• Inclusions predominantly in endothelial cells.
• Immunostaining greater sensitivity than H&E alone.
CMV inclusions are often present in a very patchy distribution

→ Carefully examine all levels
CMV reactivation in UC

- Looked at resection specimens from UC patients (H&E and CMV immuno)
  - Severe UC 25%
  - Refractory 8.3%
  - Dysplasia (control) 0%

CMV reactivation in UC

- Looked at resection specimens from UC patients (H&E and CMV immuno)
  - Severe UC: 25%
  - Refractory: 8.3%
  - Dysplasia (control): 0%

→ Association of CMV with active disease.

Infective intestinal pathology in the immunocompromised patient.
Diarrhoea post BMT
CMV re-activation in an immunocompromised patient
Appendicitis
? Appendicitis
CMV appendicitis – AIDS patient
BMT patient colonic biopsies - ?GVHD
Adenovirus colitis in immunocompromised patient
EBV-associated ulceration
Fungal colitis

- Typically neutropaenic patients (chemotherapy for haematological malignancies).
- Mucor and aspergillus species
UK HIV/AIDs population

- Men who have sex with men (MSM).
- Intravenous drug abusers.
- Migrants from high risk countries.
- Blood transfusion / blood product recipients.
UK HIV/AIDS population

- Men who have sex with men (MSM).
- Intravenous drug abusers.
- Migrants from high risk countries.
- Blood transfusion / blood product recipients.

- Most HIV+ve cases will be stable on treatment but some patients still get AIDS:
  - Health migrants.
  - Unknown HIV infection.
  - HIV patients who have failed HAART.
CD4 count and opportunistic infections

- >500 cells/mm³: Not considered at risk.
- 500 – 200 cells/mm³:
  - Candidiasis
  - Kaposi sarcoma
- 200 – 100 cells/mm³:
  - Pneumocystis, Histoplasmosis and coccidiodomycosis.
  - Progressive Multifocal Leukoencephalopathy (PML)
- 100 – 50 cells/mm³:
  - Toxoplasmosis, Cryptococcosis and Cryptosporidiosis.

Patient’s with AIDS often have a CD4 count ≈50 cells per mm³
Mycobacterium avium complex
Visceral Leishmaniasis

- *Leishmania donovani*
- Amastigotes 1.5 – 3μm
Histoplasmosis

- *Histoplasma capsulatum*
- 2-4μm yeast form
- Immunocompromised and immunocompetent.
Cryptococcosis

- *Cryptococcus neoformans*
- 4 – 7µm (+ capsule 3-5µm)
Cryptosporidium in colon
Microsporidiosis

- Now considered to be fungi
- *Enterocytozoon bieneusi* + others.
- Difficult to see on H&E
- In enterocytes - not basophilic blobs in goblet cells!
- Warthin-Starry staining +/- polarized light (spores polarize).
- PCR-based stool assay.

*ANDREW S. FIELD. Pathology (2002) 34, pp. 21–35*
What is the most frequent GI infection in western HIV patients?
What is the most frequent GI infection in western HIV patients?

Helicobacter-associated gastritis
Parasitic infections
Giardiasis
Amoebiasis
(Entamoeba histolytica)
Schistosomiasis (S. Haematobium)
Strongyloides stercoralis

- Nematode
- Predominantly infects patients in tropical and subtropical areas.
- May get fatal systemic dissemination in AIDs
Pinworm
*Enterobious Vermicularis*
Diphyllobothrium latum
Conclusions

• Most cases of infective colitis can be differentiated from IBD on routine H&E sections.

• Atypical infective colitis can mimic IBD.

• Consider STDs in the differential diagnosis of proctitis in MSM patients.

• In refractory UC exclude a superimposed infective colitis.

• In the immunocompromised patient there may be little in the way of an inflammatory response.

• In known HIV +ve patients check the CD4 count.