

Systemic Lupus Erythematosus with targetoid lesions: “Rowell Syndrome” or a rare manifestation of Lupus Erythematosus

Dr. Anup Kumar Tiwary¹, Dr. Firdous Jahan², Dr. Dharmendra Kumar Mishra³

1. Postgraduate Resident; Department of Dermatology, Venereology and Leprosy, RIMS, Ranchi, India.

2. Senior Resident ; Department of Dermatology, Venereology and Leprosy, RIMS, Ranchi, India.

3. Associate Professor; Department of Dermatology, Venereology and Leprosy, RIMS, Ranchi, India.

Abstract: Rowell syndrome is usually diagnosed by the presence of erythema multiforme like targetoid lesions in the patients of cutaneous or systemic lupus erythematosus and characterized by specific serological or immunological profile like speckled antinuclear antibody pattern, antibody against saline extract of human tissues (anti-SjT) and positive serum rheumatoid factor. The absence of a universally accepted criteria and their poor specificity usually make the diagnosis very difficult and doubtful. Moreover in the light of histopathological revelation of dermal mucin deposition alongwith the interface changes and necrotic basal keratinocytes in the absence of serum positivity for ANA antibody and RF, true existence of this syndrome is still debated. Herein we report a case of SLE having targetoid lesions on palm and soles & histopathological findings of both lupus erythematosus and erythema multiforme.

Keywords - lupus erythematosus, mucin, multiforme, rowell, targetoid

I. Introduction

Patients with CLE or SLE may rarely develop EM like lesions and characteristic serological abnormalities like speckled ANA pattern, anti-SjT and positive serum RF. It was first described by Rowell in 1963 so termed as Rowell syndrome. [1] Over the time, major and minor criteria were proposed to refine its diagnosis but due to the lack of specificity and consistency of these criteria, true existence of this syndrome has always been questioned. Histopathological features further suggests to consider it merely a rare presentation of Lupus erythematosus.

II. Case Report

A 19 yrs old female admitted in our department of dermatology presenting with erythematous and hyperpigmented papules, plaques and few vesicular lesions on the face, trunk, upper and lower extremities and oral mucosa associated with pruritus, fever and arthralgia for 10 days. She had past history of similar episodes 1 month back. She did not have any history of extensive sunlight exposure, herpes virus infection, upper respiratory tract infection, chest pain, dyspnea, cough or spontaneous bleeding tendencies. She had no history suggestive of Raynaud's phenomenon. She denied any history of drug intake prior to developing similar lesions in the previous episode. There was no such family history.

On cutaneous examination, there were widespread erythematous and hyperpigmented confluent papules and plaque type lesions all over the body and few vesicular lesions on distal parts of both upper and lower limbs [Fig.1]. Among mucosal sites, only oral mucosa was involved having erosions and ulcerations with crusting on lips [Fig. 2]. Targetoid lesions were prominent on both palm and soles [Fig. 3]. Hairs on scalp were sparse and brittle (lupus hairs) with diffuse alopecia over vertex.

On general examination, patient was febrile and anemic. Systemic examination was not remarkable. Among laboratory parameters, haemogram revealed haemoglobin-7.5gm%, TLC-3750/ml, platelet count-152000/ml, PCV-25.4%, RBC count-3.49 million/ml, MCH 21.5pg, ESR-121 mm at 1st hr. Peripheral blood smear suggested microcytic hypochromic anemia with aniso-poikilocytosis. Urine routine examination and microscopy showed haematuria and proteinuria. Apart from these parameters, patient's serum was positive for ANA and RF but serum anti-Ds DNA was negative.



Figure 1: generalized erythematous & hyperpigmented papular and plaque type lesions with adherent scales



Figure 2: ulceration on palate

Figure 3: EM like targetoid lesions on palm and soles

This patient met the ARA criteria for SLE as having oral ulceration, malar rash, arthralgia, haematological and renal abnormalities and positive serum ANA. Hence, diagnosis of SLE was made and along with topical potent steroids and emollients, 40 mg oral prednisolone was also started. Within 15 days, patient became asymptomatic, targetoid lesions started subsiding and papulosquamous lesions healed. To further confirm the clinical diagnosis of SLE and investigate the cause of targetoid lesions, 2 tissue specimens were taken from the targetoid lesion and lupus lesion with 4 mm punch and sent for histopathological evaluation.

