INFECTION PRECAUTIONS

Draft Guidelines on autopsy practice: Precautions for high-risk infectious autopsies

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Yellow fever – post-vaccination

HIV + TB

[Ruby & Ula Mahadeva]

Health & Safety

HG 2 & 3 infections

- HG2 – can cause human disease, unlikely to spread in community, treatable and preventable
- HG3 – severe human disease, may spread to community, “usually effective prophylaxis or treatment available”

HG 4 infections

- Cause severe human disease, likely to spread in community, usually no prophylaxis or treatment available

Health & Safety

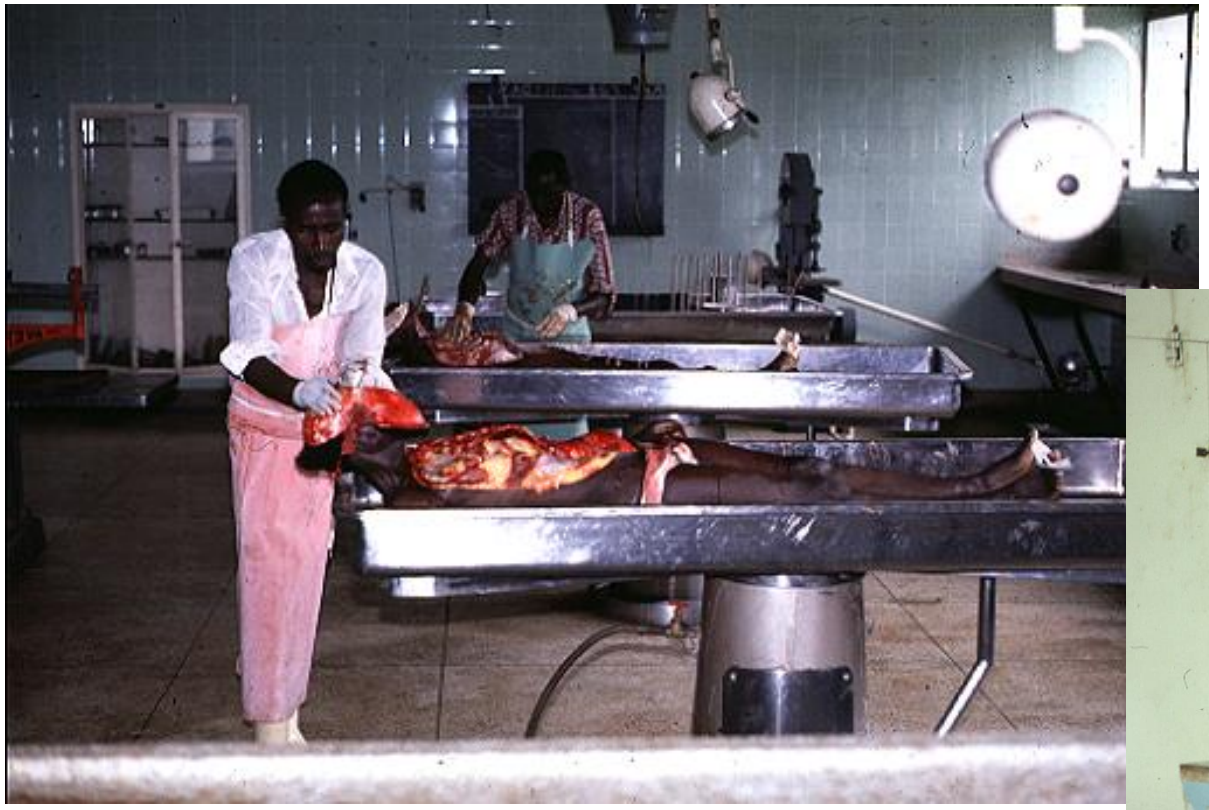
HG 2 & 3 infections

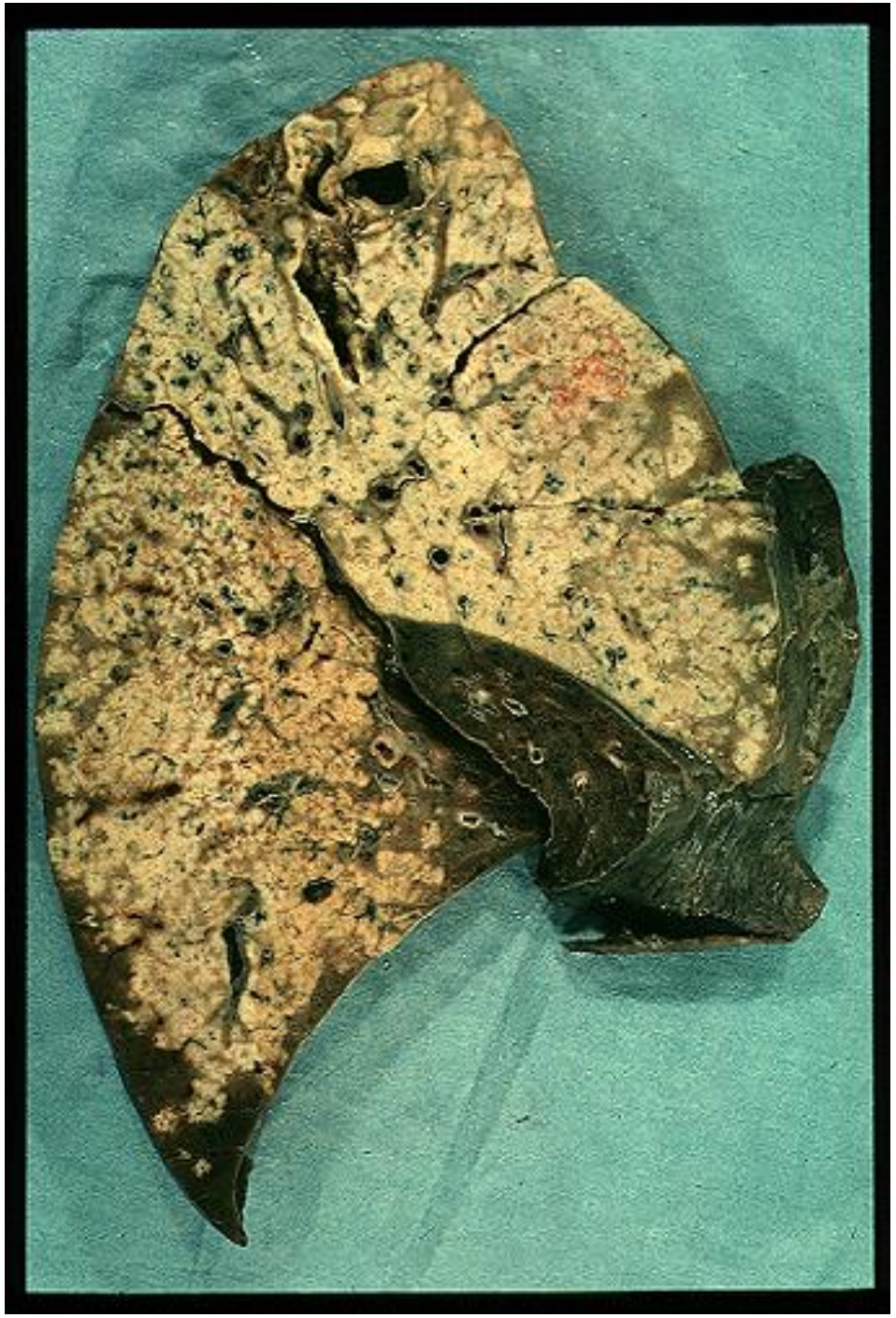
- HG2 – Streptococcus spp, Leptospira, Nocardia, Legionella, syphilis, influenzas.
- HG3 – Rabies, Yellow fever, HIV, hepatitis B/C/D/E, MERS, dengue; anthrax, tuberculosis, plague; TSEs; imported mycoses.
- ***These are manageable***

