

SUSPECTED FELINE MYCOBACTERIAL DISEASE DIAGNOSTIC ALGORITHM

1. Identification of compatible clinical signs

Lymphadenopathy Non-healing wound Nodular skin lesion

2. Is the lesion ulcerated or discharging?

YES

NO

DDx
Abscess
Neoplasia
Granuloma

DDx
Neoplasia
Granuloma

1. Perform impression smear to diagnose superficial pyoderma.
2. Consider empirical antibiotic therapy e.g. amoxicillin-clavulanate or culture and sensitivity testing
3. Perform fine needle aspirate for cytology

1. Perform fine needle aspirate for cytology
2. Perform incisional or excisional biopsy as appropriate for the size and location of the lesion.

Keep 1- 2 unstained cytology slides OR half the biopsy tissue frozen pending results

Lesion fails to respond or only partially responds to empirical or targeted antimicrobial therapy

3. Histological or cytological findings consistent with a response to mycobacteria

Request Ziehl-Neelsen stain to look for the presence of acid-fast organisms (AFO)
Morphological assessment of AFOs confirms mycobacterial disease

4. Attempt to speciate the causal agent: Is the lesion (histology/cytology) AFO positive?

4a. Mycobacterial interferon gamma release assay (IGRA): Biobest Laboratories Edinburgh (0131 4402628)

- Cost £250+VAT
- Sensitivity 100% for TB-complex infections, 80% sensitivity to discriminate *M. bovis* from *M. microti*. Specificity not evaluated.
- Assesses for mycobacterial antigen specific T-cell response in heparinised blood *i.e.* **does not require tissue sample or for organism to be present (AFO negative).**
- Lab able to advise *re* sample collection and appropriate transport
- Submissions 1st & 3rd Thursday of each month, results issues by the following Wednesday

4b. Mycobacterial PCR: Leeds UTH

- Cost ~£300-500+VAT: dependent on the number of tests required and/or if sequencing is needed
- Sensitivity unknown; higher on fresh c.f. formalin fixed tissue. Sensitivity is low if number of AFOs is small. Specificity 100%
- Can be run on any sample where presence or organism is suspected
- Turn-around typically 5-10 working days

4c. Mycobacterial culture: AHPA Weybridge

- Free of charge in Wales, occasionally in England and Scotland. Cost if chargeable ~£250+VAT
- Sensitivity ~50%, specificity 100%
- Considered the “Gold standard” test as both test parameters identified, but not always most appropriate.
- **Can ONLY be run on fresh tissue**
- Patients **MUST** be treated pending results as isolates can take up to 16 weeks to grow

5. Assess zoonotic risk of identified species with owners

- Overall the risk from all feline mycobacterial infections is very low
- *M. bovis* is the greatest risk, in particular to immunocompromised owners & if lesions are discharging
Discuss any individual case with University of Edinburgh (see below) if there are concerns

6. Prior to treatment, assess baseline patient health and stage disease spread

1. Routine haematology & serum biochemistry (including Ca²⁺)
2. FIV/FelV testing
3. Thoracic radiographs (or CT)
4. Abdominal ultrasound (or radiographs) as indicated

If owners consent, we would be grateful to clinicians who can submit remnant/spare serum samples to University of Edinburgh for research

7. Contact University of Edinburgh team for case specific help:
Email: companion.animalTB@ed.ac.uk Tel: 0131 650 7650