CASE PRESENTATION

A 4-year-old quarter horse mare was admitted to the Equine Clinic at the University of Missouri Veterinary Medical Teaching Hospital on an emergency basis with a left lateral penetrating thoracic wound incurred while working cattle that day. The owner reported that the mare became acutely dyspneic after the thoracic injury and was referred after emergency stabilization by the primary veterinarian. At presentation, the mare was bright and alert and had moderate tachypnea and mild dyspnea. A lateral thoracic radiograph (A) was obtained.

1. What is the diagnosis and the relevant equine anatomic feature?
2. What emergency and additional treatments for penetrating thoracic injury are crucial in the field before referral?
3. What initial treatment and diagnostic procedures should be implemented when the patient arrives at the referral clinic?
4. What definitive treatment is indicated, and what is the prognosis?

(See page 34 for answers and explanations.)
1. Bilateral pneumothorax. Both lungs were collapsed, as evidenced by the radiolucent dorsal thoracic cavity and the two ventral soft tissue longitudinal masses representing both lungs. Because horses commonly have a fenestrated mediastinum, penetration of one hemithorax may lead to bilateral pneumothorax, resulting in significant respiratory inadequacy.¹

2. In the field, the thoracic wound should be sealed immediately by covering it to create an airtight seal. This prevents air from entering the pleural cavity and further collapsing the lungs. Suturing a towel over the wound, as in this case, is a quick, easy, and effective method of creating a seal.² If the horse is still dyspneic, thoracentesis and air evacuation may be indicated. Additional therapy includes initiating treatment with broad-spectrum parenteral antimicrobials and NSAIDs as well as verifying that the horse’s tetanus vaccination status is current.

3. Immediate treatment in the hospital includes administration of 100% oxygen via nasal or intratracheal catheter, verification of an airtight seal of the thoracic wound, and placement of chest tubes at the dorsal aspect of the thorax for air evacuation (B). Treatment with broad-spectrum parenteral antimicrobials, NSAIDs, and supportive therapy should be continued, and additional analgesics may be needed to improve breathing efficacy. Arterial blood gas evaluation and thoracic radiography are invaluable in monitoring the adequacy of respiratory function.

4. After stabilization of the patient over 12 to 72 hours, thorough wound exploration, debridement, foreign body removal, and wound closure are indicated. For best results, general anesthesia with controlled mechanical positive-pressure ventilation is necessary. Survival after penetrating thoracic wounds is reportedly favorable (C), barring concurrent severe injuries, such as intestinal perforation.³ The mare was discharged and doing well at training 1 year after surgery.

REFERENCES