Non-Dysmorphic Haematuria in a Case of Berger's Disease (Focal Segmental Glomerulosclerosis) Associated with Acute Renal Failure

L.		Bolaños ^a
M.		Suárez ^b
P.		Iglesias ^c
E.		Vázquez ^e
A.		Peris ^d

Departments of ^aNephrology, ^bInternal Medicine, ^cPathology, ^dBiochemistry, ^eIMQ San Rafael, and ^ePathology, Hospital Juan Canalejo, La Coruña, Spain

Dr. Luis Bolaños Cea, Avda de Buenos Aires, nº 10-4º, E-15004 La Coruña (Spain)

Dear Sir,

The appearance of haematuria in urinary sediment suggests either urologic or nephrologic disease. According to the criteria of Fassett et al. [1], glomerular haematuria is revealed by the finding of at least 80% dysmorphic red cells in the urine, while non-glomerular haematuria can be identified when at least 80% of erythrocytes keep their normal shape. The reliability of this method in the study of microscopic haematuria was assessed by Birch et al. [2], which showed a sensitivity and specificity of over 90% in detecting nephrologic or urologic diseases.

We report the case of a 60-year-old male with type II diabetes, moderate alcohol intake and a previous episode of glomerulonephritis. He consulted us because of general discomfort, malaise, low-grade afternoon fever (37.5 °C) and macroscopic haematuria, during the past 20 days. Physical examination revealed: BP 155/95 mm Hg, temperature 37.4 °C and HR 95 beats/min. Mild paleness of the nails, moderate hepatomegaly and moderate bilateral soft oedemas were also observed. Mild renal failure (serum creatinine: 123.9 µmol/l) along with macroscopic haematuria (200-300 red blood cells/ high-power field) and proteinuria (1 g/24 h) were detected. After 4 or 5 days, a non-oliguric progressive renal failure became evident (serum creatinine: 522.2 µmol/l).

The biochemical tests and radiologic images done were not conclusive. A detailed examination of urinary sediment by an optical microscope revealed abundant non-dysmorphic erythrocytes, and this was con-

firmed by phase-contrast microscopy. Accordingly, the volume measurement of erythrocytes (Coulter) showed a unique population of erythrocytes similar to those found in the plasma.

Neither cystoscopy, bilateral retrograde pielography nor cytological examination showed any urologic anomaly. Subsequently, an open surgical renal biopsy disclosed focal segmental glomerulosclerosis with crescent formation (15% of the glomeruli) revealing a granular mesangial deposit of IgA and C3, and a diagnosis of Berger's disease was made.

The patient received oral steroids and tetracyclines and dialysis was done during 7 weeks. The patient partially recovered renal function, maintaining a serum creatinine value of around 221.3

μmol/l. Urinary sediment was again examined by optical microscopy about 2 months after the first examination, revealing a typical dysmorphic pattern of erythrocytes.

What is interesting in this case is the presence of non-dysmorphic haematuria in a typical glomerular entity such as IgA ne-phropathy. Although several studies [2, 3] have found that in a few patients with Berger's disease up to 20% of cells retain a normal appearance, pure non-dysmorphic haematuria has not been previously reported. Nevertheless, Van Iseghem et al. [4] have reported a non-glomerular pattern turning to dysmorphia accompanied by a lowering of urinary erythrocyte count after 10 days of follow-up in a case of an acute infectious (poststreptococcal) glomerulonephritis. Our

case reproduces this pattern, with erythrocytes recovering the dysmorphic appearance 2 months later, when the erythrocyte count was much lower. Both cases reinforce the possible importance of environmental tubular forces. As it has been proposed, the amount of erythrocytes may be a critical factor in the efficiency of these forces.

Although glomerular and non-glomerular patterns of erythrocyte appearance (by phase-contrast microscope) have been shown to have a high degree of sensitivity and specificity and result in an adequate diagnostic guidance for most of the patients, exceptions to the rule, as the case reported, should be taken into account along with the potential changes of these patterns.

References

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E-Mail karger@karger.ch Fax + 41 61 306 12 34

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