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Irritant Contact Dermatitis with Secondary Infection Treated with Individualised Homoeopathic Medicine- A Case Report

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Abstract:

Skin is the largest organ exposed to the environment and encounters different external insults with its unique defence strategies. Contact Dermatitis (CD) is a common inflammatory, and the eczematous condition has two forms like Irritant and Allergic; among these, Irritant Contact Dermatitis is the commonest caused by physical chemicals, phototoxic agents, plants, etc., and is primarily seen in individuals exposed to rubber, plastic, metals, petrochemical, automotive, industrial workers. Approximately 80% of CD cases are due to ICD, commonly seen in females, infants, elders, and people with atopic tendencies. In acute presented as red, swollen, itchy, painful, and ulcerated, while chronic is erythema, dryness, cracking, oozing, and fissuring of the skin, sometimes secondary infection may supervene, often treated with an antiseptic solution, emollients creams, corticosteroids in conventional medicine. In this case report, a boy, after exposure to irritant chemicals developed, the ICD with secondary infection was treated successfully with *Calcarea sulphuricum* 30c and 200c potency, without using any topicals and absence of adverse events through Individualisation, the governing principle of Homoeopathy.

Keywords: Calcarea sulphuricum, Homoeopathy, Individualisation, Irritant contact dermatitis.

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Introduction:

The skin is a complex, largest organ and is in contact with the environment. Therefore, it protects the host from infections and other external insults by using defensive strategies like physical barriers, biomolecules, an intricate network of resident immune and non-immune cells and skin structure. Conversely, any impairment of its components can promote to development of inflammatory conditions. [1]

Contact dermatitis (CD) is a common inflammatory, an eczematous condition characterised by erythematous and pruritic skin lesions that occur after contact with a foreign substance. There are two forms like Irritant and Allergic.[2] Irritant contact dermatitis (ICD) is the cutaneous response to the physical/toxic effects of a wide range of environmental exposures. It may be acute (toxic) or a cumulative irritant /insult dermatitis. [3]

ICD is caused by the non-immune modulated irritation of the skin by physical (UV radiation, X-ray, other ionising radiation, Laser rays, heat and cold, mechanical factors), chemical (alkaline, acid solutions, organic solvents, croton oil, fragrances, nickel etc.), phototoxic agents, plants (poison ivy, Agave, Anemones), airborne irritants, etc.[4]The severity of the ICD depends upon the quantity and concentration of the irritant, duration and frequency of exposure, and further on the type of skin like thick, thin, oily, dry, very fair, previously damaged skin or having a pre-existing atopy tendency.[5]

The exact cellular mechanism is still to be elucidated, but increasing the evidence suggests that pathogenesis of this illness involves three main steps: irritation and disruption of the skin barrier, stimulation of the epidermal cells, and cytokine release leading to inflammation and skin changes. [6] However, ICD has various clinical manifestations ranging from mild skin dryness and erythema to severe pronounced oedema, coalescing vesicles, bullae, pustules, ulceration, and even skin necrosis. Lesions are usually sharp demarcated, and confined to the contact area, and most common symptoms include burning, stinging and soreness of the skin. The acute ICD is characterised by red, swollen, itchy, painful and ulcerated skin, while chronic is manifested as eczematous skin eruption, erythema, dryness, cracking, oozing, and fissuring of the skin. Sometimes a secondary infection may supervene. [2,7,8].