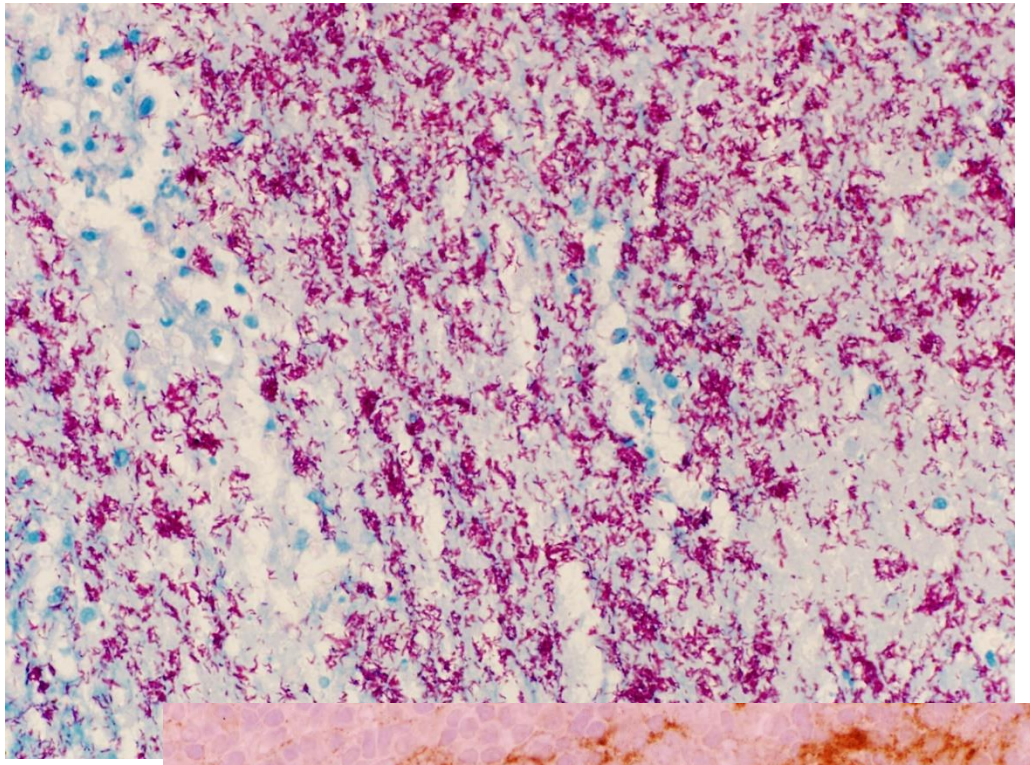
HG 4 infections

- All viral infections – Lassa, Ebola, Marburg, smallpox, Congo-Crimea
- *Do not get involved in these – autopsies effectively banned in UK.*

Mortuaries in Africa – HIV/AIDS in the 1980s & 1990s







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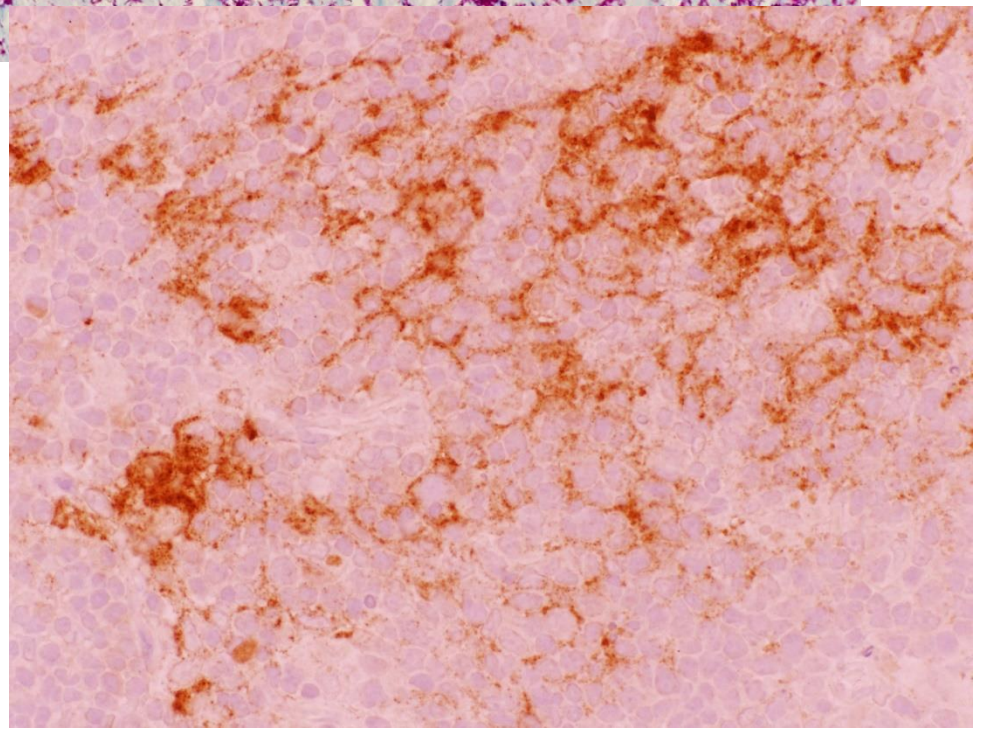


