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Images in Rheumatology

Bullous Cutaneous Lupus Erythematosus and Class V Lupus Nephritis: Rare Concurrence

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Introduction

A 21-year-old female with positive anti-nuclear antibody and anti-double-stranded DNA was diagnosed with systemic lupus erythematosus (SLE). After 2 months of diagnosis, she presented with vesiculo-bullous fluid filled skin lesions over face and extremities, associated with fever (Figure 1). Possibilities of blistering in SLE and bullous LE were considered clinically. A lesional skin biopsy revealed a subepidermal bulla with neutrophilic infiltrate and full house dermo-epidermal deposits suggestive of bullous SLE (BSLE). No interface dermatitis was present (Figure 2).

A week after development of skin lesions, she presented with generalized edema and lethargy. Blood counts showed a hemoglobin of 12.4 g/dL with neutrophilic leucocytosis (absolute neutrophil count 11 424 cells/cmm). Urinalysis revealed proteinuria of 1.7 g per day. No hematuria, leukocyturia, or casts were present. Renal function was preserved (creatinine of 0.36 mg/dL and urea of 24 mg/dL). Complement levels were within normal limits (C3 118 mg/dL and C4 28.4 mg/dL). Renal biopsy showed membranous morphology with positive immunofluorescence suggestive of ISN/RPS 2018 class V lupus nephritis. There was no evidence of chronicity in the biopsy (Figures 3 and 4).

In view of BSLE with class V lupus nephritis, the patient was given methylprednisolone pulse therapy with hydroxychloroquine. However, her skin lesions persisted, and methotrexate was initiated, which lead to resolution of skin lesions and also the proteinuria. No relapse was noted during the 4 months of follow-up.

Bullous SLE is an extremely uncommon subset of SLE. It is a rare anti-collagen VII antibody mediated subepidermal blistering.[1] Camisa et al[2] have suggested a set of criteria for the diagnosis of BSLE. These include a diagnosis of SLE based on fulfillment of American Rheumatism Association criteria; vesicles presenting on, but not restricted to sun exposed skin; subepidermal blisters with immune deposits along the basement membrane zone on skin biopsy; with or without a positive indirect immunofluorescence in serum.

In a retrospective study involving 5149 SLE cases diagnosed over 12 years, only 15 cases presented with vesiculo-bullous skin lesions. Of these, BSLE was diagnosed only in ten cases (incidence 0.19%).[3] The other

Figure 1. Tense blister (arrow) and crusts on forearm.

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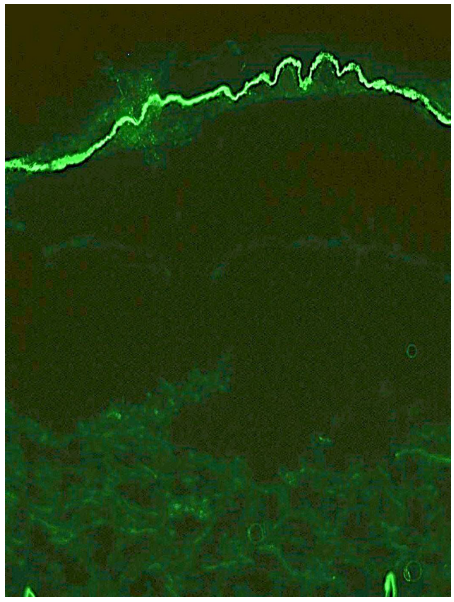

Figure 2. Basement membrane zone of skin showing band-like linear deposits of IgG on direct immunofluorescence. Fluorescein isothiocyanate, ×200.

5 cases included blistering in a background of cutaneous LE lesions and toxic epidermolytic necrosis-like lesions. It is worthwhile to clinically suspect BSLE and confirm the diagnosis with a skin biopsy. While BSLE lesions show neutrophilic abscess-like lesions in the papillary dermis similar to dermatitis herpetiformis, blisters developing in cutaneous LE show interface dermatitis typical of SLE with basal layer degeneration. Toxic epidermolytic necrosis lesions, on the other hand, show extensive epidermal necrosis.[3]

Bullous SLE occurs mostly in females aged 30-40 years.[4-5]It is characterized by rapid and widespread development of tense vesicles and bullae that heal without scarring and may not involve sun-exposed areas. The association of BSLE preceding or occurring concomitantly with extracutaneous manifestations has been noted.[4] These include hematologic (cytopenias and autoimmune hemolytic anemia), renal (lupus nephritis), neurologic (neuropsychiatric lupus), polyarthritis, arthralgias, and serositis.[4] Those that present with renal involvement usually show proliferative lupus nephritis class III or IV. Bullous SLE manifesting simultaneously with a non-proliferative membranous morphology (class V lupus nephritis) is a rare presentation. Only 2 case reports of BSLE with class V lupus nephritis have been published in the English literature, both were refractory to steroid therapy and required further immunosuppression.

