

Özkan Ulutaş,
Hülya Taşkapan,
Funda Sarı,
Mustafa Şenol

An Epidermolysis Bullosa Patient Complicated with Chronic Renal Failure

Epidermolizis Bülloza Tanısıyla İzlenen Olguda Kronik Böbrek Yetmezliği

Abstract

A 32-yr-old man with epidermolysis bullosa presented with clinical and laboratory findings of chronic renal failure. The patient was supposed to be suffering from mesangial IgA glomerulonephritis in view of the repeated persistent macroscopic episodes of hematuria and raised serum IgA levels, especially polimeric IgA. Because continuous vascular access could not be established, the patient died due to uremia and sepsis. Renal complications are associated with life-threatening problems in this inherited mechanobullous disease because it is impossible to obtain a continuous vascular access or a continuous peritoneal access. The possibility of IgA nephropathy should be considered in patients with epidermolysis bullosa. They should be periodically set up screened for IgA levels and hematuria.

Key words: Epidermolysis bullosa, kidney failure, chronic

Özet

Epidermolizis bülloza (EB) tanısıyla takip edilen 32 yaşında erkek hasta, kronik böbrek yetmezliğinin klinik ve laboratuvar bulgularıyla başvurdu. Tekrarlayan persistan hematürisi olan ve özellikle polimerik IgA olmak üzere serum IgA düzeyleri yüksek olarak saptanan hastada mezengial IgA glomerulonefriti düşünüldü. Sürekli vasküler yol sağlanamayan hasta sepsis ve üremi nedeniyle kaybedildi. Bu ailesel mekano-büllöz hastalıkta kronik vasküler ya da kronik periton yolu sağlanamadığı için renal komplikasyonlar hayatı tehdit eden problemlere neden olabilir. Epidermolizis bülloza hastalarında IgA nefropatisi ihtimali göz önünde bulundurulmalıdır. Hastalarda hematüri ve serum IgA düzeyleri periyodik olarak takip edilmelidir.

Anahtar kelimeler: Epidermolizis bülloza, böbrek yetmezliği, kronik

İnönü Üniversitesi Tıp Fakültesi,
Nefroloji Anabilim Dalı,
Malatya, Türkiye

*İnönü Üniversitesi
Tıp Fakültesi, Dermatoloji
Anabilim Dalı,
Malatya, Türkiye

Yazışma Adresi/ Correspondence:

Özkan Ulutaş,
İnönü Üniversitesi Tıp Fakültesi,
Nefroloji Anabilim Dalı,
Malatya, Türkiye
Kahramanmaraş, Türkiye
Tel.: +90 344 225 75 75
E-posta:
drozkanulutas@yahoo.com
Geliş Tarihi/Submitted: 05.03.2012
Kabul Tarihi/Accepted: 15.06.2012

Introduction

Epidermolysis bullosa (EB) is a rare genetic disease characterized by the presence of extremely fragile skin and recurrent blister formation, resulting from minor mechanical friction or trauma. The most obvious signs are vesicles and bullae within the skin and mucous membranes. Inside the body, such as the linings of the mouth, esophagus, stomach, intestines, lungs, bladder, and genitals may also be involved and clinical heterogeneity is a manifestation of a variety of heritable molecular defects. There are three main forms of inherited EB: EB simplex, junctional EB and dystrophic EB (DEB). These different subtypes are defined according to the depth of blister location

within the skin layers. In EB, secondary renal amyloidosis, urological complications such as genitourinary tract stricture and post-infectious glomerulonephritis have all been reported (1-5). Although it is known that IgA nephropathy may complicate several dermatosis such as dermatitis herpetiformis, psoriasis, EB complicated by IgA nephropathy has been thought to be rare (1, 6-8). We described a patient with junctional or dystrophic EB associated with possible IgA nephropathy.

Case

A 34-yr-old man who have been followed for EB in the Dermatology Department of our center for 6 years presented with the

symptoms of dyspnea, nausea, and vomiting. He had a history of skin fragility in response to mechanical trauma beginning from birth. The patient's sister died of the same disease in her 29. He was diagnosed as EB when he was seven years old. The skin biopsy taken 3 years ago from the perilesional skin adjacent to a fresh blister, hematoxylin-eosin and periodic acid-schiff (PAS) stainings showed subepidermal blister formation. PAS-positive basement membrane was found on the floor of blisters. It was reported that he had not come routine visits in Dermatology Department for two years. Renal function and blood biochemistry values were normal two years ago. The patient reported no other medications except some topical steroids and topical antibiotics. Physical examination on admission revealed cachexia. Multiple fragile blisters were observed all over his body. He had nail loss and dystrophy and dental enamel hypoplasia. The patient was afebrile, had a blood pressure of 90/60 mmHg, and a rate of 108 beats/min. On laboratory examination, hematocrite was 21%, WBC count was 10,100/mm³, platelet count was 273,000/mm³, and erythrocyte sedimentation rate was 50 mm/hour. Blood urea nitrogen (BUN) was 162 mg/dl, creatinine of 10.6 mg/dl, total protein of 6.7 g/dl, albumin of 1.7 g/dl, alkaline phosphatase (ALP) of 115 IU/l, uric acid of 7.8 mg/dl, Na of 132 mEq/l, K of 5.3 mEq/l, Ca of 8.7 mg/dl, P of 7.7 mg/dl, and parathyroid hormone level (intact PTH) was 170 pg/ml. Proteinuria was not detected. Urine examinations revealed dysmorphic hematuria. Other laboratory results included negative tests for hepatitis B, C, antinuclear antibody and cryoglobulins. Complement levels were within normal limits. IgA levels were 720 mg/dl (normal 45-380 mg/dl). Serum immunofixation electrophoresis revealed high polymeric IgA. On renal ultrasound, the kidneys measured 8.7 and 9.2 cm on the right and left, respectively, with increased echogenicity consistent with chronic kidney disease. No evidences of obstruction, mass or renal stones were observed. Significant increases in serum IgA (polymeric IgA) and hematuria episodes were detected in the hospital records of the patient during the follow-up of Dermatology Department. The patient was started intermittent hemodialysis treatment through jugular vein catheterization. After ten days catheter was removed by the reason of extensive bullous lesions and infection findings on the insertion site. Because of the same



