

Applicant Email
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Specialty
Equine IM

Case Logs

Case Log 1

Initial treatment date **Patient ID**
2/4/2023 167092

Breed	Sex	Age	Weight in kg
Quarter Horse	Female	0.00	30.00

Diagnosis (or differential diagnosis list)
Respiratory and cardiac arrest, secondary to sepsis

Case presentation

The patient presented to applicant's facility for failure to stand following an unattended birth. On presentation the approximately 12 hour old filly was unable to stand so she was carted into the exam room. Because the birth was unattended, it was unclear if the filly ever stood initially and nursed from the dam at any point. The applicant performed a neonatal assessment and examination and found the patient to be weak but responsive to stimuli, her heart rate was 120 bpm, and her respiratory rate was 60 rpm with no abnormalities auscultated, and her temperature was too low for the thermometer to read. Her mucous membranes were pink and tacky and had a moderate amount of petechiation present with a CRT of less than two seconds. She had normal PLRs bilaterally. Her respiratory effort was normal with no nasal discharge and her GI sounds were decreased in all quadrants. Her distal limbs, pinna, and muzzle were all cold to the touch, indicating poor perfusion from being in shock (8). Using proper venipuncture technique, blood was drawn from the patient's jugular vein and submitted for an in-house CBC, fibrinogen, serum chemistry, electrolyte panel, and peripheral lactate. The CBC revealed that the patient was leukopenic (patient's WBC count: 2.06×10^3 WBC/uL, reference range: $5.2-10.1 \times 10^3$ WBC/uL) characterized by a neutropenia (patient's neutrophil count: 0.88×10^3 neutrophils/uL, reference range: $2.7-6.6 \times 10^3$ neutrophils/uL) and a lymphopenia (1.15×10^3 lymphocytes/uL, reference range: $1.32-5.86 \times 10^3$ lymphocytes/uL). The only other significant thing found from the labs submitted was that the patient's peripheral lactate was 16.6 mmol/L (reference range: <2.0 mmol/L). The patient's leukopenia and elevated peripheral lactate were most likely due to the patient's suspected septic shock. The applicant properly selected, assisted in placement, and maintained a multilumen catheter in the patient (27). A multi-lumen catheter was chosen because the patient would likely need to receive total or partial parenteral nutrition (TPN/PPN) during hospitalization since she would not likely be able to stand and nurse on her own in the coming days. Once the IV catheter was placed, the applicant properly and aseptically obtained a blood sample for aerobic and anaerobic culture as there was significant concern that the filly could be septic due to her clinical signs, abnormal blood work values, and unattended birth (14). The applicant restrained the patient while the DVM performed an ultrasound of her abdomen and thorax (44). The ultrasound revealed that the patient had a mild amount of free peritoneal fluid in the abdomen as well as mild consolidation of the right cranioventral lung lobe. The DVM instructed the applicant to perform an oxygen saturation measurement (20). The applicant found the patient's SpO₂ (peripheral capillary oxygen saturation) to be 88% (reference range: 93-100%). Because of the patient's low SpO₂, the applicant placed a nasal cannula in the foal's nares and properly set-up, initiated, monitored, and maintained oxygen therapy in the patient (34). Shortly after the oxygen cannula was secured in the patient's nares, she began open-mouth breathing and she was moved from lateral

recumbency into sternal recumbency to help facilitate breathing. The patient became less and less responsive to stimuli and went into respiratory arrest. The DVM then instructed the applicant to set-up and maintain an open airway in the patient via intubation and set-up, assist, and maintain positive pressure ventilation with the use of an AMBU (artificial manual breathing unit) bag (42 & 43). With a patient that weighs 30 kg, a drug dosage of 0.1 mg/kg, and a drug concentration of 1 mg/mL, the patient was calculated to receive up to 3 mL of epinephrine. The applicant instructed an assistant to administer a breath to the patient with the AMBU bag every 10 seconds and began administering cardiac compressions as the DVM administered 1 mL of epinephrine IV. After 1 minute of chest compressions and positive pressure ventilation, the patient failed to breathe on her own and she had no heartbeat. She was administered another 1 mL of epinephrine IV as well as doxapram IV. With a drug dosage of 0.7 mg/kg, and a drug concentration of 20 mg/mL, she was administered 1 mL of doxapram. The patient failed to respond to resuscitation and the owner elected for us to discontinue and humanely euthanize the filly.

Advanced skills the applicant performed

- Properly perform a neonatal assessment and examination (8)
- Properly and aseptically obtain blood culture samples (14)
- Properly restrain/handle the neonatal equine patient (44)
- Properly perform oxygen saturation measurements (20)
- Properly set-up, initiate, monitor, and maintain oxygen therapy in the patient (34)
- Properly set-up and maintain an open airway via intubation (42)
- Properly set-up, perform, and maintain positive pressure ventilation (43)
- Properly and safely administer cardiopulmonary resuscitation in an equine patient (46)

Advanced skills the applicant assisted with

- Properly select, assist in placement and maintain a multi-lumen catheter in the patient (27)

Outcome

Arrested/Euthanized. The patient's failure to respond appropriately to emergency drug and mechanical resuscitation gave the foal a grave prognosis and drove the owner's decision to humanely euthanize. With a dosage of 1 mL/10lb of bodyweight, 6.6 mLs of pentobarbital was administered IV. Death was confirmed with lack of corneal reflex and absent heart beat.

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