HIVp24

Brief history of RCPath autopsy guidelines

- On website: “Guidelines on autopsy practice, including best practice scenarios, from May 2010. Please note: a major programme is underway in 2016-17 to review all these guidelines - see the Autopsy guidelines page”.
- Early 1990s: short pamphlets, conflating consented & medico-legal
- 1998
  - hepatitis mortuary story
  - Histopath SAC – chair James Underwood
- 2002 – *Guidelines on autopsy practice* document
  - Steven Leadbeatter, Roger Start, Jem Berry, X McKenzie

The important issues – *our view, but what have we left out or over-egged?*

1. Suitable mortuaries and APTs
2. Suitable pathologists
3. Anticipation and SOPs for safe practice
4. Reasonable PPE
5. Diagnostic pathways to evaluate IDs in cadavers
6. Managing accidents

- Implicit agenda: to promote specialist autopsy pathology *wrt* mortuary development, APTs and pathologists

1. Suitable mortuaries and APTs

- Can all mortuaries cope with all infections?
- Mortuary design, air flows, hygiene, accreditation
- PPE available on site
- Availability of specimen & blood culture bottles
- Access to microbiology and histology laboratories
- APT experience and confidence
- Is there rapidly available OH advice in the event of accidents?

2. Suitable pathologists

- Do you know about IDs and how to diagnose them?

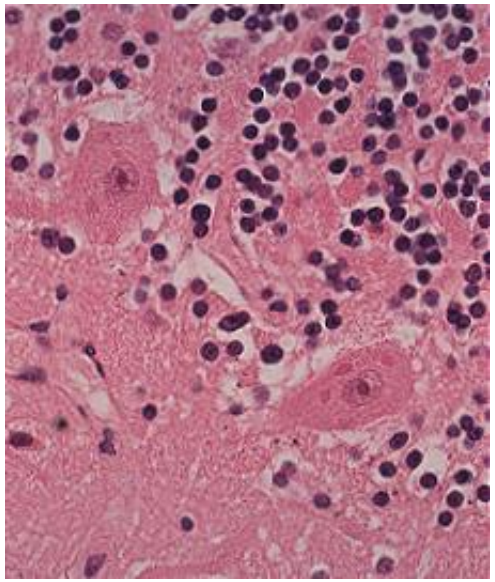
- Do you have access to appropriate histological special stains and microbiology diagnostics?

Issues 1 & 2 [point 4.4 in the Draft]

- If all the boxes are ticked, go ahead
- If mortuary/APTs not prepared – refer case elsewhere
- If mortuary/APTs prepared, but pathologist not experienced (*or not prepared to learn*) –
  - Import someone who does know what to do
  - Or refer the case elsewhere

