appointment type (new *vs* follow-up) and four subspecialities: glaucoma, adult general (including post-operative cataracts), paediatric, and adult motility (including neuro-ophthalmology). The face-to-face patient contact time was measured to the nearest second. Results are expressed in minutes as Mean ± SD. Appointment type was compared using a paired two-tailed *t*-test and subspecialties were compared using ANOVA. The level of significance was taken as $P<0.05$.

Results are summarised in Table 1. There was a statistically significant difference in appointment duration between new and follow-up appointments ($t=2.64$, $P<0.01$) and between adult motility patients compared with the other three subspecialties ($P<0.01$). When new appointments were compared by subspecialty, adult motility appointments were statistically longer than paediatric and adult general visits ($P<0.05$). Also, for follow-up appointments, there was a statistical difference between adult glaucoma and adult motility patients ($P<0.05$).

These data indicate that the mean appointment time does differ between type and subspecialty. There were limitations of our study including the single-doctor nature of the assessment, smaller number of patients seen in certain groups, the limited number of subspecialties, and non-inclusion of time required to scan the notes or dictate letters.

We conclude that appointment duration in the eye clinic is not the same across different ophthalmic subspecialties and should be considered in any outpatient service reconfiguration to ensure the continued quality and safety of patient care.

Table 1 Summary of appointment duration by type and subspecialty in minutes (mean ± SD)

Type of appointment	*n*	*Mean ± SD (min)*
New	163	14.0 ± 5.6
Follow-up	201	12.4 ± 5.7
Subspecialty		
Glaucoma	55	11.2 ± 5.0
Adult general	53	12.7 ± 6.2
Paediatric	208	13.0 ± 5.4
Adult motility	48	16.3 ± 6.0
New appointments by subspecialty		
Glaucoma	9	15.5 ± 3.8
Adult general	18	12.4 ± 6.7
Paediatric	109	13.2 ± 4.9
Adult motility	27	17.8 ± 6.5
Follow-up appointments by subspecialty		
Glaucoma	46	10.4 ± 4.9
Adult general	35	12.8 ± 6.1
Paediatric	99	12.7 ± 5.9
Adult motility	21	14.5 ± 4.8

Conflict of interest

The authors declare no conflict of interest.

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Sir,

Severe bilateral anterior uveitis secondary to giardiasis, initially misdiagnosed as a side effect of metronidazole

Giardiasis is a common worldwide cause of gastroenteritis. We report a case complicated by severe bilateral anterior uveitis, discussing possible mechanisms of ocular involvement.

Case report

A 57-year-old Caucasian female presented with painful visual loss in her left eye. Two weeks previously, she had developed diarrhoea and abdominal pain after returning from India. Microscopy of a stool sample demonstrated cysts of *Giardia lamblia*, but no evidence of *Shigella spp*, *Campylobacter spp*, *Salmonella spp*, or *Escherichia coli spp*. There was no past ophthalmic or other medical history. Oral metronidazole (400 mg t.i.d) was commenced by her general practitioner, but abandoned after she developed blurred vision which was presumed to be a side effect. However, ocular symptoms progressed despite cessation of the drug.

Visual acuity was 6/5 OD, 'count fingers' OS. There was marked AC activity with posterior synechiae, but no fibrin, hypopyon, or iris nodules. Vitritis obscured fundal details and rendered OCT imaging poor, but there was no evidence of cystoid macular oedema or vasculitis. The fellow eye was normal. Other than gastrointestinal upset, there were no systemic features—specifically no rash, arthritis, or conjunctivitis. Acute anterior uveitis was diagnosed and treated with hourly g. dexamethasone and g. cyclopentolate t.i.d. Oral metronidazole was restarted.

Four days later, after the patient had again stopped taking the metronidazole—still concerned it was causing

her visual symptoms—acuity in her fellow eye decreased to 'hand movements'. Bilateral anterior uveitis had developed, presumed secondary to giardiasis in the absence of other known risk factors. With a tapering course of topical steroids and a complete 7-day course of metronidazole, vision improved to 6/9 OU over 3 weeks. Neither systemic nor periocular injections of steroid were used due to the adequate response to topical steroids and oral antiprotozoal treatment. HLA-B27 status was not checked due to the confirmed diagnosis of giardiasis and the fact her condition improved on specific anti-*Giardia* treatment. After 3.5 months of follow-up, VA remained stable and the patient was discharged.

Comment

Protozoan infection with *G. lamblia* is characterised by gastroenteritis, but extraintestinal signs are frequent.[1,2] Ocular manifestations are unusual but include uveitis, retinal haemorrhages, and 'salt and pepper' retinal degeneration.[1]

Extraintestinal manifestations are considered immunologically mediated, with inflammatory infiltrates having been isolated from urticarial lesions and circulating immune complexes found in patients with ocular involvement.[2,3] Extraintestinal manifestations resolve with specific anti-*Giardia* therapy, other treatments being purely supportive.

While the mechanism of ocular involvement remains unclear, immunological parallels may exist with other gastroenteritides and inflammatory disorders. Enteric inflammation may lead to uveitis via a triggering agent that crosses intestinal mucosa.[4] Molecular mimicry and HLA-B27 have also been implicated, whereby antigenic cross-reactivity results in antibody production against host cells.[4] Similarities may exist with ocular toxoplasmosis, another protozoon that causes tissue destruction via autoimmune hypersensitivity and parasite-mediated host-cell lysis.

Appropriate anti-*Giardia* treatment is important in preventing ocular complications. Metronidazole can produce ophthalmic side effects including transient myopia,[5] so this may be considered in patients with visual disturbance taking the drug. Furthermore, anti-*Giardia* treatment may lead to a temporary worsening of extraintestinal manifestations as dying parasites release antigens. However, ophthalmic opinion should be sought if considering treatment cessation, as incomplete treatment carries considerable risks.

Conflict of interest

The authors declare no conflict of interest.

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