Bullous SLE must be differentiated from blisters in SLE as BSLE may indicate a possibility of the development of lupus nephritis. Poor response to therapy and a worse prognosis may be associated with BSLE. Skin manifestations can be a marker of disease activity. Physician awareness and higher index of suspicion are required to avoid diagnostic delay

Main Points

- Bullous systemic lupus erythematosus (SLE) is an uncommon presentation of SLE and can be a sign of disease activity.
- Bullous SLE must be differentiated from blisters in SLE as BSLE may indicate a possibility for development of lupus nephritis.
- Poor response to therapy and a worse prognosis may be associated with bullous SLE.

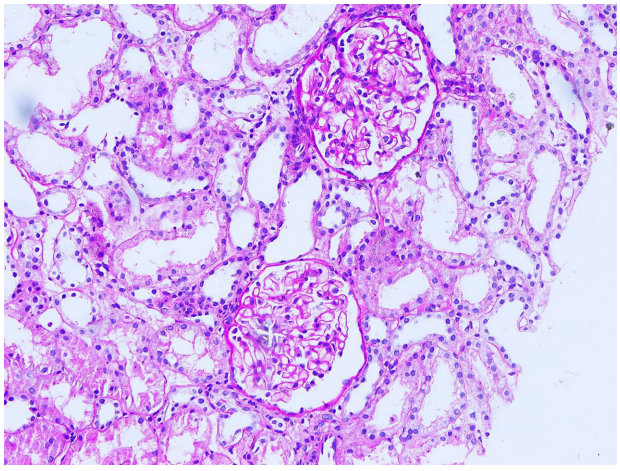

Figure 3. Renal biopsy showing 2 glomeruli with diffuse glomerular membrane thickening. Periodic Acid Schiff, ×200.

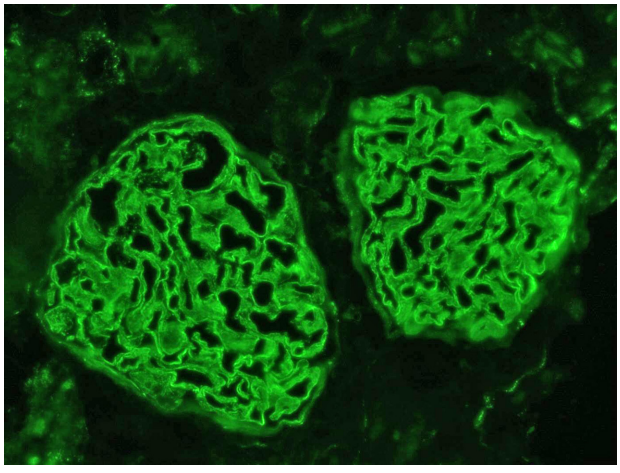

Figure 4. Fine granular deposits of IgG along the glomerular basement membranes on direct immunofluorescence. Fluorescein isothiocyanate, ×200.

Ethics Committee Approval: This study was approved by the Ethics Committee of Dr Ram Manohar Lohia Institute of Medical Sciences, Lucknow, India (Approval no: 28/19; Date: 02-12-2019).

Informed Consent: Written informed consent was obtained from the patient who agreed to take part in the study.

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References

1. Merklen-Djafri C, Bessis D, Frances C, et al. Blisters and loss of epidermis in patients with lupus erythematosus: a clinicopathological study of 22 patients. *Med (Baltim)*. 2015;94(46):e2102. [CrossRef]
2. Camisa C, Grimwood RE. Indirect immunofluorescence in vesiculobullous eruption of systemic lupus erythematosus. *J Invest Dermatol*. 1986;86(5):606. [CrossRef]
3. Chanprapaph K, Sawatwarakul S, Vachiramon V. A 12-year retrospective review of bullous systemic lupus erythematosus in cutaneous and systemic lupus erythematosus patients. *Lupus*. 2017;26(12):1278-1284. [CrossRef]
4. de Risi-Pugliese T, Cohen Aubart F, Haroche J, et al. Clinical, histological, immunological presentations and outcomes of bullous systemic lupus erythematosus: 10 New cases and a literature review of 118 cases. *Semin Arthritis Rheum*. 2018;48(1):83-89. [CrossRef]
5. Wong SN, Chua SH. Spectrum of subepidermal immunobullous disorders seen at the National Skin Centre, Singapore: a 2-year review. *Br J Dermatol*. 2002;147(3):476-480. [CrossRef]