Multimodal Imaging in Presumed Tuberculous Serpiginous-like Choroiditis

The University of Manchester

Haoyu Wang [1]; Tariq Aslam [1-3]; Nicholas P Jones [1-3]; Laura R Steeples [1-3]

1. University of Manchester, UK; 2. Manchester Royal Eye Hospital, UK;
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Introduction

We report imaging findings in a patient with presumed tuberculous serpiginous-like choroiditis (TB-SLC) and present findings in active, progressive disease and subsequent stabilisation and transition to inactive disease following systemic corticosteroid and anti-TB therapy.

Patient Case

- 62 year-old Caucasian male with 6-week history of unilateral photopsia and scotoma in his right temporal visual field.
- Between the first presentation and review in our uveitis service, 1-month later, the lesion showed rapid progression and contiguous extension (See Figures 1A and 1B and colour photograph (2B)) .

Examination and management: BCVA 0.0 (LogMAR) in both eyes.

- Serpiginous-like choroiditis adjacent to the optic disc with clinically active edge inferiorly (Figure 1A).
- Tuberculin skin test (12 mm induration) and QuantiFERON Gold were both positive; other investigations were negative.
- Treated with 6-month course of anti-TB therapy (Voractiv followed by Rifinah) and oral prednisolone (80mg/day tapered to 5mg/day at latest review) with clinical improvement.