It is reported that approximately 80% of the cases of CD are due to ICD, commonly seen in females, infants, the elderly, and individuals with atopic tendencies who are more susceptible to this illness. In the United States, the prevalence of CD is approximately 1.4%; in India, it has 4.38%, much less than Western estimates of 15%-20%. Anyone can develop ICD, but individuals exposed to rubber, plastic, metal, petrochemical, and automotive industries are at greater risk of occupationally induced illness due to high rates of irritant exposure. [9,10,11]. The acute phase of contact dermatitis is treated with a mild antiseptic solution, emollient creams and low-strength corticosteroids. In the chronic form, more potent corticosteroids, moistening agents can be used locally. [8]

However, Homoeopathy emphasises the *principles*, which direct the practice of medicine. Individualisation is the governing principle in Homoeopathy; in drug proving, the study of the Materia Medica compiled from the proving, examination of a patient and study of a case, selection of the remedy and potency.[12] The physician has to “perceive” the disease that is to be cured, and that is through ‘totality of symptoms lead to ascertain the Individualised medicine.[13,14] With these principles and directions, we treated a case of irritant contact dermatitis with an Individualised Homoeopathic medicine successfully and absent of an adverse event during an intervention.

Case report:

A 12 years boy complained of skin- erosion on the lateral side of buttocks and thighs with yellowish crust, pain- burning, itching, and discharges for three months. They consulted Modern Medicine, and Ayurvedic and the results were vain. So, they visited the National Homoeopathy Research Institute in Mental Health, Under Central Council for Research in Homoeopathy, Ministry of AYUSH, India, on 02.04.2020 for further treatment.

On inquiry, the patient's mother explained the evolution of the complaints; she assumed that the boy utilized their relatives' western toilet cleaned with phenols and acids. Thus, he developed papular, pustular, and rupture eruptions after exposure to these chemicals, followed by bloody and sticky yellowish discharges and skin erosion on both sides of the buttocks three days after exposure. In addition, itching and burning pain worsen after scratching and after bathing.

Past History:

Chickenpox, at the age of 6 years, took Conventional treatment with uneventful recovery. No other sickness was noticed.

Family history:

Paternal Grandfather had Diabetes Mellitus and Hypertension; Paternal Grandmother had dyslipidemia. In addition, Maternal Grandfather had Osteoarthritis of the Knee joints, and Maternal Grandmother had Hypertension.

Clinical findings:

skin: erosions with yellowish crusty, ill-defined margins, irregular in shape, seropustular discharges, with warm to touch and symmetrically distributed on both sides of the buttocks and thigh region. Based on the above clinical findings, it is suggestive of Irritant contact dermatitis with secondary infection and confirmed by our Institute visiting dermatologist the same.

Mental Generals:

The mother was detailed to the patient that he had feared the night, most stubborn, jealousy between siblings.

Physical Generals:

He had a good appetite with an aversion to meat, desired sweets profoundly, constipated since the rise of complaints, perspiration all over the body on simple exertion and intolerance to heat.

Analysis of the case and Repertorisation:

After analyzing and evaluating the symptoms, we constructed the totality and repertorised it with RADAR OPUS 2.2.16- Licence:121347, synthesis Treasure Editions 2009v (English) software. The reportorial chart is shown in Fig.1.

Selection of the remedy and Potency:

After repertorisation, *Calcarean sulphuricum* was covered all the rubrics with a maximum score (17/10) and verify the Materia Medica [15] prescribed this remedy in 30c potency weekly once one dose based on patient susceptibility, age, duration, nature and seat of the disease.[12]. On 02.04.20, gave the first prescription and was advised to clean with normal saline b.i.d.

Follow up and outcome:

Follow up mentioned in **Table-1**. The clinical outcome has been assessed by the Children's Dermatology Life Quality Index (CDLQI) [16] self-explanatory questionnaire; initially, it was 22.