III. Histopathological Examination

Histopathological examination of biopsy samples taken from both targetoid and plaque type lesion revealed moderately dense superficial perivascular lymphocytic infiltrate with extensive interface change. There is subepidermal blister, the roof of which is formed by completely necrotic epidermis. To the side of the blister the epidermis shows scattered necrotic keratinocytes in mid-epidermis and at dermo-epidermal junction. Interstitial dermis shows abundant mucin [Fig.4].

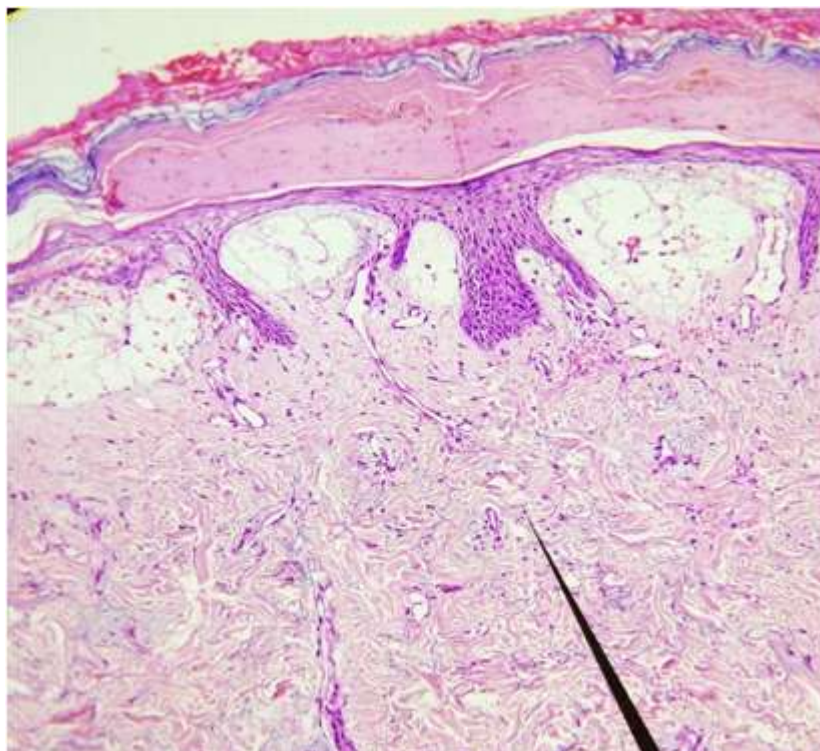


Figure 4: necrotic keratinocytes at dermoepidermal junction and epidermis, moderately dense superficial perivascular lymphocytic infiltrate with extensive interface change and abundant dermal mucin.

IV. Discussion

Rowell Syndrome is a rare syndromic entity with EM-like lesions in patients of LE. This association was first noted by Scholtz in 1922. Later in 1963 during a study on 120 patients of DLE, Rowell found distinct clinical and serological findings in 4 female patients having EM-like lesions, positive RF, positive anti-SjT (analogous to anti-Ro/La antibody) and speckled pattern of ANA. [1] Most consistent serological finding is usually speckled ANA (90%) and least are serum RF and anti-Ro/La antibody. Clinically, chilblains-like lesions can also be present which was suggested by Lee et al in 1995. [2] Due to inconsistency of these findings and to make it more clear, originally described syndrome was redefined by Zeitouni et al in the year 2000 and following major and minor criteria were proposed. [3]

Major criteria:

- i) Cutaneous LE (ACLE, SCLE, DLE) OR SLE
- ii) EM-like lesions
- iii) Speckled pattern of ANA.

