Key Points

- The prognosis associated with herniorrhaphy varies depending on a number of factors including underlying cause, time from injury and concurrent diseases.
- Considerable preoperative planning is essential to address potential intraoperative and postoperative complications.
- Intensive postoperative care is necessary in herniorrhaphy patients to mitigate complications.

Diaphragmatic hernias continue to be an important clinical entity in dogs and cats. Hernias can be either from congenital or acquired causes, with acquired hernias being much more common in veterinary patients.

Congenital diaphragmatic hernias are most commonly of the peritoneopericardial variety. Peritoneopericardial diaphragmatic hernias (PPDHs) are caused by a failure in the normal development of the septum transversum. Screening for concurrent developmental defects— including cranial abdominal wall and intracardial defects, should be performed in these patients. Although the occurrence of this disease in small animal patients is invariably congenital, manifestation of clinical signs may not occur until later in life. This may delay the diagnosis of PPDH in many patients. The diagnosis of a PPDH is often accomplished via survey thoracic radiographs, and the occurrence of a curvilinear radiopacity between the cardiac silhouette and the diaphragm on the lateral projection supports the diagnosis. Support of a diagnosis of PPDH can also be accomplished through ultrasound examination of the pericardial/diaphragmatic region. Surgical herniorrhaphy is typically performed in patients with clinical signs that impact daily activities, and is most commonly approached via a ventral midline celiotomy. Prognosis is excellent, particularly in those patients that survive the initial 24 hour postoperative period and recurrence of this disease is rarely encountered.

Traumatic diaphragmatic hernias are more commonly encountered compared to congenital diaphragmatic hernias in veterinary patients. The vast majority of traumatic diaphragmatic hernias are indirect in nature, but cases of direct traumatic diaphragmatic hernias sporadically occur in dogs and cats. Patients with traumatic diaphragmatic hernias often present in shock immediately after the traumatic event, and initial efforts must be focused on life-sustaining supportive care. Diagnosis of the diaphragmatic hernia is most often accomplished with thoracic radiographs, but the sensitivity and specificity of this diagnostic tool in the diagnosis of diaphragmatic hernias is not 100%. Thoracic and abdominal ultrasonography, computed tomography and positive contrast celiotography are alternate diagnostic tools that can be utilized in cases where conventional survey radiographs do not confirm the diagnosis. Surgical intervention is typically performed in patients shortly after diagnosis and stabilization. Extreme vigilance must be exercised to elucidate any concomitant injuries that are present in these patients. Surgical herniorrhaphy is typically performed via a ventral midline celiotomy, but potential extension of this primary incision in any direction should be anticipated to facilitate the reduction of viscera, the visualization of organs, as well as the performance of the herniorrhaphy itself. Herniorrhaphy can generally be accomplished via primary repair of the defect itself, but occasionally autogenous or synthetic grafts may be necessary to obtain complete closure of the
hernia. Intensive postoperative monitoring as well as aggressive analgesia protocols are essential in the management of the traumatic diaphragmatic herniorrhaphy patient. Complications including pneumothorax, hypoventilation, hypoxemia, and reexpansion pulmonary edema can occur. Recurrence of a surgically repaired diaphragmatic hernia is rarely encountered in veterinary medicine. Prognosis is very good to excellent in these patients. The exact relationship between the timing of herniorrhaphy and prognosis is debated in the literature, but in general it is held that chronic diaphragmatic hernia patients (with hernias existing > 1 year) hold a more guarded prognosis with higher perioperative mortality rates.

References