Bilateral optic neuropathy—a rare uraemic manifestation of end-stage renal disease

Sir,

A 17-year-old male presented with acute onset of painless blurring of right eye vision, with no other neurological symptoms. Ophthalmic examination revealed visual acuity of 6/36 on the right and 6/9 on the left. No nystagmus was present, and extraocular movements were intact. Relative afferent papillary defect was noted at the right eye. Fundoscopy revealed a right optic disc oedema and a pale left optic disc. The remainder of the examination was unremarkable. Computed tomography scan of the brain showed no mass lesion. Laboratory investigation revealed haemoglobin of 77 g/L, serum creatinine of 1312 μmol/L and urea of 34 mmol/L. Urinalysis showed the presence of protein and red cells. Ultrasonography of the kidneys showed bilateral cortical thinning with small renal sizes. The aetiology of the end-stage renal disease (ESRD) was attributed to undiagnosed chronic glomerulonephritis. Correlating uraemia with the disc oedema and loss of vision, he was diagnosed uraemic optic neuropathy (UON) and promptly started on haemodialysis followed by 2 weeks of corticosteroid treatment. His vision improved remarkably to 6/9 and 6/6 in the right and left eye, respectively.

UON is an extremely rare manifestation of renal failure, with few cases reported in nephrology literature. It is regarded as an interdisciplinary emergency as early recognition of this complication with immediate institution of treatment can potentially reverse the visual impairment and prevent long-term consequences [1]. The precise pathophysiology of UON is poorly understood [1, 2]. It has been suggested that dialyzable toxic metabolites are evidently related, as haemodialysis has resulted in improved optic nerve conductivity [2]. Knox *et al.* [3] was among the first who described UON, and the best response was observed in the patient managed by prompt use of both dialysis and oral corticosteroid therapy. Saini *et al.* [2] reported a case of UON which was unresponding to steroid but rapidly improved 6 h after the first haemodialysis. The timing of initiating haemodialysis is relevant to the outcome. Korzets *et al.* [4] reported a patient presented with bilateral UON on different occasions over an 18-month period; rapid improvement of visual acuity and visual field defects of one eye was noted after treatment, however, visual deficit of the previously affected eye was permanent. In the subsequent sporadic reports, haemodialysis, steroid or a combination of both have been used with varied outcomes and UON reversibility [1]. The dosage and duration of steroid therapy, however, has not been standardized.

In summary, UON can be the first manifestation of renal failure and should be considered in ESRD patients who complain of acute visual loss. Timely haemodialysis and corticosteroid therapy should be initiated under close collaborative management between nephrologist and ophthalmologist optimize clinical outcome in terms of visual recovery.

Conflict of interest statement. None declared.

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