

## A CASE OF PARTHENIUM DERMATITIS IN A MIDDLE AGED FEMALE

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### ABSTRACT

Parthenium dermatitis is an immuno-inflammatory disease caused by Parthenium hysterophorus and is the most common cause of plant dermatitis in India. Contact sensitivity to parthenium is everlasting, and hence the disease runs a chronic course with exacerbation during summers. Patch testing with acetone or aqueous plant extract is the simplest way of confirming parthenium contact allergy. We report a case of 40yr old female who presented with generalised erythematous and lichenified plaques and was managed effectively with topical corticosteroid and avoidance of allergens.

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### INTRODUCTION

Airborne contact dermatitis (ABCD) is a unique type of allergic contact dermatitis caused by pollen, dust, sprays and volatile chemicals or fumes.(1)Parthenium contact dermatitis is the most common cause of plant contact dermatitis.(2)It is caused by airborne dry and friable plant particles including trichomes, and the most important allergens responsible for allergic contact dermatitis are sesquiterpene lactones.(3)It presents with acute or chronic eczematous dermatitis of uncovered areas and flexures, or sometimes erythroderma. It is caused by combined type IV and type I hypersensitivity to parthenium, as recently postulated.(3)Parthenium dermatitis is a very distressing and intractable problem in India.(4)

### CASE REPORT

A 40 years old woman, farmer by occupation, presented with a 4 months history of generalized erythema, itching and thickened scaly plaques over face, neck, axillae and fingers and feet. The lesions were worse during summer. Itching was severe enough to disturb her sleep. Patient had a history of daily exposure to congress grass in nearby farm. There was no personal or family history of atopy. On examination, multiple, well defined erythematous and lichenified plaques with scaling and excoriations marks were present over creases of upper eyelid, retroauricular area, neck, axilla and fingers and feet(Fig.1,2,3). A clinical diagnosis of parthenium dermatitis was made.Patch test was strongly positive for parthenium (Fig 4). Patient was advised to avoid the contact with allergen by using protective clothing, barrier cream, and removal of congress grass from her

surrounding farms as much as possible. She was treated with clobetasol propionate 0.05% cream twice daily, tab levocetirizine 10 mg twice daily, coconut oil application. After 4 weeks of treatment, itching resolved completely and there was 60-70% clearance of the lesions.



**Fig 1: Erythema, edema and scaling over face, upper eyelid and neck**



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## DISCUSSION

ABCD in Indian patients has been attributed exclusively to pollens of plants of Parthenium, Xanthium, Chrysanthemum, Helianthus and Dahlia. Parthenium dermatitis is caused by Partheniumhysterophorus, also known as Congress grass.<sup>(1)</sup>Compositae dermatitis affects 0.7–1.4% of the general population and 4.5%of the occupationally exposed groups.<sup>(3)</sup>There is 3 % prevelance of allergic dermatitis to plant antigen among patients presenting with contact dermatitis.<sup>(5)</sup>The most common type of dermatitis was the classic ABCD pattern (46%) followed by the mixed pattern (30%), erythroderma (14%) and chronic actinic dermatitis (CAD) (10%).<sup>(5)</sup>It may present with acute or chronic eczematous dermatitis of uncovered areas of the body, with severe involvement of face and the flexures. Involvement of upper eyelid, lichenified lesion on neck, upper trunk and flexural aspects of limbs serve as a useful signs for diagnosis of ABCD. The actual extent of involvement varies from patient to patient depending upon the style and the shape of the clothes worn by the patient.<sup>(6)</sup>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).<sup>(1)</sup>The severity of dermatitis in a parthenium-sensitive patient depends on the degree of contact hypersensitivity in the patient at that time and the quantity of antigen in contact with the patient.<sup>(7)</sup>Phytophotodermatitis, seborrhic dermatitis, irritant contact dermatitis, pellagra, polymorphic light eruption and drug induced dermatitis are the common differential diagnosis. Management includes avoiding contact with allergen, managing dermatitis with topical corticosteroids/tacrolimus, and other immunosuppressives.<sup>(3)</sup>Azathioprine used in daily doses has been shown to be effective.<sup>(4)</sup>Prevention reduces the quantity of antigen to which the patient has been exposed. Preventive measures include removal of causative plant as much as from the environment, cover as much as skin by clothing, use barrier cream, avoid exposure to sunlight, take bath after coming from outside and wear fresh clothes, wash before antigen penetrates the skin. A significant proportion of patients still tend to have active symptoms many years after diagnosis.<sup>(5)</sup>However, it should be emphasized to all that avoidance of further exposure can lead to recovery from dermatitis in many cases.<sup>(5)</sup>The rapid growth of parthenium weed in India and its ill effects on the population makes it important to detect all cases of parthenium dermatitis.<sup>(8)</sup>Patch testing is a definitive tool for diagnosing ABCD.<sup>(9)</sup>It has been used as a reliable method to measure the degree of contact hypersensitivity to Parthenium in patients with ABCD to Parthenium (10).

We report this case to emphasize the importance of early recognition of clinical manifestations of parthenium dermatitis so as to avoid its misdiagnosis. Being a chronic disease, it hampers the patient's quality of life and adequate treatment depends on a timely diagnosis.

### CONCLUSION

Parthenium dermatitis is a distressing condition which is quite common in India and their percentage is increasing day by day. It is the most common cause of ABCD in India which primarily affects farmers and other outdoor workers and more severe during summer season. Patch test is gold standard for

diagnosis. Early recognition, timely management and prevention are the mainstay of the treatment.

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