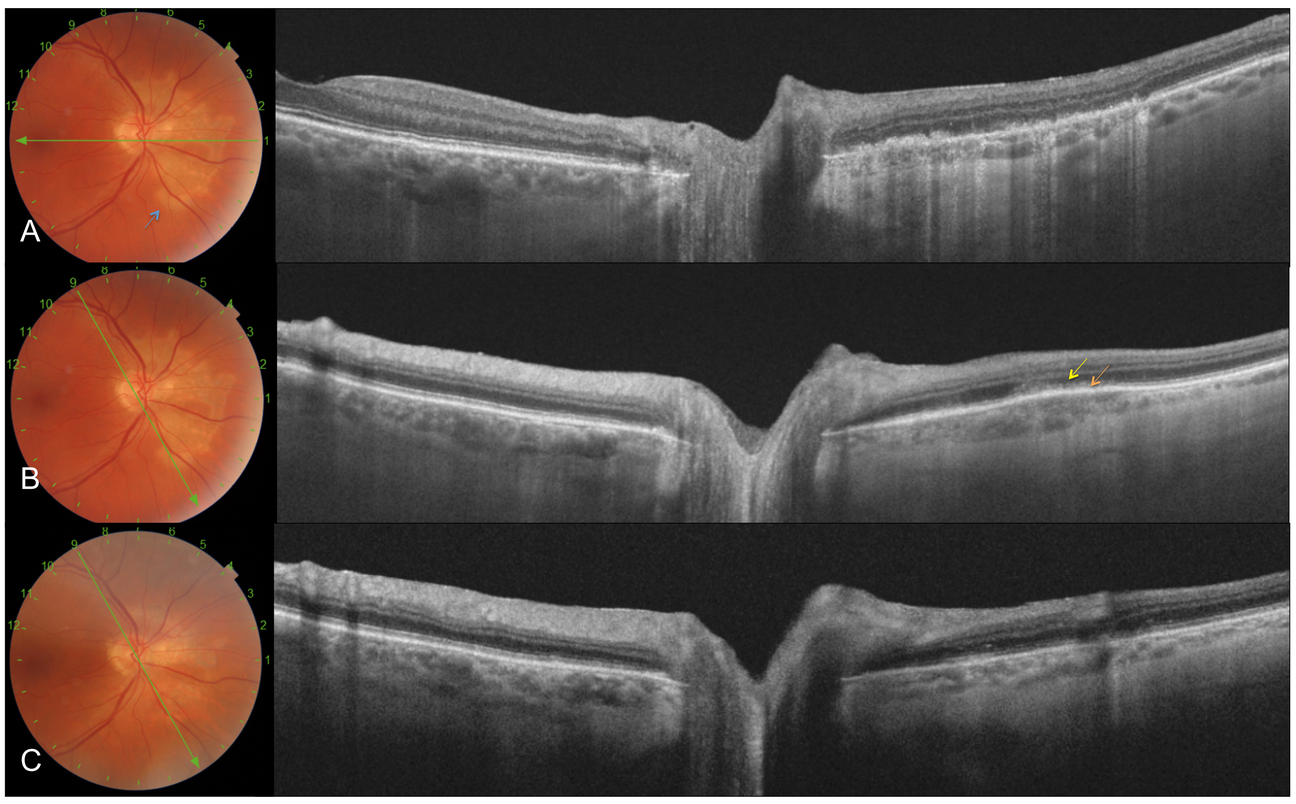


Figure 2: **Colour photographs** of lesion with orientation of **SS-OCT** images indicated.
A At 1 month within area of scarring with irregularity of the ellipsoid zone (EZ), hyperreflectivities within the retinal pigment epithelium (RPE), choroidal attenuation & outer retinal atrophy. Contrasted by normal retina & choroid temporal to the optic disc. The active lesion edge is marked (blue arrow).
B At 1 month: at advancing active edge with **hyperreflectivity of EZ (yellow arrow), RPE elevation (orange arrow) and choroidal thickening**. **C** at 8 months at same location as B, in inactive disease with resolution of RPE elevation, outer retinal atrophy and some restoration of outer retinal structures. This correlates with clinical improvement, FAF evolution (1E) & OCTA restoration of flow (4D).

Results

Multimodal imaging provided a variety of useful clinical markers

- Demonstration of disease activity, progression and transition including serial fundus autofluorescence changes (FAF, Figure 1).
- OCT-Angiography (OCTA) delineation of defined areas of non-perfusion to the level of choriocapillaris and subsequent demonstration of remodeling.
- Swept source-OCT (SS-OCT) markers of active and inactive disease (Figure 2).
- OCTA detection of CNVM in this condition has previously been reported.

Figure 1: Evolution of FAF in time from active progressive disease to inactive state (at 8 months). **A** and **B**: hyperautofluorescent active lesion with hypoautofluourescent halo around lesion edge. **C** and **D:** transitional state with lesion mottled hyperautoflourescence; **E**: defined hypoautofluorescent lesion with minimal residual hyperautofluorescence consistent with an inactive lesion.

