

A Case Report on *Semecarpus anacardium* Induced Extensive Irritant Contact Dermatitis

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ABSTRACT

Semecarpus anacardium is otherwise known as marking nut which has unsung medical properties. It has been claimed as half physician in Ayurveda. The folklore claims states that *Semecarpus anacardium* possess medicinal properties like anti carcinogenic, anti-inflammatory, antioxidant, hypoglycemic, antimicrobial and contraceptive properties. In contrary to its biological potentials it has an adverse reaction like contact dermatitis. In this present study, a case of a couple which had got admitted in the hospital with the signs and symptoms of irritant contact dermatitis, after treating the fissure feet with the marking nut. Initially the case has

been extensively treated with azithromycin and levocetirizine and the patient's condition became worsen with the given medication. Due to the severity of the disease, the patients were been taken care under a tertiary care hospital in a dermatological sequences and they were been treated with antihistamines, antibiotics, for a period of 5 days. The patients were responded to the treatment and been recovered from the severe dermatitis and they have been discharged after the completion of treatment.

Key words: *Semecarpus anacardium*; contact dermatitis; adverse effect; ceftriaxone

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INTRODUCTION

Semecarpus anacardium is commonly known as marking nut which contains a pigment that has been used to mark fabrics.^[1] This plant consists of anti-inflammatory, antiarthritic, antioxidant, antimicrobial and also anticarcinogenic perspectives pertaining to liver, esophagus, and urinary bladder. The major adverse reaction of *Semecarpus anacardium* is contact dermatitis.^[2] Contact dermatitis refers to the skin inflammation that is occurring as a result of exposure of irritants or allergens. Irritant contact dermatitis (ICD) is a localized inflammatory reaction which occurs due to the contact of chemical/physical agent which causes cytotoxic skin damage which leads to skin barrier disruption, cellular changes and release of pro inflammatory mediators. On contrary, allergic contact dermatitis is a delayed type of hypersensitivity reaction mediated by T-cells. Irritant contact dermatitis is usually caused by frequent and repeated use of known irritating substances, such as soap water, cleansers, rubbing alcohol, rubbers, coolants, nickel, petrolatum, chemicals (phenols aldehydes, and methanol etc.), resins, acrylics, paper friction, and fiberglass etc.^[3] Most common clinical manifestations of ICD are inflammation of skin, itchiness, red skin, rash, swelling, painful skin lesions. In a study it was observed that females preponderance to contact dermatitis than males.^[4] In the present study, an observation has been made of a couple who were suffered with irritant contact dermatitis due to the utilization of marking nut for healing fissure foot. A 32 years old male and 30 years old female patients presented to have fissure feet and had been treated by utilizing the fruit extract of marking nut (*Semecarpus anacardium*). Within an hour of applying the fruit extract to the fissure feet the male patient observed a severe itching in the hip region of the right leg with erythematous vesicles and painful rashes [Figures 1-4]. In similar lines, his wife (30 years old) were also been affected. The patients were been treated initially with the dose of azithromycin 500 mg, and levocetirizine and hydroxy hydrochloride. After a few intervals of the treatment the disease has been noticed to become worsen. Later they got admitted in a tertiary care hospital with the complaints of multiple vesicles over the skin, maculopapular rashes over the forearm, inner thighs and entire

chest region. Further they were been presenting a compliant of blisters scaly itching, erythematous skin rashes, swelling and burning sensation over the thigh of both legs. Further it was observed that an edema has been formed over the face and feet. Initial measure is to withdraw the use of azithromycin, which is an inducing factor for dermatitis.^[5] Social history of patient shows that the male patient a chronic alcoholic for 6 years. Lab investigations were been performed associated with clinical investigations. It was found that blood pressure, pulse rate were normal and temperature was in febrile condition. Complete blood picture shows normal levels of haemoglobin-14.8 gm/dL, WBC levels were increased to 16500 cells/cumm which signifies the presence of inflammation. Liver function tests shows increased levels of total bilirubin to 2.5 mg/dL and direct bilirubin to 0.5 mg/dL for which he was diagnosed with hepatomegaly and he is undergoing treatment with ursodeoxycholic acid-300 mg OD. Tzank test was done to confirm whether the patient has been affected by herpes simplex infection and found to be negative. Patch test was done which shows the patient was irritant to marking nut. In similar lines, female patient was subjected to clinical and lab investigations. Based on the data obtained Patient has been treated with the following medications for 5 days Inj. Pheniramine maleate-2 cc IM, B.D, Dexamethasone-2 cc IM, B.D, Tab. Mahacef XL [cefexime-200 mg, dicloxacillin-500 mg, lactobacillus-90 million cells], Tab. Lyser-D [serratiopeptidase-10 mg, diclofenac-50 mg], Inj. Ceftriaxone-1 g BD, Calosoftlotion [calamine, aloe vera, light liquid paraffin], Pantoprazole- 40 mg, Fucidic-BNF cream [fusidic acid-2%

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Figure 1: Application of marking nut on fissure feet



Figure 3b: Ameliorate of ICD in 5 days of treatment



Figure 2: Application of marking nut on fissure feet



Figure 4: Marking nut induced ICD for his wife



Figure 3a: Amelioration of ICD in 3 days after treatment

w/w, beclomethasone-0.02% w/w], Mupirocin-2% ointment BD, Tab. Ursodeoxycholic acid-300 mg OD. Then the patient was recovered from the characteristic features of irritant contact dermatitis. Except ursodeoxycholic acid the same medication was given to his wife who as the same clinical manifestations of the patient [Table 1].

DISCUSSION

Despite of many significant uses of marking nut there are some adverse reactions like contact dermatitis were been reported. This is due to the presence of a chemical constituent urushiol.^[6] Complications of contact dermatitis include neurodermatitis, decreased quality of life, ooze fluids and crust. After treating with the prescribed medication for 5 days patient claims of attenuation of symptoms. Similar complaints were noticed by his wife and the same treatment was given to her of disease was noticed after 5 days and both of them got discharged. Urushiol is an oily organic compound with hypersensitive properties found in plants of the family anacardiaceae. Several cases have been reported with contact dermatitis when the patients were exposed

Table 1: Internal and External Treatment

S. No	Internal Treatment			External Treatment		
	Medicines	Dose	Duration	Medicines	Dose	Duration
1.	Inj. Pheneramine Maleate- IM	2 cc	5 days	Calosoft lotion		5 days
2.	Dexamethasone	2 cc	5 days	Fucidic – BNF cream		5 days
3.	Tab. Lyser-D		5 days	Mupirocin ointment	2%	5 days
4.	Inj. Ceftriaxone	1 gm	5 days			
5.	Tab. Pantoprazole	40 mg	5 days			
6.	Tab. Ursodeoxycholic acid	300 mg	5 days			
7.	Tab. Mahacef-XL		5 days			

to urushiol. Urushiol induced rashes are a type 4 hypersensitivity reaction which is also known as delayed type hypersensitivity which includes symptoms such as itching, inflammation, oozing and burning sensation. Urushiols are oxidized *in-vivo* generating a quinone form of the molecule. The adverse effect is indirect mediated by an induced immune response. They act as haptens changing the shape of integral membrane proteins on exposed skin cells. Allergic contact dermatitis is a severe condition that can be caused by the various phytoconstituents and their derivatives.^[7] Further, it was observed that severity after the administration of an antibiotic agent azithromycin which is idiopathic. Hence the people should be vigilant and acquire knowledge when they were subjected to the treatment of indigenous system of medicine.

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