

The Art of Maintaining ART

A socially challenging case

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INTRODUCTION

The advent of highly active antiretroviral therapy has resulted in improved virological, immunological, and clinical outcomes in individuals infected with HIV. Improved outcomes however, require scrupulous adherence to therapy. We present the case of a man with advanced HIV disease who has outlived expectations on a number of occasions despite life-threatening opportunistic infections secondary to poor medication compliance complicated by cognitive impairment and social instability.

CASE DESCRIPTION

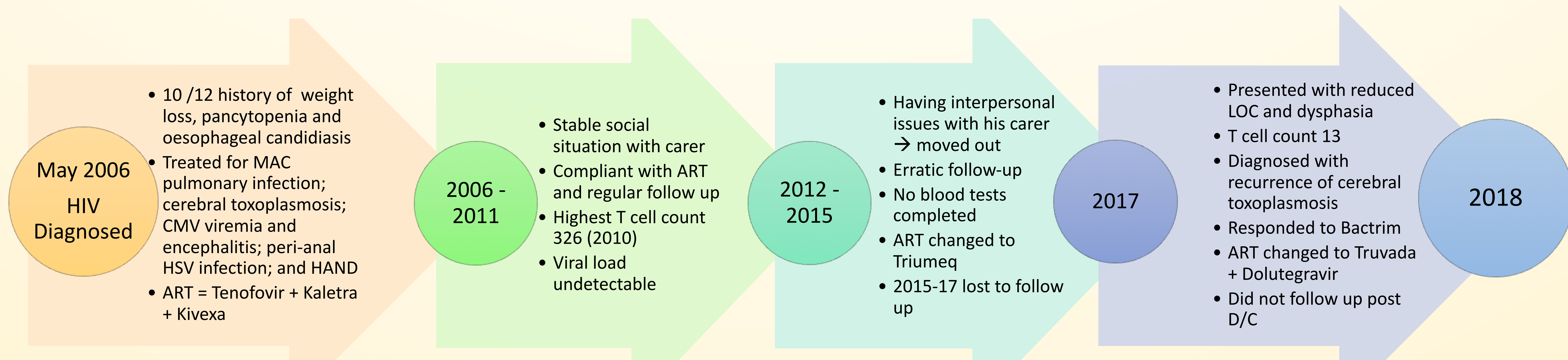


Figure 1: Timeline of patient's treatment course since diagnosis of HIV in 2006 demonstrating the impact his social situation has had on his ability to engage with medical services.

A 55yr old intellectually disabled, socially isolated male, with advanced HIV who has had recurrent life-threatening opportunistic infections secondary to poor medication compliance.

He presented in early 2018 with reduced level of consciousness, dysphasia and right arm monoplegia having been lost to follow for the preceding 10 months. Blood tests revealed a T cell count of 13 and a viral load of >36000 copies/mL. CT and MRI (figure 2) showed multiple ring enhancing lesions with associated cerebral oedema, and brain biopsy was consistent with *Toxoplasmosis gondii* on histopathology (Figure 3) and PCR. He was commenced on Pyrimethamine 75mg daily and Sulfadiazine 1500mg QID, and his antiretroviral medications, (Truvada + Dolutegravir) were restarted. On discussion with the patient it became clear that although he was having supervised medication administration he had been committing subterfuge in order not to take it. He responded well to inpatient therapy and was discharged home.

Prior to discharge changes were made to the patient's living arrangements in order to better facilitate care. He and his carer moved from a rural property to a suburban area. ADAHPS continue to follow the patient, and ongoing direct supervision of therapy was arranged through Nepean Hospital's Hospital in the Home service.

DISCUSSION

In this case it is clear this patient's social situation and intellectual disability, compounded by recurrent cerebral infections, have had considerable impact on his adherence to therapy. Maintaining adherence to ART to mitigate any further cognitive problems is of utmost importance in this patient in order to maintain his independence in the community. We have utilised an APAHPS case worker and direct supervision of therapy in an attempt to provide more holistic care and ensure this patient's ongoing engagement with medical services. Randomised controlled trials on directly observed therapy (DOT) have shown mixed results, nevertheless in meta-analysis DOT has a positive effect on virologic suppression and CD4 count when targeting individuals with greater risk of non-adherence and when delivering intervention that maximizes participant convenience¹. Unfortunately these positive results appear short lived, with effects waning after discontinuation of DOT². In this patient's case, having failed community supervised therapy, medically supervised therapy appeared to be the only option left to maintain this patient on ART. Long term it is likely the patient will need to be placed in a residential facility, until then we will continue to support him through our hospital in the home service.

