

ESVCP Mystery Slide 2021

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SPECIMEN: Scanned digital slide and photomicrographs of a percutaneous transtracheal wash cytocentrifuge preparation

SIGNALMENT: Four-week-old Clydesdale colt

HISTORY AND CLINICAL FINDINGS:

A 4-week-old Clydesdale colt was presented to the Texas A&M Veterinary Medical Teaching Hospital with a chief complaint of bilateral hindlimb paralysis, which had progressed over 48 hours. He had been treated with unknown dosages of amikacin, sodium ampicillin, DMSO, flunixin meglumine, and dexamethasone prior to arrival. Prior history included failure of passive transfer of immunity at 24 hours of age, at which time he was treated with a plasma transfusion. At admission, the colt had normal vital parameters and was bright and alert but unable to stand. There was a palpable and painful soft tissue swelling near the dorsal spinous processes of T8-T10. Neurological examination revealed normal mentation, cranial nerves, forelimbs, and withdrawal reflexes of both forelimbs. Deep pain was apparent in both hindlimbs, and reflexes were increased. Complete blood count revealed an inflammatory leukogram with mild normocytic, normochromic anemia. Supportive care was provided to stabilize the patient overnight including an indwelling feeding tube, IV fluids, and anti-inflammatory drugs. Radiography and CT revealed significant osteomyelitis of thoracic vertebrae. An MRI revealed compression of the spinal cord at the level of T9. Dorsal spinous process resection with spinal stabilization of T6-T13 was performed, and aggressive antimicrobial therapy was initiated. During the next two months, the foal experienced additional complications. Bilateral inguinal hernias required a third intubation, general anesthesia, and surgical correction. The foal was intubated for general anesthesia two more times to diagnose and manage complications including additional osteomyelitic lesions, an ESBL-positive urinary tract infection, a surgical site seroma (post hernia repair), and a methicillin-resistant staphylococcus infected corneal ulcer.

Following his fifth anesthetic episode to address the corneal ulcer, he developed severe respiratory distress. His respiratory rate was persistently increased, and he had a minimal expansion of his chest wall with a severe abdominal component. Sternal recumbency and flow-by oxygen therapy did not improve his signs, so thoracic radiographs and ultrasonography were performed. A moderate, diffuse interstitial pulmonary pattern was identified on radiographs and was suspected secondary to atelectasis from prolonged recumbency. Ultrasonography was unremarkable. His respiratory signs continued to progress, but radiographic studies and thoracic auscultation remained unchanged. Roughly 2.5 weeks after the development of the respiratory signs, the colt underwent another short anesthetic episode to investigate a new osteomyelitic lesion. During the anesthesia, he became severely hypoxic. Due to the continual decline, a transtracheal wash with cytology and culture was performed. Images of the cytocentrifuge preparations made from the wash fluid are below.

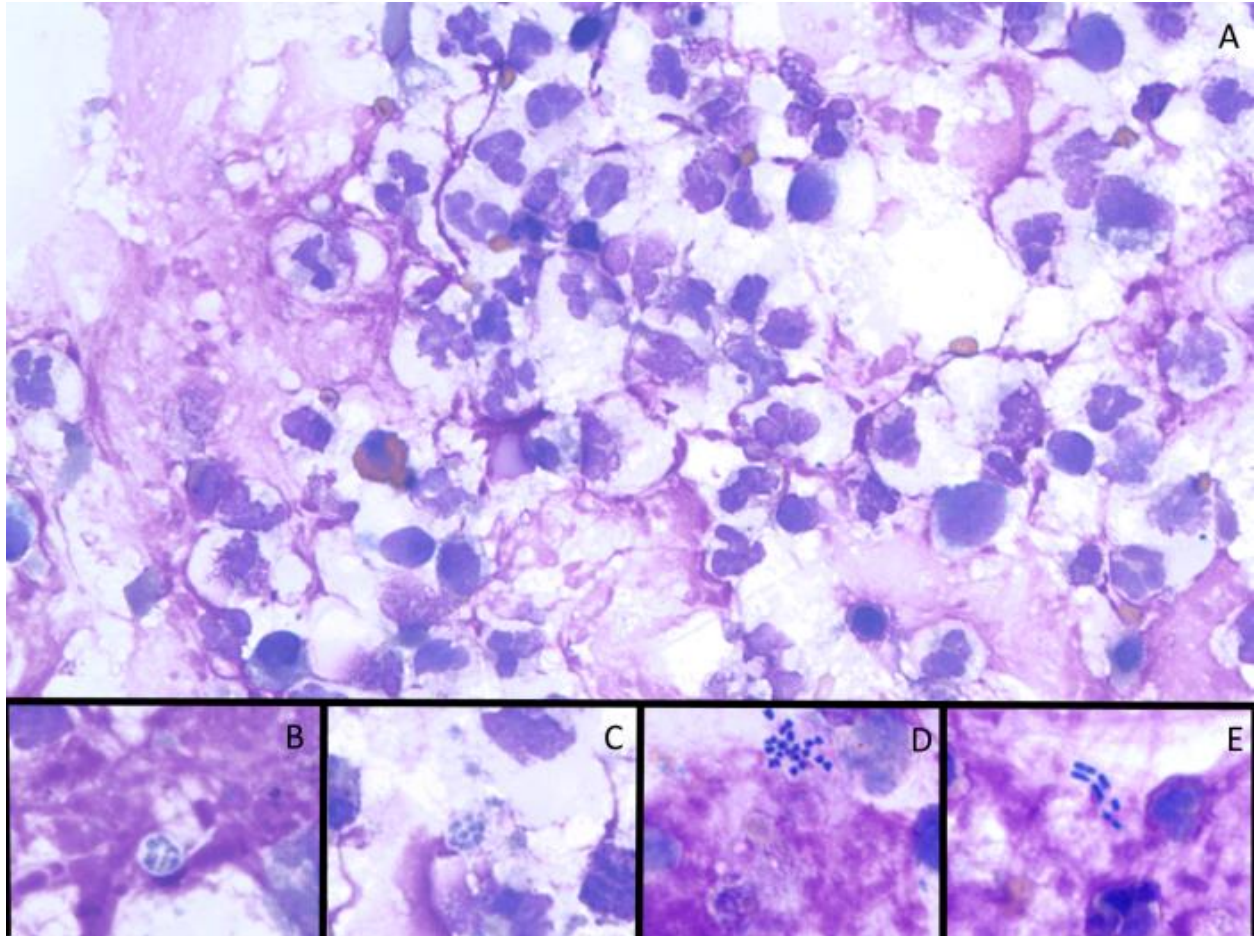


Figure 1: Cytocentrifuge preparation made from transtracheal wash fluid. Modified Wright; A. 50x objective, B-D. 100x objective.

QUESTIONS:

Question 1: What is the identity of the organisms observed in Figure 1B and C?

- A. *Candida albicans*
- B. *Pneumocystis carinii*
- C. *Prototheca wickerhamii*
- D. *Histoplasma capsulatum*

Question 2: Which diagnostic test would be least helpful in the identification of the organism from question 1?

- A. GMS stain of a respiratory wash sample
- B. Immunohistochemistry of a lung section
- C. Fluorescent in situ hybridization of a lung section
- D. Culture of a respiratory wash sample