (Lady Finger, Dal Chana, Tomatoes, Banana, Coconut, Mustard), inhalant (house dust) was found in allergy screening test. So on the basis of morphology and investigation she was diagnosed as air borne contact dermatitis.

The patient was administered certain combination of the drugs as per table no 1 and changed accordingly of disease. Medicines were given continuously for 2 month.

Treatment and progression of the disease

1) Suddha Gandhak - 500 mg
   Mukta Shukti Bhasma-250 mg
   Laghu Sutsekhar Rasa- 250 mg
   Pittantak Yoga –2 gm
   Vyadhiharan Rasayan - 250 mg
   } 1x2 dose with luke warm water
2) Panchtikta Ghrita – 10ml twice in a day
3) Urtitab -2 tab twice in a day
4) Khadirarishta - 20 ml two times in a day with equal amount of water, after meal
5) Nimba Taila +Tuvaraka Taila for local application

Table 1: Showing the plan of treatment and improvement of symptoms.

Days	**B.t.**	**15th day**	**30th day**	**45th day**	**60th day**
Treatment	All the above treatment as it is	Previous treatment (stop khadirarishta) + Add kandughna mahakashya 100ml b.d.	Previous treatment+ Manjishthadi kwath	Previous treatment (stop nimba +tuvarak oil) add bactimo oil for l.a.	Bactimo oil for local application
Symptoms					
Erythema	++	++	+	-	-
Itching	++++	++++	++	-	-
Roughness	++++	+++	++	+	+
Likenification & hyperpigmentation of skin	++++	+++	++	+	+
Scaling	++	++	++	+	-
Exudates	+	+	+	-	-

DISCUSSION

Skin diseases come under *kushtha roga*. *Kushtha roga* is a *Tridoshaj vyadhi.* It also has been considered as a *Rakta Prodoshaj Vyadhi*. In ABCD there is the symptom of *vata dosha* ie. *Rukshta* (Roughness), *Parushya, Khara,* and *Shyam Varna* (Hyperpigmented, likenified skin), *pitta dosha lakshana* ie. *Lalima* (Redness), *Daha* (Burning sensation) & *Kleda*(Secretion), and *kapha dosh* symptom ie: *kandu*(Itching). Here some of the preparation selected on the basis of dosha & dushya of the disease.

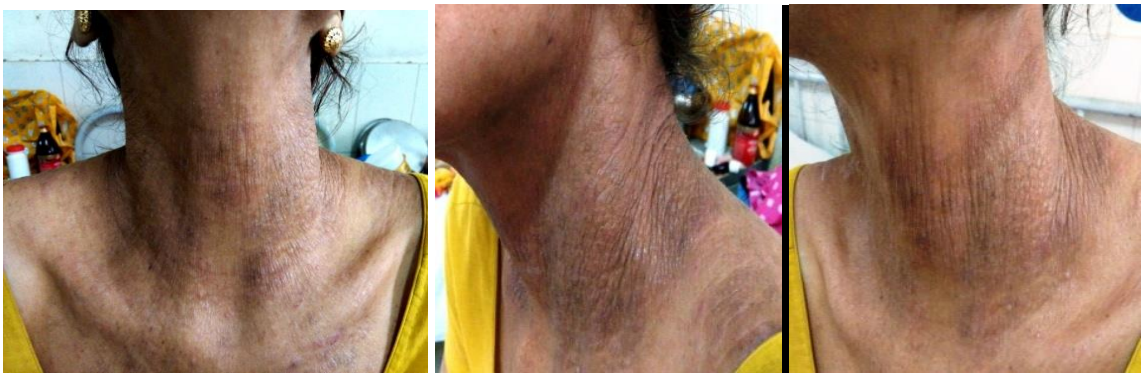
Our treatment plan was as following principles

1) Which is *Tridoshamaak*. (In order of predominant *dosha*).
2) Which purifies *Rasa rakta dhatus*.
3) Helps in boosting immune system as autoimmunity plays an important role in its pathogenesis.

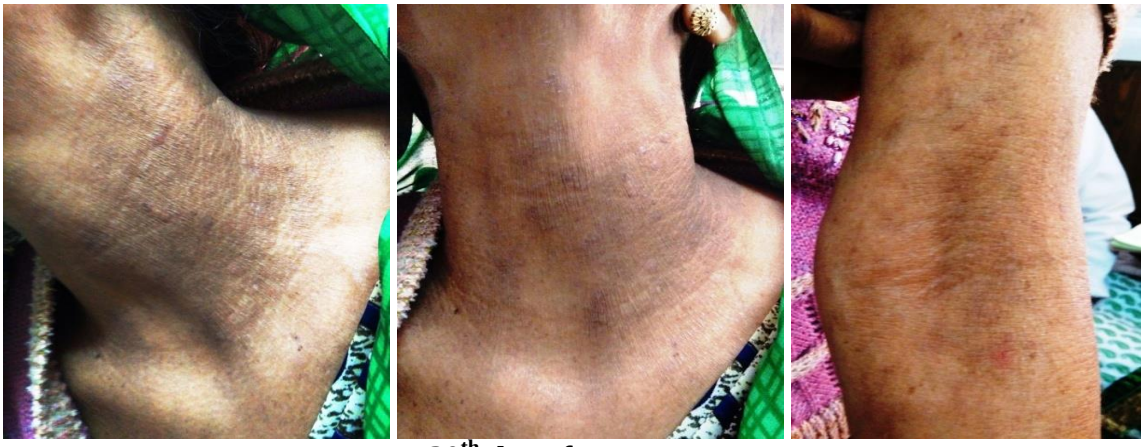
Suddha gandhak is an excellent antiseptic. It is effective in treating various skin diseases. It has *kaphvata har* property and indicated in *kandu* and *kushtha*. *Laghusutsekhar* and *Pittantak Yoga* have been added due to excellent pitta pacifying property. *Vyadhiharan Ras:* it contains *Shuddha Parad, Gandhak, Somal, Hartaal, Manahshila,& Ras Karpur* (Rasendra Saar Sangraha**)** and best in *vata kapha shaman* therapy. *Panchtikta Ghrita* constituents *Nimba, Patola, Kantakari, Guduchi,* and *Vasa* are *tikta rasa pradhan dravyas.*[11] *Tikta rasa* is