Figure 1. Multiple fragile blisters on all over the body

problems catheterizations were repeated 6 times. The patient died of uremia and sepsis because continuous vascular access could not be established. Unfortunately, in this case postmortem kidney biopsy could not be performed because of the patient's parent refusal.

Discussion

IgA nephropathy is a mesangial proliferative glomerulonephritis characterized by diffuse mesangial deposition of IgA. IgA is the most abundant immunoglobulin in the body and primarily concerned with mucosal defence. Mucosal antigen challenge provokes polymeric IgA (pIgA) production by plasma cells of the mucosa-associated lymphoid tissue, the pIgA is transported across epithelium into mucosal fluids. Circulating IgA is bone marrow-derived and mostly in monomeric IgA (mIgA) form. The mesangial IgA in IgA nephropathy is pIgA. The clinical association with mucosal infection originally suggested that the mesangial pIgA comes from the mucosal immune system, as most pIgA is mucosally derived. In our patient prominent IgA was polymeric IgA. Genitourinary tract stricture does not seem to be a likely cause of the chronic renal failure (CRF) in this case. Likewise post infectious glomerulonephritis is unlikely, as complement levels were normal (6-10).

IgA mesangial deposits have been reported to be associated with some diseases involving mucosa such as ulcerative colitis and celiac disease. Common denominator that could explain the development of IgA mesangial deposits in these diseases is unknown. It is known that the onset or exacerbation of IgA nephropathy is often preceded by a respiratory tract infection or infections at other locations a few days earlier. Level of serum IgA is elevated in about half of the patients with IgA nephropathy. In 40-50 % of cases, the clinical presentation is episodic hematuria (6-9). EB is also one of the cause of AA type renal amyloidosis. In amyloidosis, proteinuria, mainly albuminuria, occurs in the absence of hematuria (5). In our patient proteinuria was not detected. Renal biopsy is the gold standart for diagnosis of IgA nephropathy. However, we could not performed because of the patient's parent refusal. The patient might be suffering from mesangial IgA glomerulonephritis in the view of the repeated persistent macroscopic episodes of hematuria and raised serum IgA levels, especially pIgA.

Renal complications are associated with life-threatening problems in this inherited mechanobullous disease, because it may be impossible to obtain a vascular access. In English literature, a patient with recessive dystrophic EB who performed succesful peritoneal dialysis for 14 months was reported (11). Peritoneal dialysis catheter needs an approximately 10 cm tunnel under skin before entering the abdomen. Our patient had bullae, chronic ulcers, granulation tissue, and infection around the exit site of the hemodialysis catheter. We didn't insert peritoneal dialysis catheter because we thought that the patient could have similar skin reactions like hemodialysis catheter. The possibility of IgA nephropathy should be considered in patients with EB and patients should be periodically screened for IgA levels and hematuria.

References

1. Cuesta-Estellés G, Escobedo-Rumoroso JM, Garcés-López L, et al. Epidermolysis bullosa and chronic renal failure. *Nephrol Dial Transplant* 1998;13:2133-4.
2. Mann JF, Zeier M, Zilow E, et al. The spectrum of renal involvement in epidermolysis bullosa dystrophica hereditaria: report of two cases. *Am J Kidney Dis* 1988;11:437-41.
3. Reitelman C, Burbige KA, Mitchell ME, et al. The urological manifestations of epidermolysis bullosa. *J Urol* 1986;136:1320-2.
4. Yamada Y, Dekio S, Jidoi J, et al. Epidermolysis bullosa atrophicans generalisata mitis--report of a case with renal dysfunction. *J Dermatol* 1990;17:690-5.
5. Clarkson AR, Woodroffe AJ, Bannister KM, et al. The syndrome of IgA nephropathy. *Clin Nephrol* 1984;21:7-14.
6. Feehally J. Immune mechanisms in glomerular IgA deposition. *Nephrol Dial Transplant* 1988;3:361-78.
7. Van Es LA. Pathogenesis of IgA nephropathy. *Kidney Int* 1992;41:1720-9.
8. Gündüz K, Vatansever S, Türel A, et al. Recessive dystrophic epidermolysis bullosa complicated with nephrotic syndrome due to secondary amyloidosis. *Int J Dermatol* 2000;39:151-3.
9. Donadio JV Jr, Grande JP. Immunoglobulin A nephropathy: a clinical perspective. *J Am Soc Nephrol* 1997;8:1324-32.
10. Farhi D, Ingen-Housz-Oro S, Ducret F, et al. [Recessive dystrophic epidermolysis bullosa (Hallopeau-Siemens) with IgA nephropathy: 4 cases]. *Ann Dermatol Venereol* 2004;131:963-7.
11. Ahmadi J, Antaya R. Successful peritoneal dialysis in a patient with recessive dystrophic epidermolysis bullosa. *Pediatr Dermatol* 2007;24:589-90.