Fax: +44 0207 937 6450
E-mail: charlie.sullivan@talk21.com

Sir,

Tubulo-interstitial nephritis and uveitis with bilateral optic disc oedema

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Tubulo-interstitial nephritis and uveitis (TINU) is an uncommon oculo-renal disorder of immune origin. It is more common in female adolescents (3:1 female to male ratio). The uveitis is typically bilateral, anterior, nongranulomatous and may occur before, simultaneously or after the onset of the nephritis. Renal involvement is in the form of acute interstitial nephritis (AIN) and it remains unclear whether it is secondary to infection, drug induced or idiopathic.[1] The nephritis is usually self-limited but the uveitis tends to become recurrent.[2,3] In these cases where there is no response to topical treatment, systemic steroids or even second-line immunosuppression may have a beneficial effect in controlling the anterior uveitis and improving renal function.[2,3]

Case report

A previously healthy 24-year-old female presented in eye casualty with a few weeks history of painless, hazy vision in both eyes. She did not have any significant past ocular or medical history and there was no history of consumption of any drugs, particularly antibiotics or nonsteroidal anti-inflammatories.

On examination, her best-corrected visual acuities were 6/18 and 6/6 in the right and left eyes respectively. Biomicroscopy revealed bilateral mild anterior uveitis. Intraocular pressures were 10 mmHg in each eye and there was no evidence of an afferent pupillary defect in either eye. Fundus examination showed bilaterally swollen and hyperaemic optic discs. Retinal veins were slightly dilated, but no retinal haemorrhages were present. There was no evidence of vitritis (Figure 1a).

Visual fields (central 24-2 SITA-FAST) confirmed bilaterally enlarged blind spots with no other visual field abnormality. Fluorescein angiography showed hyperfluorescence of both the optic discs with no dye leakage or vascular staining throughout the transit and there was no evidence of macular oedema in either eye (Figure 1b).

Her blood pressure was 120/80 mmHg, and there was no ankle oedema or lymphadenopathies. Urinalysis showed traces of protein and haematuria. Renal function showed a creatinine of 303 μmol/l, urea of 9.9 mmol/l and total protein of 90 g/l. She had mild microchromic normocytic anaemia, raised IgA and IgM with normal IgG. Her serum angiotensin converting enzyme was within normal limits. Serum analysis showed normal protein electrophoresis, weakly positive atypical ANCA (doubtful clinical significance), but negative p and c ANCA and normal antidsDNA antibodies. She also had a negative rheumatoid factor. Her that erythrocyte sedimentation rate was 99 mm/h. The chest X-ray revealed normal mediastinal contour and lungs were clear.

In view of her abnormal renal function she was referred to the renal team for further assessment. The patient underwent a renal biopsy, which showed diffuse interstitial inflammatory cell infiltrates, comprising predominantly lymphocytes with scattered eosinophils. Glomeruli appeared normal. There was no evidence of vasculitis and a single granuloma was seen (Figure 2).

Figure 1 (a) Colour photo showing bilateral disc swelling. (b) Fluorescein angiography demonstrating late leakage with normal retinal vasculature and maculae.

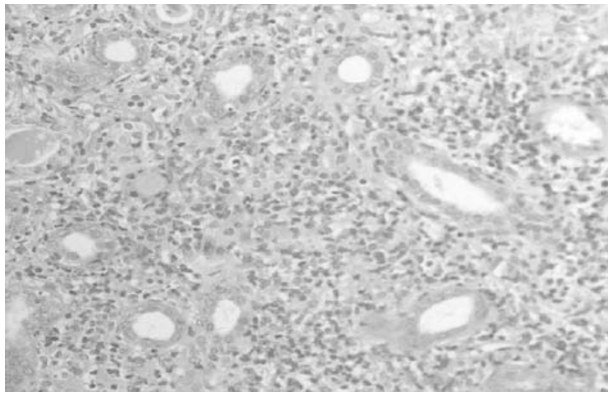

Figure 2 Haematoxylin and Eosin of a section of renal biopsy showing diffuse interstitial inflammatory cells composed of predominantly lymphocytes with scattered eosinophils.

Immunocytochemistry for Ig A, Ig G, Ig M and C3 showed no specific-disease staining. These findings were compatible with acute interstitial tubulo-nephritis. The absence of multiple granuloma on renal histology, normal chest X-ray, and negative p or c ANCA analysis excludes the possibility of Wegener's granulomatosis. She was started on G Dexamethasone 0.1% four times daily in each eye and 60 mg of oral Prednisolone once daily. On this regime, she showed a quick response, both clinically and in her biochemical parameters. She was on a reducing dose of oral steroids for 6 months when there was an episode of recurrence following complete withdrawal of oral steroids. The recurrence was controlled by increasing the systemic steroids up to 60 mg and then gradually tapering it over 9 months.

At 18 months after she first presented, her renal function showed a steady recovery and her vision and intraocular inflammation and disc swelling resolved completely.

Comment

TINU remains an uncommon syndrome. First described by Dobrin 27 years ago, this condition has associated features of both tubulo-interstitial nephritis and anterior uveitis (AU).[3–7] Mandeville *et al*[1] have set out the diagnostic criteria for 'definite' TINU, which requires the presence of histopathologically confirmed AIN and typical uveitis.[1] There have been multiple reports in the literature with TINU syndrome-associated posterior segment involvement.[8–10]

We are aware of only one previous report of TINU presenting with bilateral optic disc oedema, in which the aetiology was thought to be drug induced.[11] Our case is consistent with the diagnosis of 'definite TINU syndrome' as the AIN was confirmed histopathologically and the patient had typical bilateral uveitis. In our patient, the optic disc swelling and anterior uveitis had a parallel clinical course all along from the time of initial clinical presentation. The fact that the optic disc swelling and uveitis responded well to steroid treatment indicates that the disc swelling was secondary to anterior and possible subclinical intermediate uveitis. Cell-mediated immune responses, autoantibody production, and the role of HLA molecules have been implicated in the pathogenesis of TINU syndrome.[12] The optic disc oedema may be the result of nonspecific vasculitis of the ciliary vessels with increased vascular permeability and secondary retinal venous dilatation. The absence of multiple granuloma on renal histology, normal chest X-ray, and negative p or c ANCA analysis excludes the possibility of Wegener's granulomatosis.

TINU syndrome is a distinct clinical entity that may be under recognised and may account for some causes of unexplained chronic or recurrent AU. It is important for ophthalmologists, nephrologists, and primary-care physicians to be aware of this disorder to ensure early diagnosis and appropriate treatment.

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V Menezo and R Ram

Department of Ophthalmology
The Royal Glamorgan Hospital
Ynysmaerdy Llantrisant CF72 8XR, UK

Correspondence: Raghu Ram
Tel : +44 1443 443443
Fax: +44 1443 443248
E-mail: raghumala@btinternet.com