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IgA Nephropathy and Psoriasis in a Child

Çocuk Hastada IgA Nefropatisi ve Psöriasis

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ABSTRACT

IgA nephropathy is the most common primary glomerulonephritis worldwide. Painless macroscopic hematuria is frequent in children and often coincides with infections of the upper respiratory tract and/or digestive system. The distinctive carbohydrate side chains of IgA1 molecules play an important role in the pathogenesis of IgA nephropathy. Definitive diagnosis of IgA nephropathy requires evaluation of a renal biopsy specimen. Psoriasis is also a common childhood chronic skin disease with changes in epidermal differentation and proliferation. There are also a few literature reports on the co-existence of IgA nephropathy and psoriasis mainly in adult patients. Herein, we report a child with psoriasis who was diagnosed as Ig A nephropathy after periods of painless hematuria.

KEY WORDS: Hematuria, IgA Nephropathy, Psoriasis, Child

ÖZ

IgA nefropatisi (IgAN) primer glomerulonefrit nedenlerinin başında gelir. Ağrısız makroskobik hematüri çocuklarda sık görülür ve genellikle üst solunum yolu ve/veya sindirim sistemi enfeksiyonları ile birliktelik gösterir. IgA1 molekülünün farklı karbonhidrat yan zincirleri, IgAN'nin patogenezinde önemli rol oynamaktadır. IgAN'nin kesin tanısı renal biyopsi gerektirmektedir. Psöriasis epidermal farklılaşma ve proliferasyon ile giden çocukluk çağının sık görülen kronik deri hastalığıdır. Literatürde sadece erişkin hastalarda, IgAN ve psöriasis hastalığı birlikteliği bildirilmiştir. Biz bu yazıda hematüri semptomu ile izlenip IgAN tanısı alan ve psöriasis geliştiren bir pediatrik olgu sunduk.

ANAHTAR SÖZCÜKLER: Hematüri, IgA Nefropatisi, Psöriasis, Çocuk

INTRODUCTION

IgA nephropathy (IgAN) is the most common primary glomerulonephritis worldwide. It constitutes an important cause of renal failure. The characteristic presentation is asymptomatic proteinuria and hematuria (1). Painless macroscopic hematuria is frequent in children and often coincides with infections of the upper respiratory tract and/or digestive system. Definitive diagnosis of IgAN requires evaluation of a renal biopsy specimen. By immunofluorescence, IgA is the predominant or co-dominant component among the deposits of immunoglobulins and is usually restricted to the mesangium, often with complement component C3 so that free access to active complement components is likely associated with more severe tissue injury. The distinctive carbohydrate side chains of IgA1 molecules play an important role in the pathogenesis of IgAN (2). IgAN has been associated with several diseases such as celiac sprue, seronegative spondyloarthropathies, postinfectious arthritis, ulcerative colitis, regional enteritis, dermatitis herpetiformis, malignancies and mixed cryoglobulinemia (2,3).

Psoriasis is also a common childhood chronic skin disease with changes in epidermal differentation and proliferation. There are also a few literature reports on the co-existence of IgAN and psoriasis mainly in adult patients (4).

We present a 15-year-old boy who was diagnosed with psoriasis and IgAN.

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CASE REPORT

A 15-year-old boy was admitted to our clinic with macroscopic hematuria. He had a prior history of two macroscopic hematuria episodes following febrile tonsillopharyngitis during the last two years. He had also palmoplantar erythematous plaques with squams that had been present for 3 years. He was diagnosed as psoriasis vulgaris by skin biopsy one month ago. He had been treated with topical steroids for one month. He had neither edema nor joint complaints. There was no history of renal failure, hematuria or nephrolithiasis in his relatives. On admission he was afebrile, weight: 60 kg (50-75th percentile), height: 165 cm (50th percentile) blood pressure: 110/70 mmHg. His physical examination revealed round erythematous palmoplantar plaques (Figure 1). His laboratory data showed white cell count (WBC): $8.0x10^3/mm^3$, hemoglobin: 12.2 gr/dl, platelet count: $368000/mm^3$, with PT and APTT were within the normal range. Blood chemistry values were serum creatinine: 3.69 mg/dl, blood urea nitrogen (BUN): 59 mg/dl, uric acid: 9.3 mg/dl, and albumin: 4.0 g/dl; serum electrolytes and liver function tests were normal. On spot urinalysis, proteinuria/leucocyturia and hematuria were detected. The urinary protein excretion was 25 $mg/m^2/hr$. Estimated glomerular filtration rate was 34.6 ml/min/1.73 m^2. Serological tests for antinuclear antibody/complement factor C3/anti-streptolysin O titer (ASO) were within normal limits. He had a negative result for urine culture. His serum total IgA level was elevated (528 mg/dl, normal range 70-312 mg/dl). Abdominal ultrasonography revealed normal sized and moderately echogenic kidneys.

