



A Case Report on Type- II Lepra Reaction

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ABSTRACT

Lepra reactions remain a significant persistent problem in leprosy. Type 1 and type 2 (erythema nodosum leprosum-ENL) reactions are main cause of nerve damage and permanent disabilities. Type 1 reaction is associated with cellular immunity whereas Type 2 reaction (ENL) is related with humoral immunity and explicitly type 1 reaction is due to the reaction of T helper 1 cells against mycobacterial antigens and type 2 reaction is specified by systemic manifestations along with novel erythematous subcutaneous nodules. Proper diagnosis of lepra reactions is important for timely institution of therapy and to treat disability and morbidity. In this case the patient primarily presented with the symptoms of fever and fatigue along with superficial lesions on hands and face. Abrupt alterations in immune-mediated reaction to mycobacterium leprae antigen are called as lepra reactions.

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INTRODUCTION

Type 2 Lepra-reaction is also referred as Erythema nodosum leprosum (ENL), which is a complication of lepromatous leprosy. Lepra reactions are acute reactions which are mediated immunologically. It can be identified by the evolution of puffed up subcutaneous nodules along with fever, lymphadenopathy and arthralgias at times. Increased extent of tumor necrosis factor and immune complex deposition are analogous with ENL [1].

Type 2 lepra reactions occur in patients with:

1. Lepromatous leprosy
2. Borderline lepromatous leprosy.

Clinical features of this type 2 lepra reaction are:

1. Scattered lesions on any body part (mainly on extensor aspect of limbs and on face)
2. Superficial or deep lesions in dermis
3. Small multiple red painful nodules
4. Sterile ulcers and pustules

Other clinical presentations may include: Iridocyclitis (inflammation of eye), Orchitis (inflammation of testis), Proteinuria, Cytolytic cholestasis (incapacity to produce bile), Fever, Fatigue, Enlarged lymph nodes etc., [2]. Type 2 lepra reaction is a type-III hypersensitivity reaction [3]. These reactions can take place in between the period of treatment or it may appear in patients who are untreated previously. Leprosy is one of the chronic infectious disease which sustains actively for a longer period of time [4]. The word reaction can be described as appearance of signs and symptoms of acute inflammation in lesions of patient with leprosy. Mostly the development of type 2 reaction occurs during the first year of MDT. Generally, 50% of LL and 15% of BL patients are known to experience ENL reactions. ENL mainly occurs as painful erythematous nodules on face and extensor surface of limbs [5]. When type

2 lepra reaction is mild, nodules are less in count and resolve quickly leaving hyperpigmented macules. In case of severe reaction, nodules enlarge in size and form ulcerations [6, 7].

CASE REPORT

A male patient of age 40yrs was admitted in the dermatology ward with the complaints of fever and fatigue with chills and rigor associated with rash since few days.



Figure 1: Erythematous plaques on Right forearm (before treatment)



Figure 2: During treatment

Patient was apparently normal before 2 days but he developed fever with chills and rigor which subside with sweating on taking Tab.Dolo 650mg. Patient also developed generalized rash with no associated itching or pain. Patient also has a history of joint pains. No similar type of lesions are observed in the past. When patient is examined systematically multiple erythematous plaques are found over both arms, face, lower limbs of size varying from 1X1 cm to 2X2 cm (Figures 1, 2, 3 and 4). Hyperpigmented plaques are present over the cheeks. No ulcers or deformities are observed. Lab investigations were performed which showed increased WBC



Figure 3: Lesions on Left forearm



Figure 4: Lesions present on face

count-12,800/cmm and polymorphs-80% whereas lymphocytes-12% are found to be less in number. In microscopic examination (CUE) pus cells were found to be 6-8hpf and epithelial cells were 4-6hpf. Punch biopsy tissue is taken over back. The clinical diagnosis found in that report was BT Hansen's with type 1 reaction. Microscopic features of sample showed that tissue is lined by keratinized stratified squamous epithelium with underlying tissue showing collection of epithelial histocytes in papillary dermis & around skin.

Also, lymphomononuclear inflammatory infiltrate in dermis are noticed. Based on lab investigations and clinical data it is diagnosed that patient is suffering with "Borderline tuberculoid leprosy". MDT (Multi drug therapy) has been started to the patient which includes corticosteroids, antibiotics, anti-inflammatory agents, anti-histamines, immunosuppressants etc., this treatment should be carried out over a period of 1yr for complete reduction of type 2 lepra reaction. Symptoms decrease slowly with

time, but there are chances of reoccurrence of reaction in case of discontinuation of treatment upon slight reduction of lesions.