Table-1: Time line and Follow-up:

Date & Visit	Status of the complaints	Prescription
First visit **Figure:2**	Eruptions- pustular with crusty discharges on both sides of buttocks. Pain- burning along with itching. Constipation.	1. *Calcarea sulphuricum* 30/ 4 doses- weekly once morning. 2. Placebo-one month.
Second visit **Figure: 3**	Eruptions- crusty discharges decreased. But still pain and itching present. Constipation better.	1. *Calcarean sulphuricum* 30 /2 doses- 15 days once- morning. 2. Placebo- one month
Third visit **Figure:4**	Eruptions- crusty discharges decreased ultimately, still itching, suffering him a lot with sleeplessness. Constipation better.	1. *Calcarea sulphuricum* 200 / 4 doses- 15 days once- morning. 2. Placebo two months. 3. On Mother's request, gave two months of medicine.
Fourth visit **Figure :5**	Eruptions, discharges, pain- burning decreased. Sleep also improved—very occasionally complaining of itching on buttocks region.	1. *Calcarea sulphuricum* 200 / 2 doses- monthly once. 2. Placebo-two months.
Fifth visit **Figure:6**	Eruptions, crust, discharges, pain, all complaints are relieved. He complained of Cough with irritation and pain in the throat after taking cold water for three days. O/E- congestion in the oropharynx.	1. *Hepar Sulphur* 200 / 3doses/ daily O.D. for three days. 2. Placebo-one month. 3. Advised gurgling with salt and lukewarm water.
Sixth Visit **Figure:7**	Still, the patient came for his complaints without recurrence, and no other adverse events were observed.	1. Placebo-one month.

Table-2: Monarch Inventory (improved version of the Modified Naranjo Criteria for Homoeopathy):

Domains		**Yes**	**No**	**Not sure or N/A**	**Score**
1.	Was there an improvement in the main symptoms or condition for which the homoeopathic medicine was prescribed?	+2	-1	0	**+2**
2.	Did the clinical improvement occur within a plausible timeframe relative to the drug intake?	+1	-2	0	**+1**
3.	Was there a homoeopathic aggravation of symptoms?	+1	0	0	**0**
4.	Did the effect encompass more than the main symptom or condition (i.e., were other symptoms, not related to the main presenting complaint, improved or changed)?	+1	0	0	**+1**
5.	Did overall well-being improve? (suggest using a validated scale or mention about changes in physical, emotional, and behavioural elements)	+1	0	0	**+1**
6 A	Direction of cure: Did some symptoms improve in the opposite order of the development of symptoms of the disease?	+1	0	0	**0**
6 B	Direction of cure: Did at least one of the following aspects apply to the order of improvement in symptoms From organs of more importance to those of less importance? From deeper to more superficial aspects of the individual? From the top downward?	+1	0	0	**0**
6.	Did 'old symptoms' (defined as nonseasonal and noncyclical symptoms that were previously thought to have resolved) reappear temporarily during the course of improvement?	+1	0	0	**0**
7.	Are there alternative causes (i.e. other than the medicine) that – with a high probability –could have produced the improvement? (consider known course of disease, other forms of treatment, and other clinically relevant interventions)	-3	+1	0	**+1**
8.	Was the health improvement confirmed by any objective evidence? (e.g., investigations, clinical examination, etc.)	+2	0	0	**+2**
9.	Did repeat dosing, if conducted, create similar clinical improvement?	+1	0	0	**+1**
Total					**+9**