The renal biopsy showed features of glomerulonephritis with mesengial proliferation, interstitial fibrosis and diffuse mesengial deposits of IgA and C3 (Figure 2-3). He was diagnosed as IgA nephropathy with these findings. After 6 weeks of oral steroid (60mg/day) treatment, serum creatinine, BUN and uric acid levels decreased to 0.6 mg/dl, 7.8 mg/dl and 3.9 mg/dl, respectively. On follow-up, he had no more hematuria and proteinuria on urinalysis.

DISCUSSION

Immunoglobulin A nephropathy is characterized by prominent diffuse mesangial IgA deposits at immunofluorescent microscopy. The condition was initially thought to be a rare and benign cause of recurrent hematuria. IgAN has been associated with several diseases, such as celiac sprue, seronegative

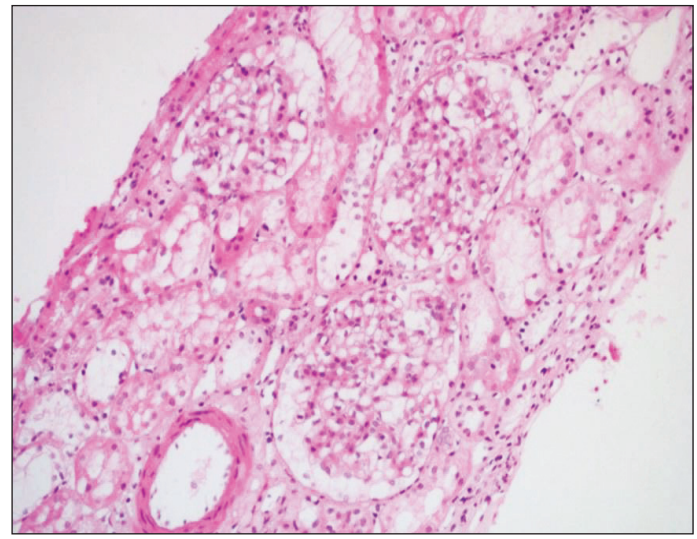

Figure 2: *Light microscopy showing glomeruli with mesangial proliferation.*

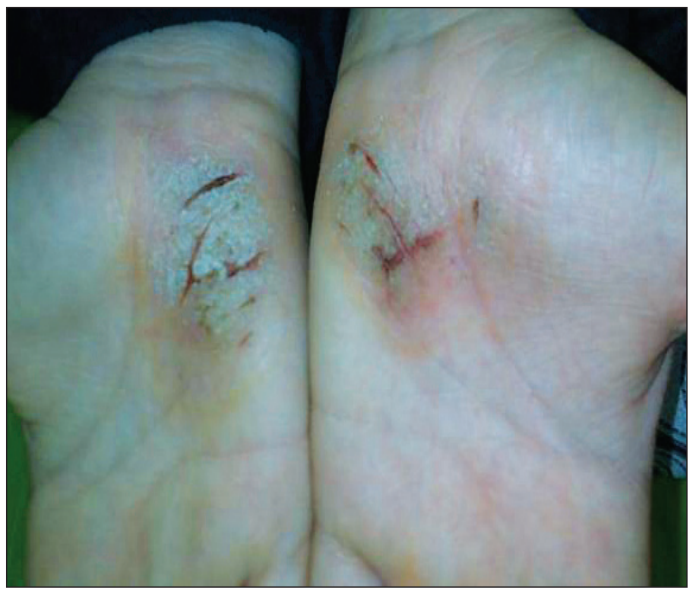

Figure 1: *Round erythematous palmar plaques.*

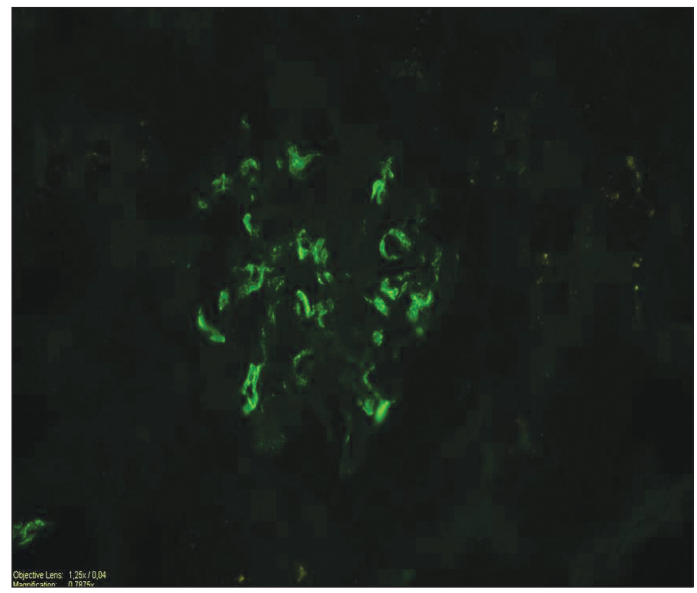

Figure 3: *Immunoflourescence microscopy revealed mesangial deposits.*

spondyloarthropathies, posinfectious arthritis, ulcerative colitis, regional enteritis, dermatitis herpetiformis, malignancies, mixed cryoglobulinemia, human immunodeficiency virus (HIV) infection and idiopathic pulmonary hemosiderosis (1). Its association with psoriasis has been rarely described. Singh et al (3) observed three patients with psoriasis and glomerulonephritis. Psoriasis was accompanied by IgA nephropathy in one of these cases, by focal proliferative glomerulonephritis in the second and by membranous glomerulopathy in the third. Kim et al. reported the presence of both IgA nephropathy and membranous glomerulonephritis in a 17-year-old boy with psoriasis (5). The majority of literature reports, mainly casuistic, refer to the coexistence of psoriasis and IgA nephropathy (4,5,6). Based upon these reports, a true association between these two conditions remains speculative, rather than proven, but we support the idea of performing urinalysis on patients with chronic psoriasis as a way to evaluate for possible glomerulonephritis.