Vishaghna (Anti allergic action), *kandhughna* (Pacifies itching), *kushthaghna* (Removes skin disorders) and purifies *twacha* (Skin) and *Rakta*(Blood).[12] Studies have proven anti inflammatory activity of *Panchatikta ghrita.*[13] Thud it will also chek inflammatory reaction on skin due to vitiated *dosha* and *dhatus*. It also helps in digestion and enhancing liver function so used in various skin disorders. Urtitab mainly contains *kaishore guggulu, praval pishti, mahamanjishthadi ghan, shvet chandana, chopchini* & *tamra bhasma*. *Chopchini, sveta chandan,bakuchi* in urtitab work as immune-modulator, antipruritic with antihistaminic action. It improves the defence mechanism of body against allergens. Urtitab protects the body from internal toxins by improving liver function. Also exhibits anti-inflammatory & anti exudative property. *Nimba taila*: Neem tree has numerous medicinal properties by virtue of its chemical compounds. Seeds of the neem tree contain the highest concentration of Azadirachtin. Apart from Azadirachtin, salannin, gedunin, azadirone, nimbin, nimbidine, nimbicidine, nimbinol, etc are important liminoids of neem. The neem is proved to be beneficial in treating skin diseases because of its antibiotic, antifungal and blood purifying properties. Neem pacifies vitiated kapha and pitta, thus helps to cure skin ailments**.** *Kandughna Mahakashaya* contains *Chandan, Kamal Panchanga, Amaltaas, Nimba Chhala, Kutaj, Daruhaldi, Musta, Yasthimadhu*, Sarsapa, *latakarang.*[14] All these drugs are anti pruritic. They pacify *kapha* and are beneficial for skin diseases. *Manjistha* is the main ingredient of *manjisthadi kwath*. *Manjistha* is also mentioned in ten *varnya*[15] drugs and as *Visaghna*[16] *Jvarahara*. It has properties of blood purifying agent and pigment stimulant, tonic and is used in skin and blood diseases.[17] Ayurvedic pharmacopoeia of India therapeutically indicate it for *Yoni roga* (menstrual disorder), *Kustha* (skin disease), *Sarpavisa* (snake bite), *Visarpa* (herpes virus), *Aksi roga* (eye disease), *Arsa* (haemorrhoids), *Bhagna* (Fracture).[18]

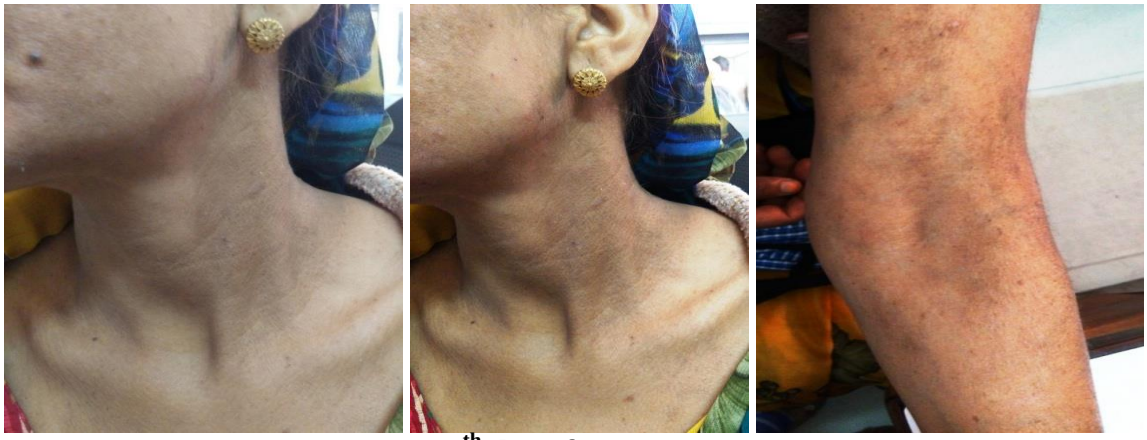
Figure showing improvement of disease



Before treatment



30th day of treatment



60th day of treatment

CONCLUSION

Thus, we can conclude that ABCD is a condition for which modern medicine has no permanent treatment except for prevention; the holistic approach of *Ayurvedic* system of medicine provided highly significant relief to the patient. After complication of treatment (After 2 months) LFT and RFT investigation was done to rule out any adverse effect of drugs. LFT and RFT both with normal limit, so no adverse effects were found. Hence Ayurvedic drugs are safe and effective in skin diseases.

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