

ASPIRATION PNEUMONIA

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RECOGNIZING ASPIRATION PNEUMONIA IN YOUR PET

When stomach contents first go down the trachea, most animals will cough and swallow a bunch, just like we do when stuff “goes down the wrong pipe.” This can easily be missed, and also can be a minor passage of materials. So coughing does not necessarily mean there will be aspiration pneumonia. But it may...

If enough material goes down the trachea or if it is caustic enough even in small amounts, the body then responds by calling in major inflammatory cells to the trachea and lungs. The cells come rushing in and release more chemicals to call in even more cells. This “acute inflammatory stage” is when animals feel cruddy and spike a fever. If you notice your pet looking dumpy or not eating, it is cause for concern and close monitoring. Aspiration pneumonia this “early” may not be detected on exam with your veterinarian. It can take 12-24 hours for abnormal sounds to develop in the lungs and for x-rays to show signs. Often, a climbing temperature is the earliest reliable sign. (Knowing what your pet’s normal temperature is, can be helpful in detecting small rises in temperature.)

TREATMENT FOR ASPIRATION PNEUMONIA

Since aspiration pneumonitis/pneumonia can vary from very mild to life-threatening, the treatment varies. Not all aspirations will turn into infections.

Generally, treatment may include antibiotics, fluid support (IV, if not eating), and chest physiotherapy. Before and after a major pneumonia crisis, at-home physiotherapy is very helpful. Nebulization, coupage, early ambulation, and postural drainage are the mainstay of chest physiotherapy.

Nebulization is used to moisturize the airway and liquefy any secretions so they can be more easily coughed up. Ideally this is accomplished with a specific nebulizing machine and strict attention to hygiene during and between each session. The machine aerosolizes saline into fine particles which are then breathed in. The next best thing is to have the patient breath steam; unfortunately the water particles are larger in steam and do not go as deep into the airways as nebulized water particles.

Coupage is used to loosen up secretions in the airway (after nebulization) and to stimulate deep coughing to bring these secretions up and out. It involves using your hands in a cupped position, and patting/thumping the chest rapidly all over for several minutes (like playing the bongo drums). It is continued as coughing is initiated and then the pet is allowed to rest. You can repeat 3-4 times per session and provide 4 sessions per day.

Having the patient walk around early and often while they are recovering from pneumonia is important. These walks can be for 1-2 minutes or longer as the patients' strength allows. Moving every 3-4 hours is very helpful if they can tolerate the exertion.

Postural drainage is most helpful in the very weak patient, but also helps in patients with a lot of secretion. It simply involves having the patient lie down in a "head down" posture, on each side, on their back and on their chest (as tolerated). This helps secretions move from the deeper areas of the airways up into the trachea where they can be coughed out. Changing the patient position every few hours can be very helpful; having them in the head-down posture for 10-15 minutes before nebulization and coupage will improve clearance of secretions even more during each session.

ASPIRATION PNEUMONIA ON X-RAYS

--X-rays depict light and dark depending on how "thick" the tissue is that the x-ray beam is penetrating. In the lungs, when there is just air in the microscopic alveoli (air sacs), there is no "thickness" or tissue/cells to impede the x-ray beam so it shows up black. In the lungs, when there are cells or

fluid (as seen with aspiration pneumonitis--sterile inflammation or aspiration pneumonia--infected inflammation), the x-ray beam is impeded and it shows up gradation of gray to white.

--Inflammation in these cases takes awhile to get up to speed; 12-24hrs to "call in" all of the cells and then have the cells wreck havoc on the resident cells and cause fluid to leak, etc. So there is a delay in the x-ray picture at the beginning just after aspirating stomach fluids (i.e. x-rays 12-24hrs after onset may look normal; disease is still there!)

--Inflammation is even slower to leave the scene. Even when the acute inflammatory scenario is quieting down (i.e. biochemicals that create fever and cruddy feeling go away, etc.), you still have the fluid that the body must clear away, and then the white blood cells and other clean-up cells need to go away. So you will have "white" on the x-rays for 24-48hrs after the patient is feeling better.

--In severe cases of pneumonitis/pneumonia, with lots of tissue destruction from the stomach acid or the severe inflammatory reaction, you will also have the repair cells in there laying down scar tissue. These will look like "white" after the acute "feeling bad" episode is over.

UNDERLYING CAUSES OF ASPIRATION PNEUMONIA

It is uncommon for a dog/cat with normal airway and normal esophagus to aspirate liquids sufficient to create pneumonia. Conditions that often result in aspiration pneumonia from the *passage of stomach liquids up the esophagus and then down the trachea/airway* are:

- Laryngeal Paralysis (usually immediately post-operatively; occasionally long post-op)
- MegaEsophagus, resulting from--
 - Myesthenia gravis
 - Lead toxicity

- Unknown/undetermined causes
- Protracted vomiting (from any cause)
- “Flabby” esophagus (for lack of a better descriptor; these patients have poor esophageal function—burp up and swallow a lot, “blurb” out water after drinking, act like “heartburn” sometimes—but do not have traditional MegaEsophagus.)

It is extremely rare (but literally hard/impossible to confirm) for patients to develop aspiration pneumonitis/pneumonia *from inhaling food or water*. Dogs who drown and are resuscitated do not get aspiration pneumonia, typically. And food particles will either get coughed out, or they will get stuck in airway mucus and get walled off; it may result in a problem, but not likely a serious pneumonia like that seen when they aspirate stomach liquids.

Often when Lar Par dogs cough, it is with such force that they may “cough” food material out of their esophagus (especially if they have a “flabby” esophagus). This can be mistakenly interpreted as coughing up food that went down the trachea.

Many or most of the cases that get aspiration pneumonia after Lar Par tieback surgery is because the airway was tied “too” open. How far open is “open enough and not too much” is a very difficult thing to determine and carry out during surgery; trends are toward “less open” tiebacks so we may see a lower % of cases with post-operative AP.

Some helpful online resources

<https://groups.yahoo.com/neo/groups/megaesophagus/info>

<https://www.baileychairs4dogs.com/>

<https://groups.yahoo.com/neo/groups/LP/info>

<https://groups.yahoo.com/neo/groups/LP-GOLPP/info>