DISCUSSION

Type 2 lepra reaction is a medical condition caused due to presence of mycobacterium leprae. This reaction can also be called as Erythema nodosum leprosum (ENL). These reactions can take place in between the period of treatment or it may appear in patients who are untreated previously.

It is mainly associated with the symptoms like Scattered lesions on any body part, Superficial or deep lesions in dermis, Small multiple red painful nodules, Sterile ulcers and pustules appear and may have fever, fatigue, iridocyclitis, proteinuria, enlarged lymph nodes etc., Type 2 lepra reaction has sinister prognosis as it can affect many systems. Usually these reactions are seen in lepromatous & borderline lepromatous patients. When biopsy of recent red nodule is performed it shows the infiltrate of polymorphs superimposed on chronic inflammation. These infiltrates can be seen usually in deep layers of deep layers and subcutis.

The growth of mycobacterium leprae is slow and incubation period is approximately 5yrs. We can observe symptoms within a year but it may also take as long as 20yrs or even more than that.

In case of acute lesions, polymorphonuclear leucocytes are mainly seen within 72hrs and between 72-96hrs same number of lymphocytes, neutrophils, and plasma cells are also seen along with mast cells.

In case of chronic lesions, a smaller number of neutrophils and eosinophils are present but there will be increase in number of lymphocytes. Both type 1 and type 2 lepra reactions can present BL lepromatous type with the incidence rate of 12.8% despite of the fact in case of borderline tuberculoid type accounts for 74% of total cases. In majority of patients with type 2 lepra reaction, fever is noted in 82.6% cases and ulceration of lesions in 8.69%.

In case of our patient tissue biopsy results showed BL tuberculoid leprosy and on examination of patient we found primary symptoms of fever and fatigue along with chills and rigor and also developed generalized rashes on forearms, face and lower limbs. Due to presence of erythematous plaques some of the diagnostic tests are done along with biopsy of tissue which confirmed that patient is suffering with borderline type 2 lepra reaction.

CONCLUSION

In type 2 lepra reaction proper diagnosis and treatment is necessary to prevent further complications like nerve function impairment, deformity and disability. Reoccurrence of disease is more in type 2 lepra reaction when compared to type 1 lepra reaction where only single episode of reaction is seen. Irrespective of type of reaction it is very much essential to identify the leprotic reactions because patients with type 2 lepra reactions are more prone to systemic complications. One of the major challenges in lepra reactions is its management. Treatment should be taken appropriately for a period of 6month-2yrs for complete healing of infection based on the seriousness of the disease.

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Conflict of Interest

The authors declare that there is no conflict of interest.

REFERENCES

- [1] Darvin Scott Smith, Michael Stuart Bronze, and Medscape. Leprosy Treatment & Management, 2020. Accessed on: 15 Jan 2021.
- [2] Elise Ouedraogo, Pierre Couppie, Cayenne, French Guiana, et al. Lepra reactions, 2017. DermNet NZ, Accessed on: 25 Jan 2021.
- [3] Kikkeri Narayanasetty Naveen, Sharatchandra Bhimrao Athanikar, Spandana Prakash Hegde, and Vidisha Sharatchandra Athanikar. Livedo reticularis in type 2 lepra reaction: A rare presentation. *Indian Dermatology Online Journal*, 5(2):182-184, 2014.
- [4] Tony Kuncheria and V Siva Subramanian. Two atypical presentations of lepra reactions: Case report. *IP Indian Journal of Clinical and Experimental Dermatology*, 6(2):203-208, 2020.
- [5] Urvi H. Shah, Monal M. Jadwani, Sahana P. Raju, Pranav H. Ladani, and Neela V. Bhuptani. Clinical and histopathological features in lepra reaction: a study of 50 cases. *International Journal of Research in Dermatology*, 5(2):382-387, 2019.
- [6] S Chauhan, S Cruz, H Mohan, R Singh, and J Ram. Type II lepra reaction: An unusual presentation. *Dermatology Online Journal*, 12(1):18, 2006.
- [7] A Sunandini, Dhanyasree, Suryanarayana, and Padmasree Subhasini. Type 2 lepra reaction with ulceration: a case report. *Journal of Evolution of Medical and Dental Sciences*, 4(15):2630-

2634, 2015.

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