The clinical spectrum can be variable. In a previous report, pustular psoriasis in a one-year-old baby was followed by IgA nephropathy 8 years later. It is therefore suggested that there could be a specific association between IgA nephropathy and psoriasis (7). In our study, we report a child followed-up with psoriasis who was then diagnosed with IgA nephropathy after periods of hematuria. Patients with psoriasis might show varying degrees of glomerular involvement, presenting with microalbuminuria, hematuria, nephrotic syndrome and a deterioration in renal function. While the occurrence of nephrotic syndrome as a late complication of psoriasis is recognized in adult patients, it is rare in childhood (8). Although co-existence of psoriasis and IgA nephropathy has been reported in childhood, the relationship between diseases has not been clarified yet. Lewis et al. reported the role of group A streptococcal antigens in the pathogenesis of psoriasis (9). Dysregulation of IgA system and increased polymeric IgA fraction that is produced at mucosal surfaces as a result of an abnormal mucosal antigen handling play a role in the pathogenesis of both psoriasis and IgA nephropathy (10).

Zadrazil et al. proposed the concept of a "psoriatic nephropathy" and recommended routine urinalysis in all psoriatic patients (4). We propose that the kidney disease may be a common feature of psoriasis, which may be labeled a "psoriatic nephropathy" or "psoriatic kidney disease".

Finally, we want to emphasize the importance of performing urine analysis in all children with psoriasis although the co-existence of psoriasis and Ig A nephropathy in children is rarely reported.

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