

Informed Consent

Peritoneal Pericardial Herniorrhaphy (PPDH) (Hernia Repair of the Diaphragm/Pericardium)

You have elected to have your pet undergo a surgical procedure called hernia repair or herniorrhaphy. A hernia is a defect in between the muscles that are supposed to form a boundary. In this case, the defect is in the diaphragm muscle, and specifically, the pericardium (heart sack), which is meant to separate the chest from the abdomen. The result of this defect, is that abdominal organs end up in the chest, and specifically in the pericardium, and the reduced space in the pericardium affects the function of the heart and possibly the lungs. The goal of surgery is to replace any misplaced contents, and suture the defect. Prognosis is generally excellent, but we need to make you aware of the risks and complications associated with this surgery. If you have any questions or concerns, please let us know.

The risk of complications after peritoneal pericardial herniorrhaphy is low, about 15% of cases. Here are some potential risks:

Skin incision infection- this is a risk with any surgery and is usually treatable with antibiotic therapy

Failure of hernia repair- if the incision line to repair the hernia fails, revision surgery will be recommended

Hemorrhage- bleeding can be moderate, but isn't usually severe

Pulmonary reexpansion injury- this occurs as a result of the lungs, not used to occupying a large space, suddenly occupying a large space and when they stretch to occupy the space, they tear, and fill with fluid and scar tissue. This can be life threatening if it occurs.

Reperfusion injury- if entrapped organs or tissues have a compromised blood flow in the hernia, replacement of those tissues could allow blood flow, but in the mean time, toxic metabolites could have accumulated, damaging the tissue organ as they are released when blood flow returns.

Pneumothorax- when air gets into the chest, but outside of the lungs. This usually happens during surgery and can be corrected, but could happen after surgery; or a defect that allows air to accumulate in the chest occurs but isn't noted until after surgery. Additional therapies may be needed.

Hemothorax (blood in the chest)- if there is continued hemorrhage after surgery, it collects in the chest, outside of the lungs. If there is sufficient volume of blood, it may not only raise concerns about low blood volume, but also the lungs may not have room to expand to allow breathing. This could be life-threatening.

Pleural effusion- the collection of fluid outside of the lungs but in the chest could occur as tissues heal. Additional procedures may be recommended

Pyothorax (pus in the chest)- this is very rare but could happen if there is bacterial contamination in the chest, either from a violation of the gastrointestinal tract or liver during surgery, or from the surgical wound (skin edges or environment). Additional treatments (chest tube) or procedure may be recommended.

Nerve damage- specifically the phrenic nerve could be injured during surgery or dissection. The phrenic nerve is in the chest and runs along the heart. There are two (right and left) and they are responsible for helping the diaphragm function (contract to allow breathing). Damage to this structure could make it harder (permanently or temporarily, depending on the amount of damage) for your pet to breathe after surgery.

Cardiac arrhythmias- these are disturbances in the heart rhythm, and may be due to irritation of the heart or damage to heart muscle. Usually they are temporary and may or may not need medication.

Lung atelectasis- the failure of lungs to inflate after surgery- could occur and usually corrects over time, but if not, additional therapies or surgery may be recommended.

Lung damage or contusions, pneumonia- bruises of the lungs could occur and are treated in case by case matter if they occur.

Complications with chest tubes- the purpose is to monitor and evacuate the thoracic space. However, they have their own set of issues: their presence or placement can damage structures in the chest, leading to bleeding or pneumothorax (see above), heart muscle damage, heart rhythm disturbances (arrhythmias), or nerve damage, they could become displaced or leak (and lead to pneumothorax), or they could block or plug. Proper care, monitoring, and maintenance are key.

Presence of additional congenital defects- PPDH is a congenital anomaly and when one anomaly occurs, there could be others that may not have been identified yet. These defects could be identified in surgery but could include things like heart defects that could be difficult to identify but could affect anesthesia, outcome, and prognosis.

Damage to abdominal organs- damage could occur during replacement of structures that could be within the hernia like the liver, gall bladder, stomach, or gastrointestinal tract. The

thoracic duct (a tube routing lymph fluid) could get damaged, leading to chylothorax (an accumulation of lymph in the chest).

Lung lobe torsion (twisting)- this can occur after there is extra space in the chest the lungs were not used to filling. Additional therapies may be recommended.

Loss of abdominal domain- meaning the abdomen is too small to contain the organs it is supposed to