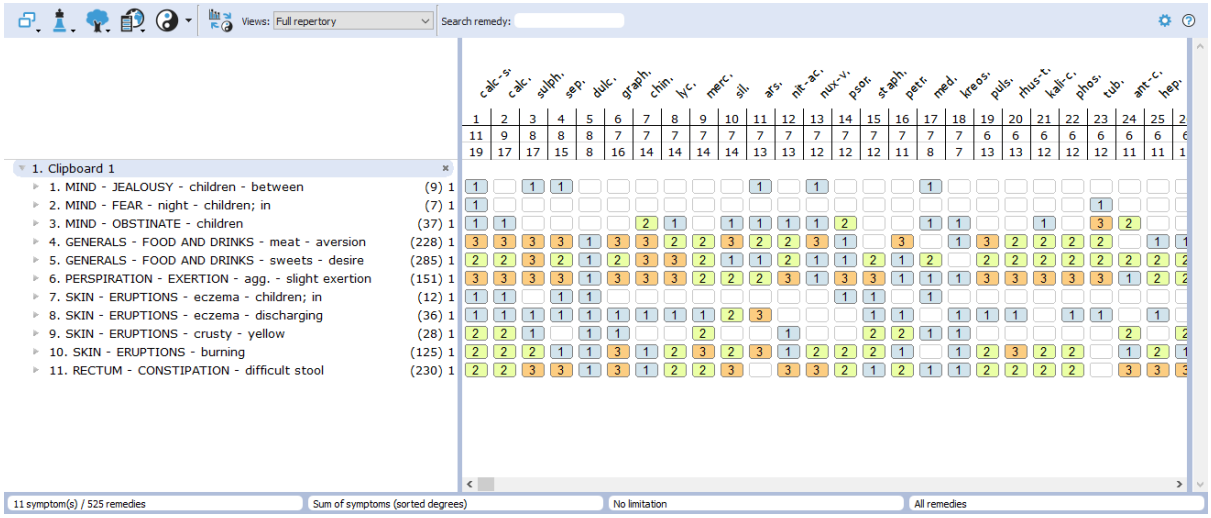

Figure-1: Reportorial chart

Clinical Images:

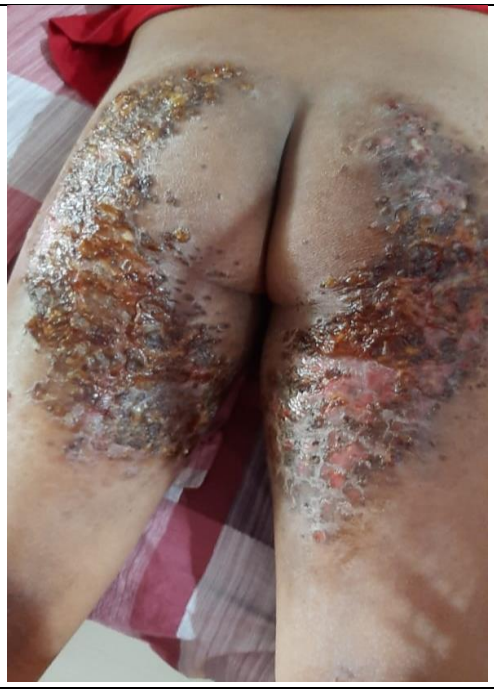

Fig-2: Dermititis during first consultation on 02.04.2020

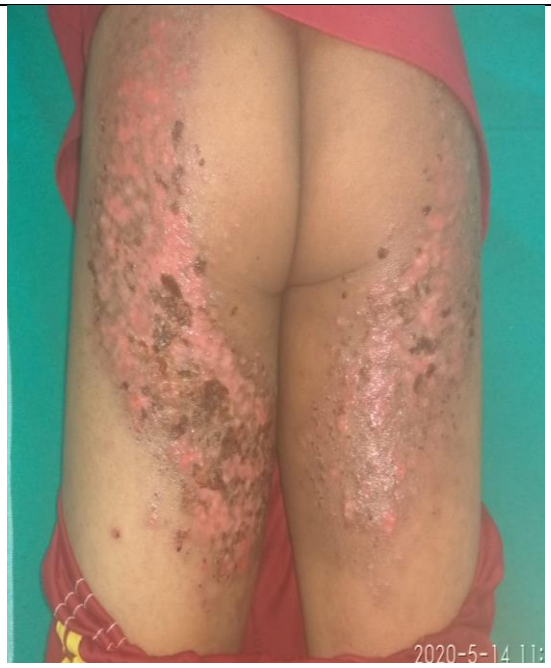

Fig-3: Status during treatment on 14.05.2020

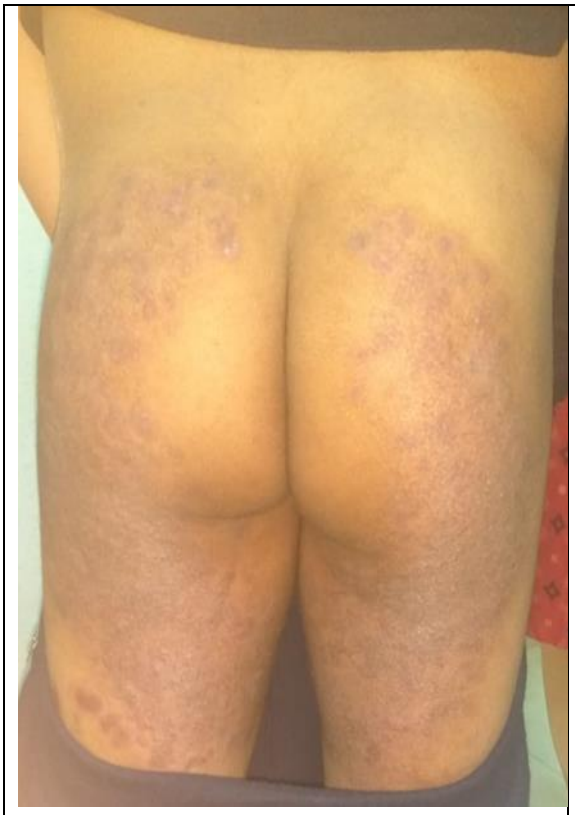

Fig-4: Status during treatment on 19.06. 2020

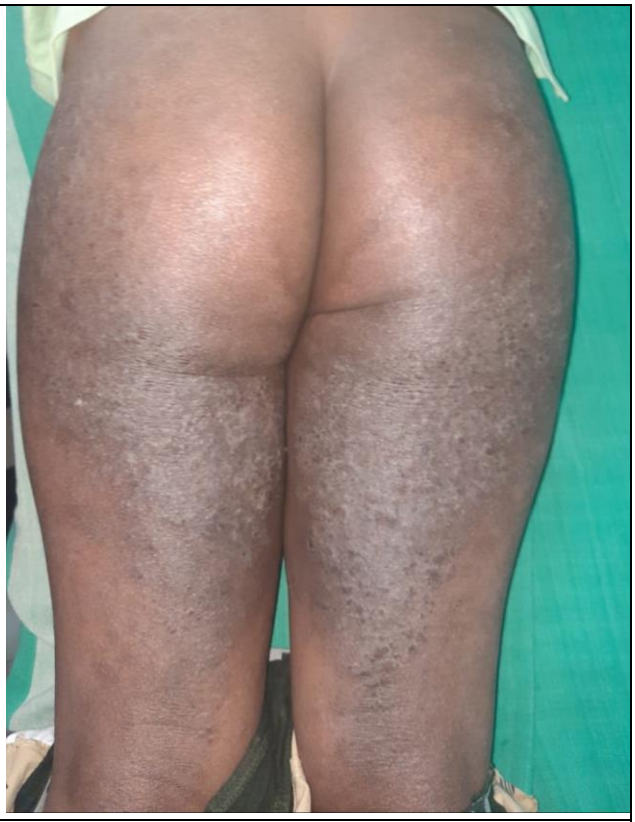

Fig-5: Status during treatment on 21.08.2020

Fig-6: Status during treatment on 20.10.2020

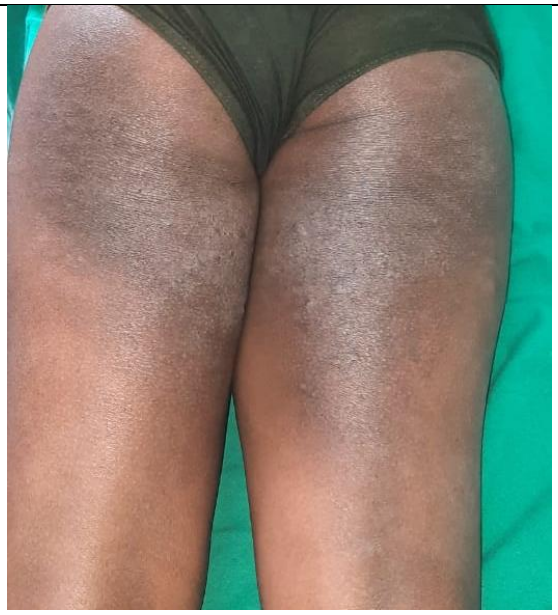

Fig:7: After treatment on 17.11.2020

Results and Discussion:

