Case # 12: 17-6
“Tucker”

Presenter: Francis Sebastian
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Signalment and History

- 9 month-old, intact, pygmy-Nigerian dwarf goat
Signalment and History

- 9 month-old, intact, pygmy-Nigerian dwarf goat
- Non-weight bearing lameness & multiple unilateral forelimb fractures
Signalment and History

- 9 month-old, intact, pygmy-Nigerian dwarf goat
- Non-weight bearing lameness & multiple unilateral forelimb fractures
- Conservative treatment
Signalment and History

- 9 month-old, intact, pygmy-Nigerian dwarf goat
- Non-weight bearing lameness & multiple unilateral forelimb fractures
- Conservative treatment
- Euthanized after deterioration
Macrophages
Macrophages

Neutrophils
Neutrophils

Macrophages

Necrosis
Giemsa
Morphologic diagnosis
Morphologic diagnosis

- Multifocal to coalescing marked chronic pyogranulomatous and necrotizing hepatitis and pneumonia with intrahistiocytic coccobacilli
Additional gross diagnoses
Additional gross diagnoses

- Pyogranulomatous splenitis and lymphadenitis
Mycobacterium bovis
Mycobacterium bovis

Burkholderia pseudomallei

WCVM Veterinary Pathology VetPath4US

Courtesy Carl Soffler
Corynebacterium pseudotuberculosis

University of Tennessee-Craig/Veiga-Parga
Corynebacterium pseudotuberculosis

Rhodococcus equi

University of Tennessee-Craig/Veiga-Parga

University of Tennessee-Ilha
Ancillary diagnostics
Ancillary diagnostics

• Aerobic & anaerobic culture of liver:
  >1000 Colony forming units of
  *Rhodococcus equi*
Ancillary diagnostics

- Aerobic & anaerobic culture of liver: >1000 Colony forming units of *Rhodococcus equi*
- Facultative intracellular, gram-positive

http://www.jpma.org.pk
Rhodococcus equi

- Classically foal rhodococcosis: pneumonia & colitis

University of Tennessee-Craig/Fisher
Rhodococcus equi

- Classically foal rhodococcosis: pneumonia & colitis
Rhodococcus equi

- Classically foal rhodococciosis: pneumonia & colitis
- Rarely osteomyelitis in adult horses
Rhodococcus equi

- Small ruminants: chronic disseminated pyogranulomatous infections
**Rhodococcus equi**

- Small ruminants: chronic disseminated pyogranulomatous infections
- Cattle: tuberculosis-like abscesses in lymph nodes
**Rhodococcus equi**

- Small ruminants: chronic disseminated pyogranulomatous infections
- Cattle: tuberculosis-like abscesses in lymph nodes
- Dogs & cats: endophthalmitis, endocarditis, abscesses etc.
**Rhodococcus equi**

- Small ruminants: chronic disseminated pyogranulomatous infections
- Cattle: tuberculosis-like abscesses in lymph nodes
- Dogs & cats: endophthalmitis, endocarditis, abscesses etc.
- Humans: zoonotic, resembles pulmonary tuberculosis
Virulence factor and survival tactic

Avirulent *R. equi*
Plasmid (-)

Virulent *R. equi*
Plasmid (+)
Summary

- Few reports in goats: disseminated pyogranulomatous *Rhodococcus equi* infection together with osteomyelitis
Summary

• Few reports in goats: disseminated pyogranulomatous
  *Rhodococcus equi* infection together with osteomyelitis

• In this case fractures unrelated
Summary

• Few reports in goats: disseminated pyogranulomatous *Rhodococcus equi* infection together with osteomyelitis

• In this case fractures unrelated

• Mimics grossly caseous lymphadenitis, tuberculosis & melioidosis
Acknowledgements

- Dr. Lani Bower
- Dr. Deb Miller
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- Resident mates
Questions?

https://bildsuche.digitale-sammlungen.de
Resources


Levente, Szeredi; Zsuzsanna, Ronai; Balazs, Bende; Tamas, Vrably; Nikolett, Sik; Adam, Balint (2015): Rhodococcus equi induced abscess and septicaemia in a cat. In MAGYAR ALLATORVOSOK LAPJA 137 (11), pp. 655–662.


Toyooka, Kiminori; Takai, Shinji; Kirikae, Teruo (2005): Rhodococcus equi can survive a phagolysosomal environment in macrophages by suppressing acidification of the phagolysosome. In Journal of medical microbiology 54 (Pt 11), pp. 1007–1015. DOI: 10.1099/jmm.0.46086-0.

Virulence factor and survival tactic

- Avirulent and virulent plasmids
- Prevents phagosome-lysosome fusion
- In environment change from avirulence to virulence possible

Toyooka et al. 2005