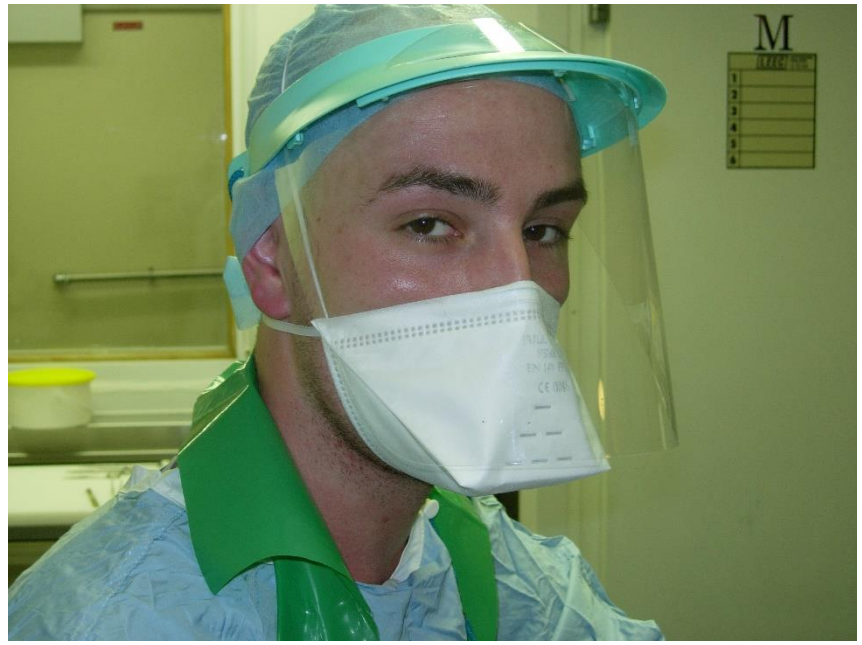
3. Anticipation and SOPs for safe practice

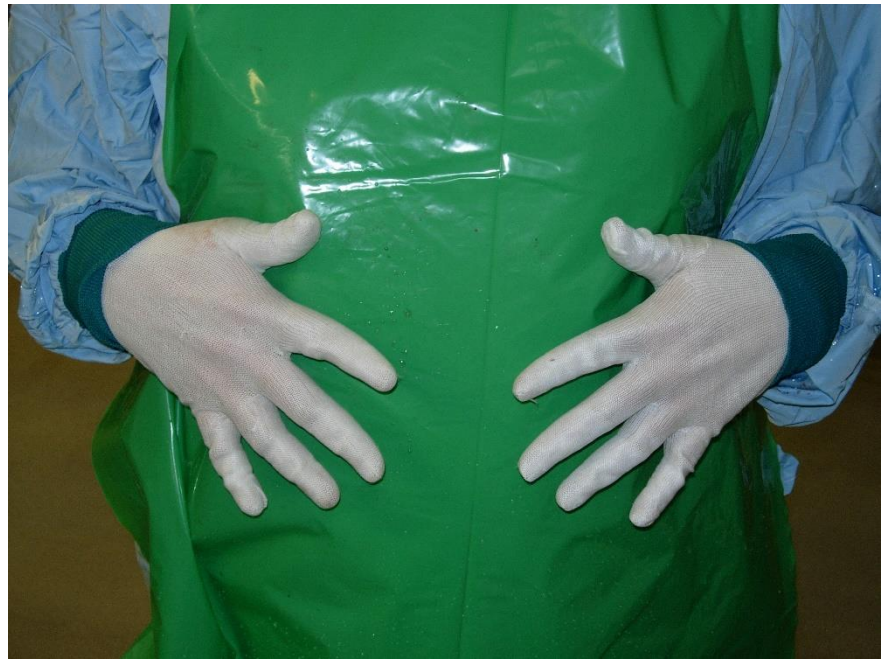
- A good thing about accreditation
- Levels of experience of APTs and trainee pathologists
- Specification of PPE levels
- Rules of behaviour at the mortuary table and dissecting bench
  - Blunt-end PM40 blades
- Vaccinations for staff
  - Resident APTs
  - Resident pathologists
  - Resident trainees
  - Visiting pathologists and trainees



4. Reasonable PPE

- Surgical scrub suit
- Water-proof gown
- Face mask – surgical or FFP3
  - Blood-born agents – surgical mask
  - Air-born agents – tighter mask
- Eye protection – goggles/glasses/full face visor
- Gloves – cut-proof neoprene under rubber
  - For HG3 and perhaps all autopsies?
- Hat
- Steel-reinforced wellies