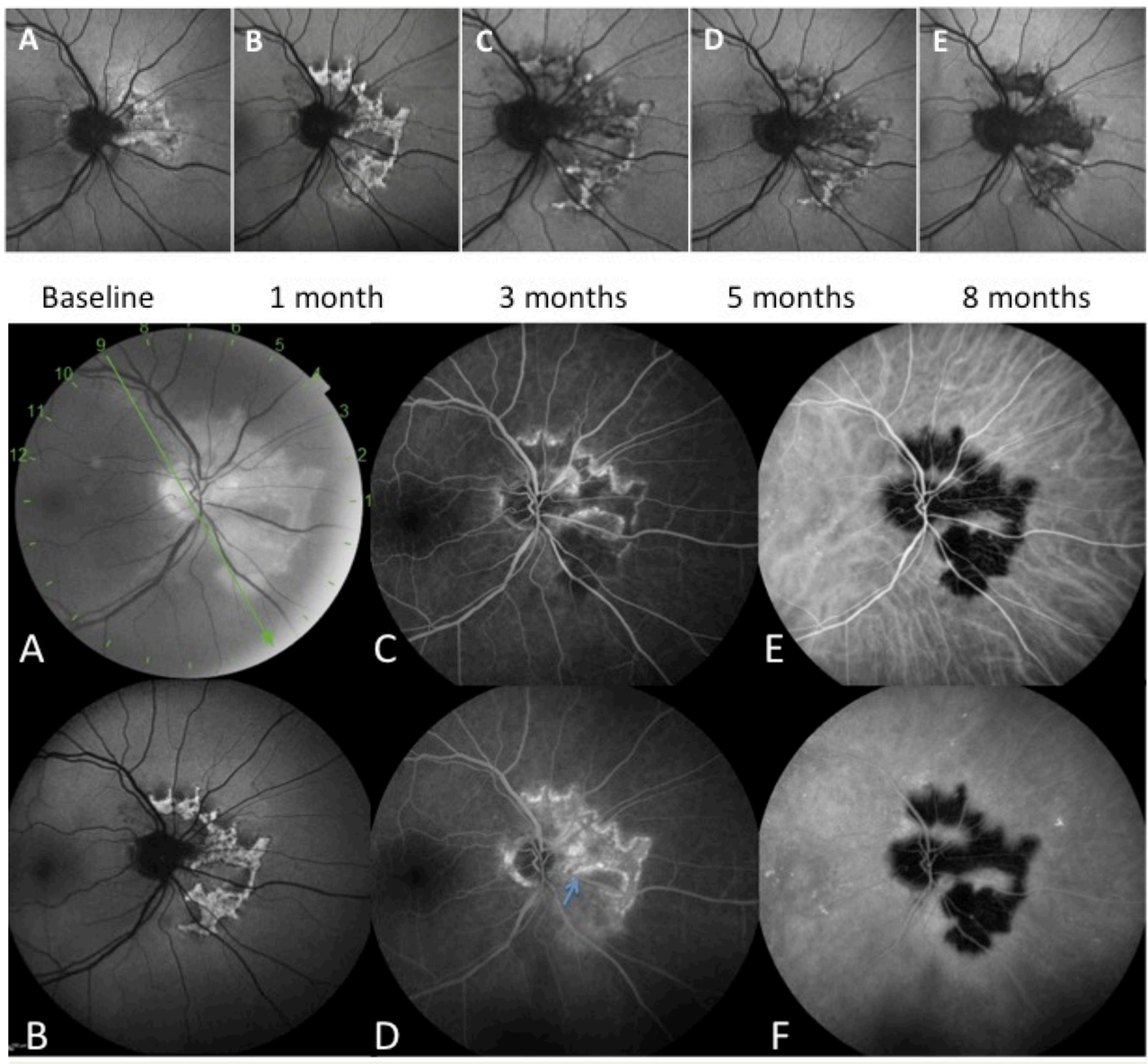
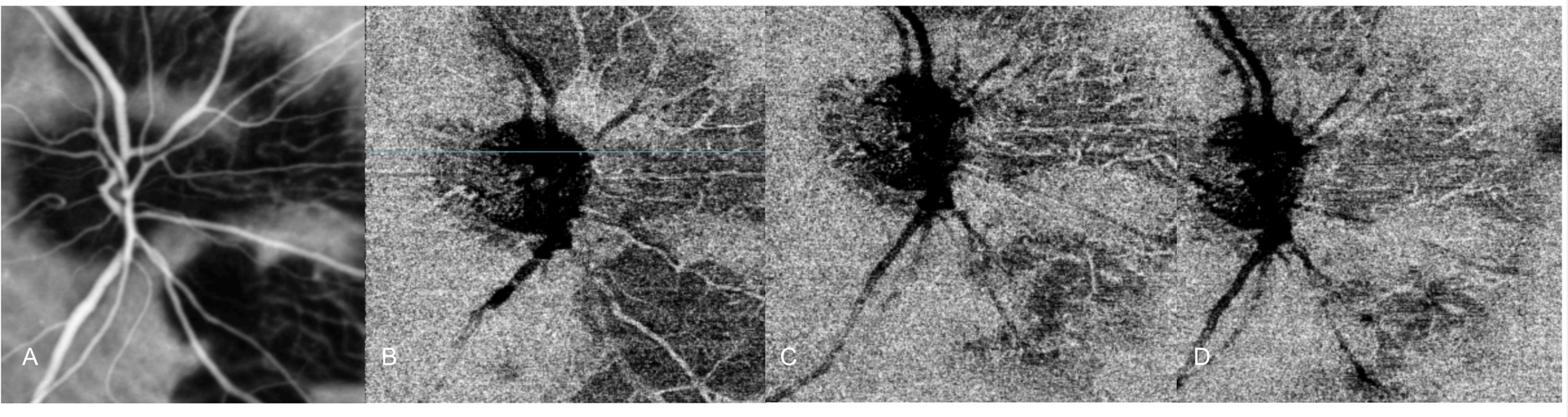


Figure 3: Images from first visit in our service (1month): **A** Red free imaging; **B** FAF indicates active lesion with diffuse hyperautofluorescence and surrounding hypoautofluorescence.**C** Early FFA with hypofluorescence and **D** late FFA with subsequent leakage consistent with active area of lesion (blue arrow); **E and F** early and late ICG hypocyanescence indicative of active choroidal disease.



ICG Month 1 | OCTA Month 1 | OCTA Month 3 | OCTA Month 7

Figure 4: OCTA at 1 month (**B**) suggests inflammatory vascular occlusive pathology in the acute stage with defined areas of **altered flow and non-perfusion at the level of the choriocapillaris** that corresponded with areas of hypocyanescence on ICGA (**A**) .
C-D: Progressive evolution with **sequential improvement in flow and reduction in size of the non-perfused areas** was noted indicating vascular remodeling in the choriocapillaris.

Conclusions

- SS-OCT and OCTA are useful non-invasive diagnostic and follow up imaging modalities for TB-SLC.
- OCTA suggests inflammatory vascular occlusive pathology at the level of the choriocapillaris in acute phase of TB-SLC and can be used to demonstrate disease transition and evidence of vascular remodelling.