Informed Consent

Lung Lobectomy

You have elected to have your pet undergo a surgical procedure called thoracotomy. This is a procedure where the chest is opened surgically to address a problem in the thoracic (chest) cavity. In this case, the surgical goal is to remove one or more diseased lung lobes, called a lung lobectomy. Generally prognosis with surgery is very good, but there are inherent risks with both the thoracotomy and the lung lobectomy. Both will be discussed here. If you have any questions or concerns, please let us know.

Thoracotomy

Generally the prognosis with surgery is excellent, complications are rare (10% of cases, or less) but when complications occur, they can be life-threatening. There are many important structures in the chest that require manipulation, treatment of, or dissection near that have the potential to cause complications in chest surgery.

Pneumothorax (air in the chest)-the lungs are built for gas exchange, to get oxygen in to the blood, but air in the chest, outside of the lungs, does not allow that gas exchange due to pressure changes. As soon as the chest is opened to room air during surgery, your pet looses the negative pressure the diaphragm obtains in the chest used to pull air into the lungs. This is ok when it is planned, as in during surgery, because we can provide pressure by ventilating your pet during the procedure. If there is a leakage of air into the chest (from the environment or from a defect or damage in a lung or airway) after surgery, this can be life threatening. Most often, we recommend a chest tube be placed after surgery to be sure "negative pressure" is obtained for a few days to ensure the gas spaces are appropriately sealed.

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.

Pyothorax (pus in the chest)- this could be due to the underlying process or could be secondary to surgery. 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.

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.

More minor complications of thoracic surgery include wound infection, wound dehiscence (opening), seroma (collection of fluid under the skin), subcutaneous emphysema (collection of air under the skin).

Rare complications include infection of the bone or ribs (osteomyelitis, a serious infection), fractured or displaced ribs/sternum, and lameness in the front limb(s) due to stretching of nerves in the armpits during surgery (usually temporary).

Lung Lobectomy

If a lung lobectomy is performed, generally risks include the following and these may occur in about 15% of cases:

Pneumothorax (see above)- a resection site leaks air after surgery

Hemothorax (see above)- a resection site bleeds after surgery

Recurrence of disease- this could include spread or regrowth of any cancer, spread of infection or abscess, or if a lung was removed due to pulmonary bulla, additional bullae can appear in other lobes

Lung lobe torsion- when one or more lobes are removed, it leaves more room in the chest cavity than normal. Although the remaining lobes eventually expand to more occupy that space, that takes time, and on occasion one of the remaining lobes will twist around itself. This can cause fluid buildup in the chest, poor gas exchange in the remaining lungs (ARDS- see below), and additional surgery is usually recommended

Pneumonia- infection within the lungs can occur. This may be medically treated at home, icu care may be needed, and sometimes, additional surgery may be needed. In severe cases, this is life-threatening.

Rarely, the airways can be obstructed by secretions during lung lobectomy manipulation, and rarely, lung injury can lead to a rare but serious syndrome called acute respiratory distress syndrome (ARDS), which can be fatal.