5. Diagnostic pathways to evaluate IDs

1. Known infections
   - Treated or not treated
2. Suspected infections
3. Unanticipated infections at autopsy

The limitations of clinical information in life

Each scenario process will depend on the actual agent

- Post-vaccination fatality

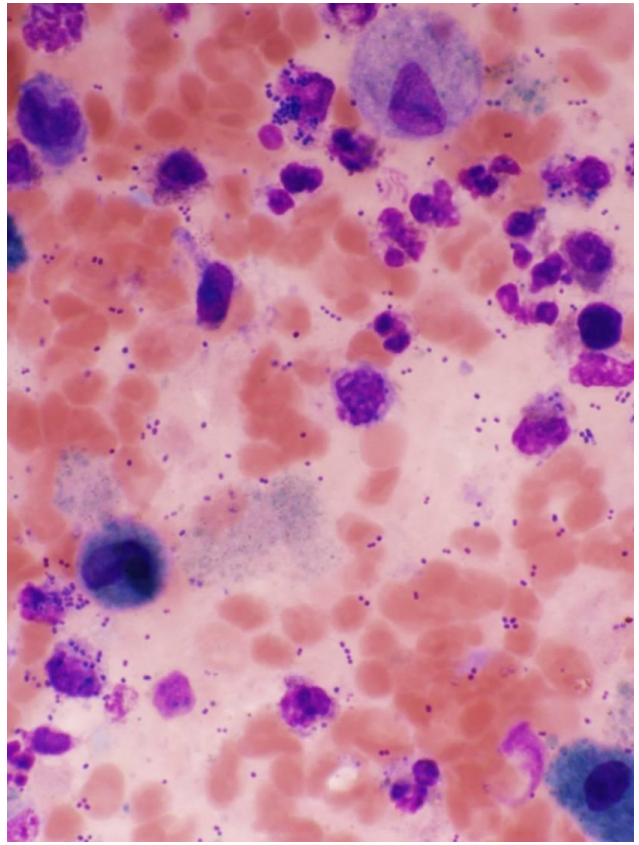
5. Basic diagnostics

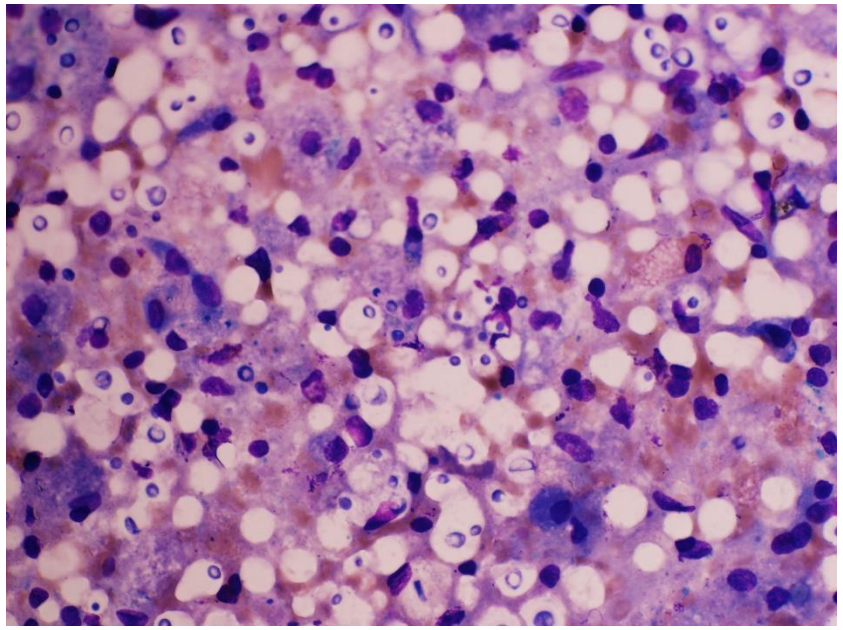
- If local infection – sample for FFPE histology +/- microbiology fresh tissue
  - Special stains, IHC, ISH
  - PCR for many infections works in FFPE

- If systemic infection and “sepsis ?cause”
- Sample all major organs **and lumbar bone marrow**
- Liver, spleen, large node, lungs, heart, kidney
- Brain optional