This case report shows that individualised Homoeopathic medicine will help treat Irritant contact dermatitis like cases without topical steroids and oral medications like conventional treatment. After taking the detailed case taking we repertorised the case with the following symptoms or rubrics like fear at night, children in, Jealousy children between, obstinate children in, aversion to meat, desire for sweets, perspiration all over the body on simple exertion, skin- eruptions eczema, with discharging, eruptions- crust, yellow, burning pain and constipation. In this case, *Calcarea sulphuricum* 30c and 200c potencies were prescribed based on the totality of symptoms and regularly followed up for more than one year. Treatment and follow-up with responses are mentioned in detail in **Table-1**. After the third visit, the complaints are standstill; hence, we repeat the same remedy and potency. Even after the repeat, no significant changes were observed, so increasing the potency from 30 to 200 in subsequent follow-up complaints were relieved further.[17]

Treatment outcome assessed based on CDLQI score, frequently used in all dermatological disorders for children between 4 to16 years. It is a simple, self-explanatory questionnaire, each question having four options, like very much, quite a lot, only a little, Not at all and caries score 3,2,1,0 respectively. After adding the scores of all questionnaires, the meaning of the score, the results yields like No effect on child's life (0-1), small effect (2-6), moderate effect (7-12), very large effect (13-18), and extremely large effect (19-30). We initially gave this questionnaire to the patient's mother; the score of 22 means an extremely large effect; after the intervention, the score becomes zero in five months.

The MONARCH (Modified Naranjo criteria for Homoeopathy)[18] is a valuable tool to assess the causal relationship between the homoeopathic intervention and clinical outcome. the total score was 9, which suggested a definite association between the Individualised homoeopathic medicine *Calacare sulphuricum* intervention and the clinical outcome (Define:9≥; Probable 5-8; Possible 1-4; and Doubtful≤0). Details are mentioned in **Table-2**. Therefore, according to Hom-CASE-CARE guidelines, this case report showed the positive causal attribution of the individualised medicine towards this case of Irritant contact dermatitis with associated complaints.

Homoeopathic treatment is a unique system of medicine that treats the patient as a whole and not just the disease. As per Organon of medicine, the causes of diseases are exciting, maintaining and fundamental causes. Once we know the exciting cause, it helps to avoid further suffering and restore health from indisposition. Nevertheless, when the cause is from mechanical or external forces, it may lead to mild suffering and self-curative or moderate to severe cases that need Homoeopathic intervention to hasten the curative process.[19] Similarly, in this case, individualised Homoeopathic intervention and cleaning the skin erosions with normal saline yields the results quickly and safely without any adverse events noticed in the follow-up. After five months of intervention, the patient was improved subjectively, objectively and observed no recurrence of the complaints for one year.

Conclusion:

Thus, Homoeopathy may be suggestive in treating severe Irritant contact dermatitis-like skin disorders based on the principle of Homoeopathy- Individualisation, after extracting the totality of symptoms from the patient and correctly diagnosing the disease to know the progress and recurrence of the complaints. This case report paves the path for further study to establish the efficacy of Homoeopathy.

Limitation of study:
This is single case study and need to be trial this homeopathic treatment protocol in more number of cases for its scientific validation.

Consent of patient:
The patient's consent was dully taken for registration as ethics for treatment and publication without disclosing the patient's identity.

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