References:

- Hart JE, Jeon CY, Ivers LC, et al. Effect of Directly Observed Therapy for Highly Active Antiretroviral Therapy on Virologic, Immunologic, and Adherence Outcomes: A Meta-Analysis and Systematic Review. *Journal of acquired immune deficiency syndromes (1999)*. 2010;54(2):167-179. doi:10.1097/QAI.0b013e3181d9a330.
- Gaur AH, Belzer M, Britto P, et al. Directly Observed Therapy (DOT) for Nonadherent HIV-Infected Youth: Lessons Learned, Challenges Ahead. *AIDS Research and Human Retroviruses*. 2010;26(9):947-953. doi:10.1089/aid.2010.0008.

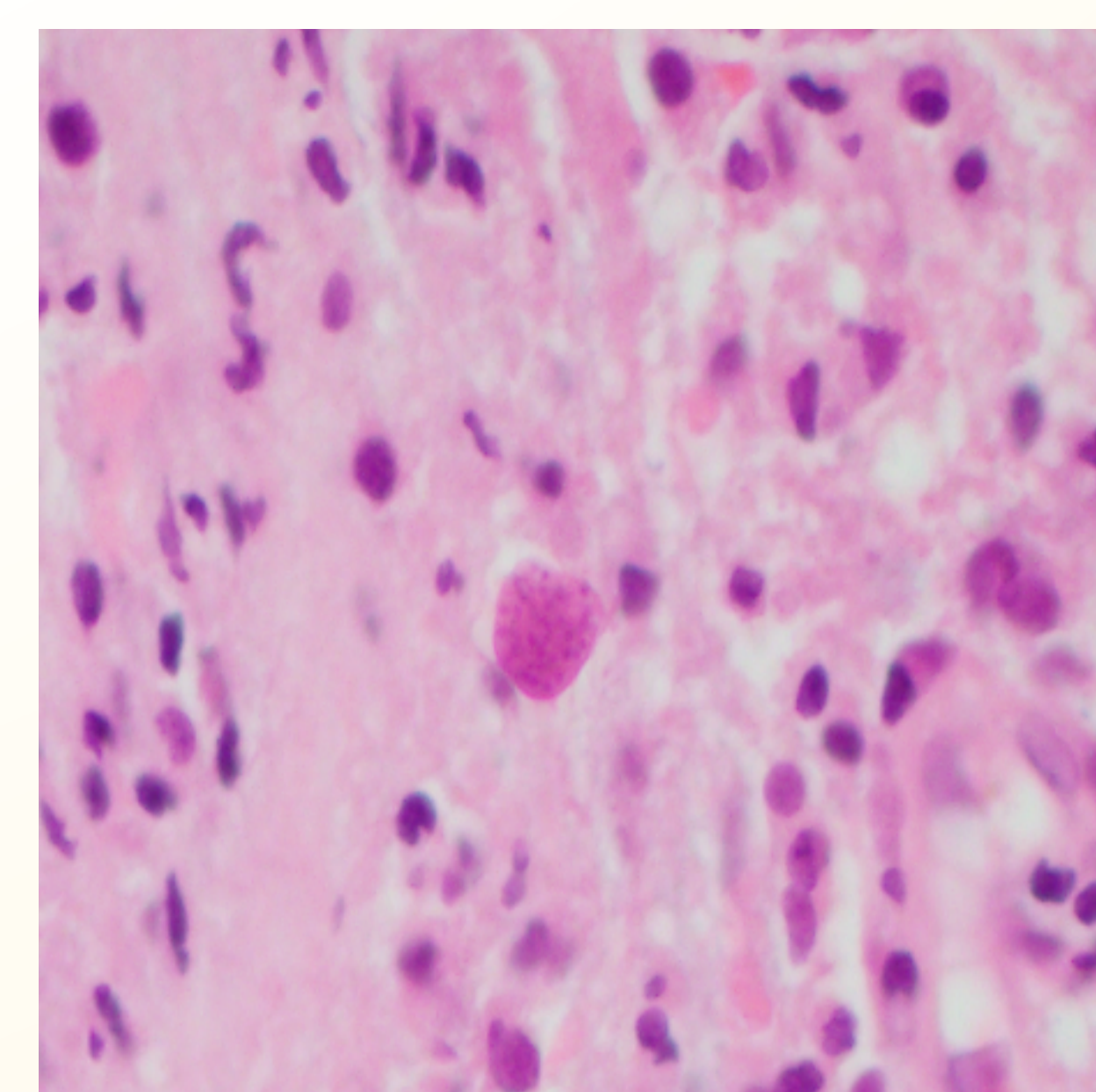


Figure 3: H&E of brain tissue showing bradyzoites in a tissue cyst with surrounding lymphoid cells.

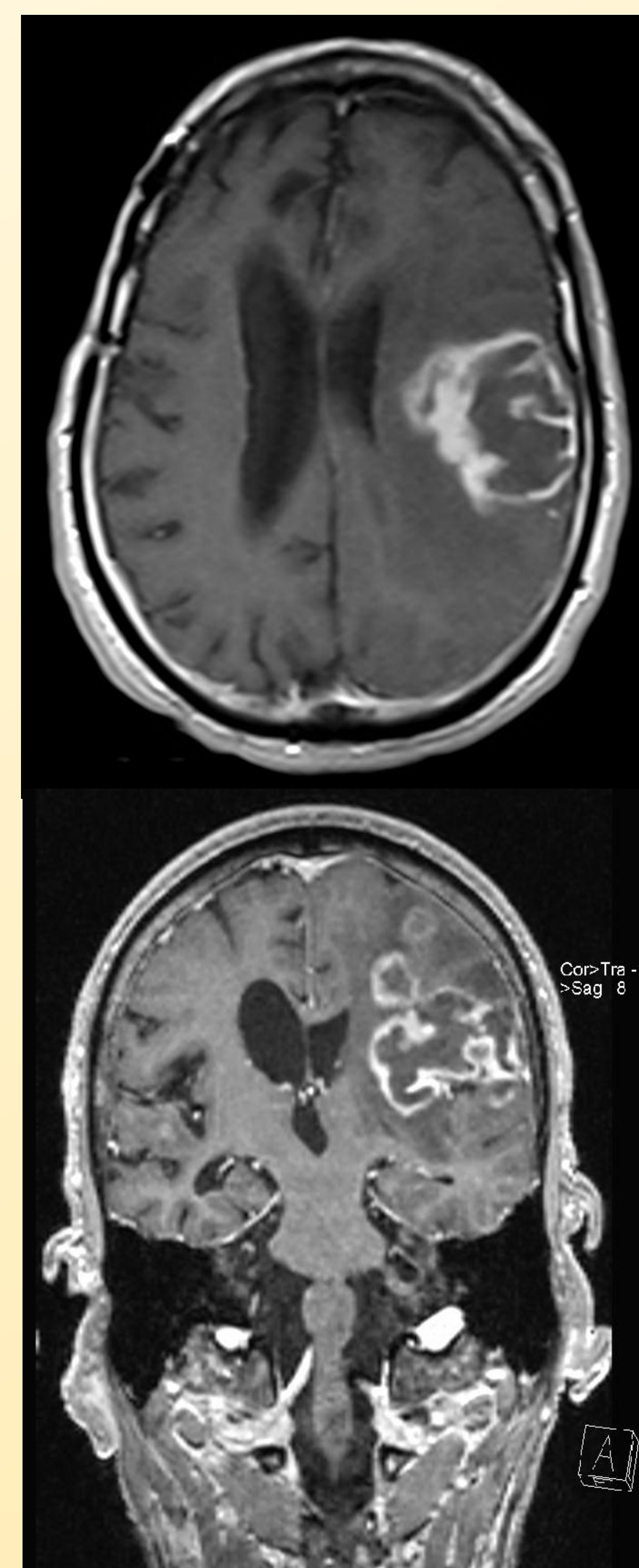


Figure 2: MRI from recent admission with recurrence of cerebral toxoplasmosis revealing multiple ring enhancing lesions associated with perilesional oedema.