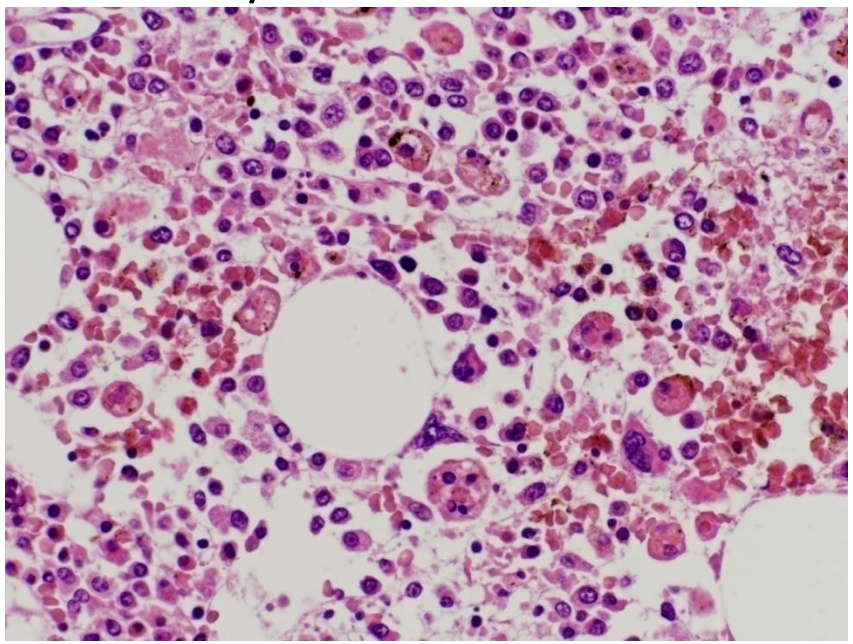
5. Basic diagnostics

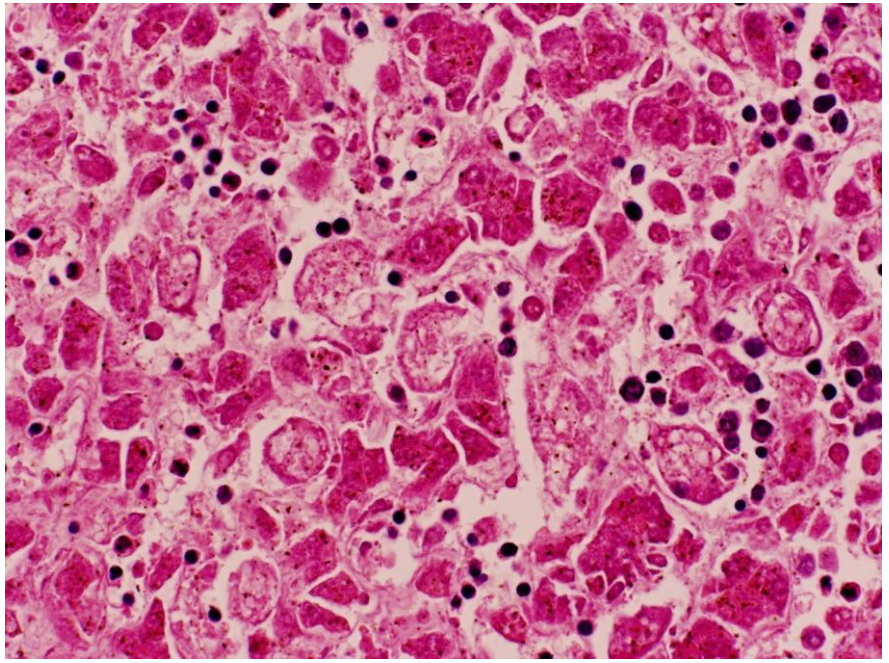
- Consider autopsy dab cytology
- It works for many bacteria and fungi
- Air-dried slide & Giemsa / Gram / Grocott silver / ZN
- Is it ‘tissue retention’?

