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Association of Generalized Psoriasis and Mixed Glomerulonephritis in a 10-year-old Girl

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ABSTRACT Generalized psoriasis and renal function disorder were previously described in sporadic adult cases, revealing a new entity – psoriatic nephropathy. So far there have been only two cases describing this association in children. We present and discuss a case of 10-year-old girl with the unique biopsy findings of double glomerulonephritis associated with the simultaneous onset of generalized psoriasis.

KEY WORDS: generalized psoriasis, renal function disorder, psoriatic nephropathy

INTRODUCTION

Psoriasis is a common chronic, immune-mediated, inflammatory, systemic disease with a strong genetic basis. It primarily targets the skin, both of children and adults, and causes complex alterations in epidermal proliferation and differentiation. In one-third of cases it begins in childhood and continuously increases in prevalence and incidence (1).

The associations between psoriasis and various diseases, like rheumatoid arthritis and cardiovascular and metabolic disturbances, are now well established, but its relation to renal disorders is less clear. A combination of psoriasis vulgaris and mesangiocapillary glomerulonephritis, characterized by massive proteinuria, seriously reduced glomerular filtration rate, and elevated circulating immune complexes was first reported three decades ago (2). Since then, several authors reported on the association of psoriasis and renal disorders (3-10). An entity called psoriatic nephritis was introduced ten years ago, mainly based on case of ten adults with psoriasis and biopsy-proven immunoglobulin A (IgA) nephropathy, treated only with topical preparations and therefore not drug-induced. Both diseases responded very well to corticosteroids or immunosuppressive treatment,

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indicating a common immune background. Recently, the association between generalized psoriasis and IgA nephropathy was found among children, but remained limited to a single case report. The 8-year girl was successfully treated with cyclosporine A for both diseases (4).

CASE REPORT

A 10-year old girl complained of skin changes four year prior to first admission at our Department, where chronic plaque psoriasis was clinically and histologically confirmed (locus HLA-B, 17/27 positive). Her uncle had a generalized type of psoriasis. The girl was treated with nine exposures to ultraviolet B (UVB), five psoralen and ultraviolet A (PUVA) bath treatments, keratolytics, and corticosteroids. Symptoms were attenuated, and she was discharged. Exacerbation occurred after three weeks, and she was thus readmitted. The patient had a mildly elevated body temperature of 37.2°C. Hypertrophic tonsils and slightly enlarged neck lymphatic nodes were found. There were no signs of joint inflammation. A PUVA bath was applied in 11 expositions with keratolytics and corticosteroids. Oral antihistaminics were prescribed to reduce itching. A routine laboratory check revealed normal erythrocyte sedimentation rate and blood counts. However, elevated serum creatinine of 107 µmol/L and proteinuria of 0.6 g/L were found. Creatinine clearance amounted to 42, 7 mL/min/m2. Total complement and the C3 and C4 component of the complement system were normal. Antinuclear antibodies (ANA) and anti-neutrophil cytoplasmic antibodies (ANCA) were negative, as well as antigens and antibodies to hepatitis B and C. Blood pressure was in the normal range. Renal biopsy was performed and revealed mesangial proliferative glomerulonephritis with mesangial IgA deposits. Sporadic sub-epithelial deposits and diffused thinning of the glomerular basement membrane were found as well (Figure 1, A and B). The last check-up revealed decreasing proteinuria and improving creatinine clearance without additional therapy.

DISCUSSION

Glomerulonephritides associated with psoriasis, reported almost exclusively in adults, are very rare and include variable forms. To our knowledge, there is only one reported case of a child with comorbidity of psoriasis and IgA nephropathy (4). Comorbidity of psoriasis and double/mixed glomerulopathy in children is even rarer. Kim *et al.* reported a 17-year-old boy with kidney disorder revealed after six years of psoriasis treatment. The kidney biopsy showed double/mixed glomerulonephritis, IgA nephropathy, and membranous glomerulonephritis (5).

CONCLUSION

Our case presented a unique pattern of mixed glomerulonephritis. Histological features of mesangial proliferative glomerulonephritis with IgA deposits, sub-epithelial deposits and diffuse thinning of the glomerular basement membrane were found concurrently. While IgA nephropathy may be assumed to be psoriasis related, the presence of sub-

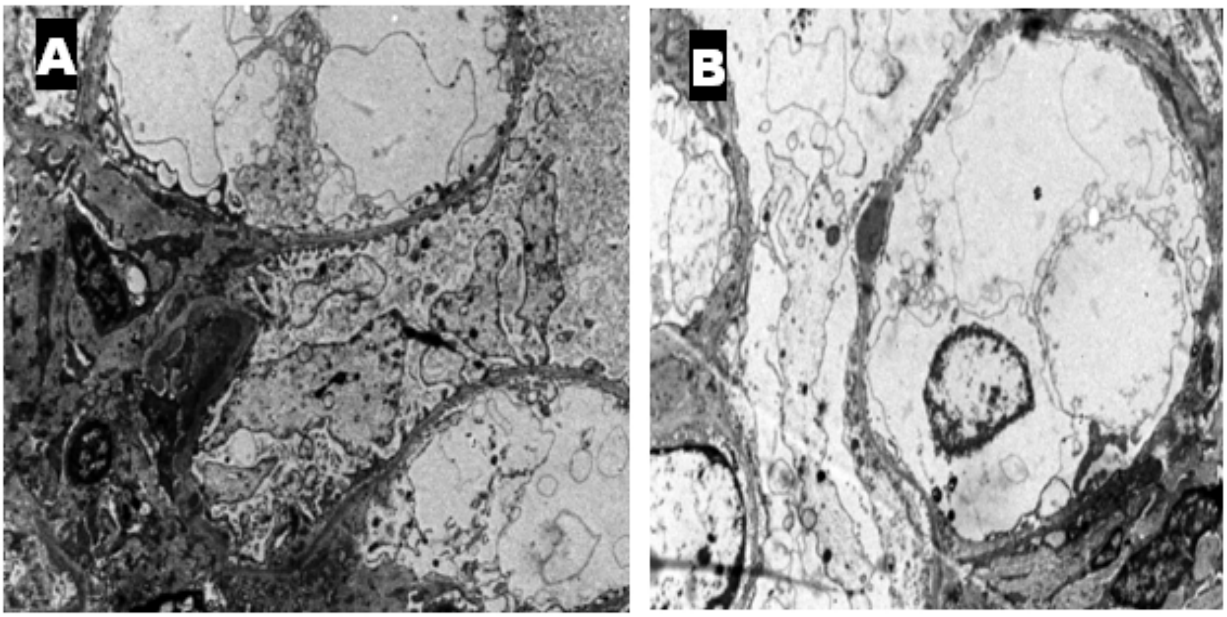

Figure 1. Kidney biopsy. A. Electron microscopy. 4400x. Mesangial deposits. B. Electron microscopy. 5600x. Subepitelial deposit. Diffuse thinning of glomerular basement membrane.

epithelial deposits points to previously unrecognized post-infectious glomerulonephritis as a consequence of bacterial infection of skin lesions. Both the poor socio-economic conditions and lack of compliance to therapy in our patient seems to support this hypothesis. On the other hand, it might be that the thinning of the glomerular basement membrane is the primary glomerular lesion, secondarily coupled with immune-mediated glomerulonephritis. More cases are needed to prove any of these possibilities. Therefore, we recommend more frequent urine analysis for hematuria and/or proteinuria with periodic control of kidney function in children affected with psoriasis. This is particularly important today due to increased migration rates of people from regions with poor socio-economic conditions in Europe.

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