Minor criteria:

- i) chilblains
- ii) anti-Ro/anti-La antibody
- iii) positive RF

In order to make a diagnosis of Rowell Syndrome, all major and atleast one minor criteria should be fulfilled but their specificity and consistency is always lacking. Apart from the least preserved immunological profile like serum RF and anti-Ro/La, even serum ANA can also be negative in SLE in 5-10% cases. [3] In DLE, ANA is relatively more likely to be negative. Hence in view of non-specific serological profile with poor sensitivity, existence of Rowell Syndrome is frequently questioned. [4] [5] [7] Furthermore, histopathological examination of even targetoid lesions reveals orthohyperkeratosis, keratotic plugging, basal cell vacuolar degeneration with colloid bodies, necrotic basal keratinocytes, perivascular and periadnexal lymphocytic infiltrates, melanin incontinence and dermal mucin deposition, consistent with Lupus erythematosus. [6] [8] [9] [11] According to some authors, co-occurrence of these two types of lesions have been explained by a common underlying pathomechanisms incited by molecular mimicry. [6] [12] Basal cell vacuolar degeneration and necrotic basal keratinocytes are seen in both LE and EM because of dysregulated apoptosis preceded by immunologic response initiated by unidentified HSV, EBV or other viral infections cross-reacting with lupus autoantigens. [12] Thus, with these clinical, histopathological and immunological scenario and being described with all forms of LE (DLE, SCLE, SLE), it invites an open area of debate to accept or deny the existence of this syndromic entity on the basis of some valid ground.

V. Conclusion

In the light of similar histopathological features of both types of lesions, LE and targetoid, and inconsistency and poor sensitivity of currently proposed criteria of Rowell syndrome, the true existence of this syndrome is not evidence based hence, Rowell syndrome should be considered merely as an atypical presentation of lupus erythematosus.

References

- [1]. Rowell NR, Beck SJ, Anderson JR. Lupus erythematosus and erythema multiforme-like lesions. *Arch Dermatol* 1963;88:176-80.
- [2]. A. Lee, P. Batra, V. Furer, W. Cheung, N. Wang, and A. Franks, “Rowell syndrome (systemic lupus erythematosus + erythema multiforme),” *Dermatology Online Journal*, vol. 15, no. 8, article 1, 2009.
- [3]. Zeitouni NC, Funaro D, Cloutier RA, Gagne E, Claveau J. Redefining Rowell’s syndrome. *Br J Dermatol* 2000;142:343-6.
- [4]. D. V. S. Pratap, Sivarami K. Reddy, Sudha C. Rani, Venkata A. Krishna, D. Indira ANA-negative systemic lupus erythematosus *Indian J Dermatol Venereol Leprol* July-August 2004 Vol 70 Issue 4
- [5]. Shteyngarts AR, Warner MR, Camisa C. Lupus erythematosus associated with erythema multiforme: Does Rowell’s syndrome exist? *J Am Acad Dermatol* 1999;40:773-7.
- [6]. Aydogan K, Karadogan SK, Balaban Adım S, Tunal. Lupus erythematosus associated with erythema multiforme: Report of two cases and review of the literature. *J Eur Acad Dermatol Venereol* 2005;19:621-627.
- [7]. Fatma Aydin, Nilgun Senturk, Esra Pancar Yuksel, Levent Yildiz, Tayyar Canturk, Ahmet Yasar Turanli systemic lupus erythematosus with an erythema multiforme like lesions *Indian J Dermatol* 2007;52(1):56-58
- [8]. Lupus erythematosus masquerading as erythema multiforme: Does Rowell syndrome really exist? Gunjan M Modi ,Angela Shen , Ali Mazloom , Janine Mawad , Aivlys Perez , Michael L Sonabend , Sylvia Hsu *Dermatology Online Journal* 1 5 (2): 5
- [9]. Khandpur S, Das S, Singh MK. Rowell’s syndrome revisited: report of two cases from India. *Int J Dermatol* 2005;44 (7):545-9.
- [10]. Dogra A, Minocha Y, Gupta M, Capalash P. Rowell’s Syndrome. *Indian J Dermatol Venereol Leprol* 2000;66 (6):324-5
- [11]. Sontheimer RD. Subacute cutaneous lupus erythematosus: 25-year evolution of a prototypic subset (subphenotype) of lupus erythematosus defined by characteristic cutaneous, pathological, immunological, and genetic findings. *Autoimmune Rev* 2005;4:253-63.
- [12]. James JA, Kaufman KM, Farris AD, Taylor-Albert E, Lehman TJ, Harley JB. An increased prevalence of Epstein-Barr virus infection in young patients suggests a possible etiology for systemic lupus erythematosus. *J Clin Invest* 1997;100:3019