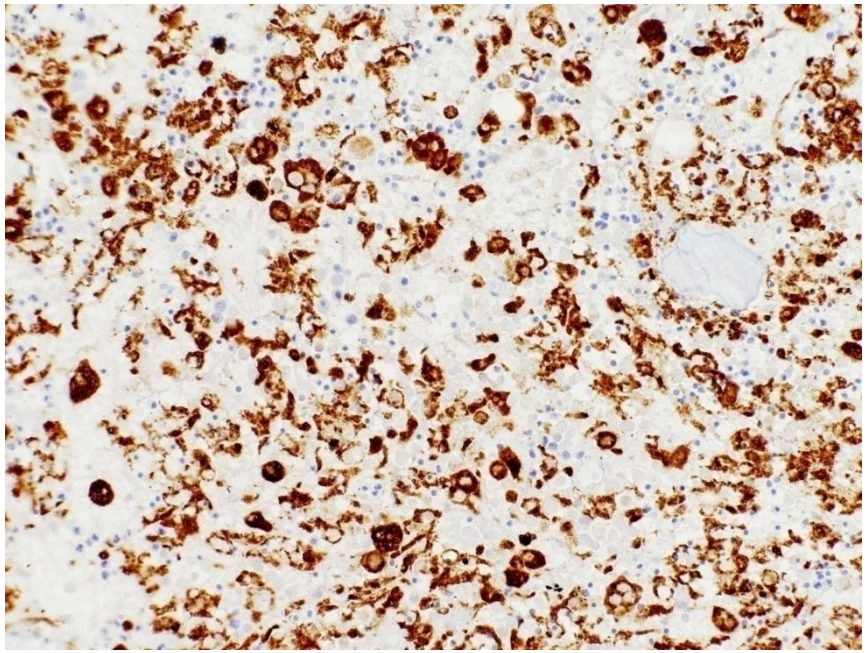




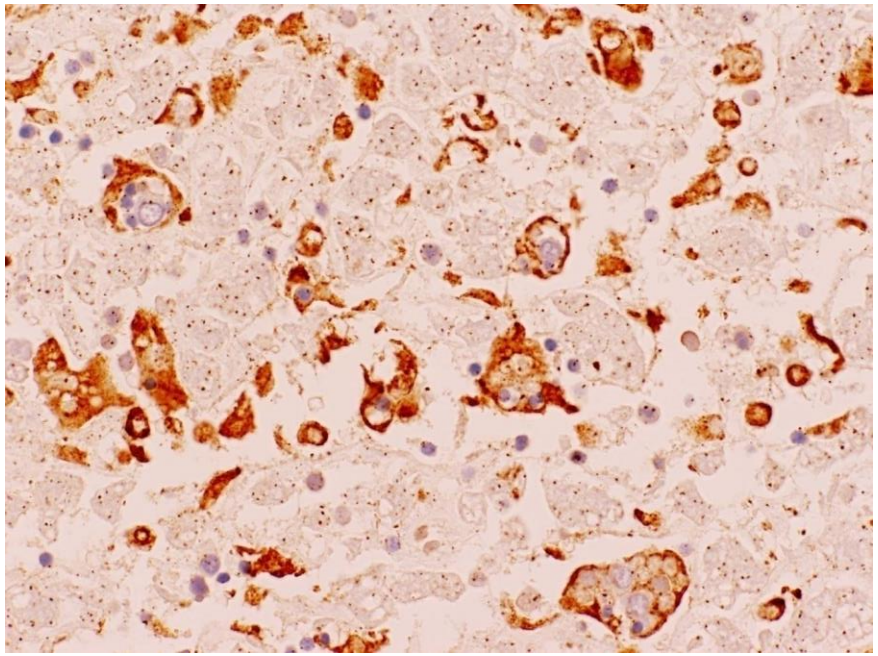
HPC/HLH in bone marrow & liver







CD68/PGM1



6. Managing accidents

- Contamination with blood born viruses and bacteria (and malaria)
- Cuts through gloves
- Refer to OH
  - Hepatitis C
  - HIV
  - Post-exposure prophylaxis (PEP) and treatment
- Test blood from the cadaver
- Safety of staff trumps HTA, ethical and legal issues

- Air-borne inhalation eg TB (retrospective)
  - Watch and wait

End of formal introduction

Your questions, recommendations and objections

Nerdier aspects to consider for final Guideline?

- Detailed information about more named infections – known & suspected
- Details on tissue sampling for more infections
- Shorter lists of bugs
- Protection of visitors: undertakers, embalmers, students
- More on PPE
- More or less on gross pathology encountered in ID cadavers
- More or less on diagnostic cell path and microbiology

- When/how trainees get experience
- Pregnant staff in mortuary
- Management (PHE, NHS, local) interfering with ID autopsy
- More detailed risk assessments
- Staff: circulator needed?
- Notification of IDs to local Health Protection team
- Role of limited autopsy in ID

- **Just limit Guideline to infection risk and PPE for APTs and pathologists??**

After this meeting…..

Ruby and I will prepare the version to send out to RCPath membership for review & comment