

You're Breaking My Heart! Nursing Care of the Cardiac Patient

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To start out, we are going to talk a little bit about nursing care in general, what it means, what it should mean to us as veterinary technicians, how we can get better at it, and how our patients can benefit from excellent nursing care. In order to fully understand our role, let us go back to the beginning...that is going back to the founder of modern-day nursing, Florence Nightingale. Not only did she have a fascinating and difficult personal life, but she also developed her own form of the nursing process. She did this by linking the environment to the health of the patient; physical factors (ambient temperature, light, cleanliness) of the environment as well as the psychological and sociological environment. She felt these all had a profound impact on the overall health of the patient. Traditionally, nursing care was limited to a list of tasks laid out by the doctor. Once the nursing process was developed, this led to a problem-solving approach of caring for patients as individuals. The nursing process involves assessing the needs of the patient, identifying which problems require intervention, planning, and then implementing the actual appropriate care. The next stage in this process is to assess how well the nursing care that was provided affected the patient. This is a process that gets repeated many times during the patient's entire hospital stay.

The whole point of the nursing process is that the care we are providing encompasses the whole patient and not just the disease. We want to contribute to the general well-being of our patients – for example, spending time encouraging them to eat, and making sure we are doing everything we can to reduce their stress and anxiety levels.

Technicians, especially those working in an ICU setting should be knowledgeable about cardiovascular issues as well as how to manage them. This can only increase the chance of patient survival. We also do need to keep in mind that not every dyspneic patient that shows up is in Congestive Heart Failure (CHF). There are other things that can cause an animal to have dyspnea; to name some possibilities – asthma, pneumonia, diaphragmatic hernia, pneumothorax, obstruction in throat (mass or foreign body), non-cardiogenic pulmonary edema. This is why, as with every ER patient, getting a complete history from the owner is of utmost importance. This is important from a nursing standpoint as these patients may show up in ICU to be placed in an oxygen cage prior to a full history being obtained.

These patients typically show up in a cardiovascularly compromised state and therefore need to be considered very fragile and handled gently. Causing patients to struggle or doing things that increase their stress and anxiety levels is something to be avoided at all costs! Increased stress and anxiety levels can lead to worsening of cardiac arrhythmias, can decrease myocardial perfusion, and these can of course lead to death. While stress may cause arrhythmias, it is more likely that it will cause an increased heart rate (HR). A higher HR increases oxygen demand, hence the decompensation. Patients in CHF will typically still struggle in oxygen while a patient with a primary lung issue will appear to improve while in an oxygen cage. Less is always more with these patients – as in less handling, less stress. Any potentially stressful procedures, such as thoracic radiographs or ultrasound, or other diagnostics may have to wait until the patient is more stable and can handle the increased stress. Even if an IV catheter may be required at some point, it should not be at the expense of causing unnecessary stress to the patient. You can always consider placing an IVC in a lateral saphenous as most patients do not require as much restraint for this.

Oxygen supplementation is a no brainer!! ASAP!!! An oxygen cage if possible as this is the best hands off, least stressful option. If it will not cause extra stress, you can consider an O2 mask, hood, nasal cannula, or even flow by. If you have an oxygen cage where you can control the temperature and humidity, please make sure it is not too warm or humid in the cage as this can affect the patient's ability to breathe. Oxygen therapy should always be the first treatment administered – not only is it easily done, but it also often provides immediate benefit. If oxygen alone does not stabilize the patient enough to get further diagnostics done, then the patient may require pharmacological intervention – such as furosemide or butorphanol. If the patient does not have an IV catheter yet, or is too stressed to place one, then giving these medications intramuscularly is a perfectly good option (may need a higher dose of furosemide in this case due to slower absorption). After administration of furosemide, we need to monitor the patient closely for urination, and watch for any changes in respiratory rate and effort. Sometimes the doctor will want the patient to be placed on a constant

infusion of Furosemide, so be prepared for setting up and maintaining a CRI. We often have to slowly wean patients off of oxygen therapy once it has been instituted. Once they are comfortable, eating, and drinking, we can start switching them to oral meds in preparation for being discharged from the hospital.

Some of our cardiac patients will need to be placed on telemetry. Again, we do not want to stress the patient, so have everything ready – clippers, alcohol to clean oils off skin, sticky pads, fresh batteries in telemetry unit, harness, or stretchy sleeve bandage to hold unit in place. Placing telemetry may be something that needs to be done in stages if the patient becomes stressed.

Nitroglycerin paste is used to reduce preload via venodilation. It is sometimes applied to the pinna of the ear, but keep in mind that peripheral vasoconstriction can affect the absorption in an extremity. Therefore, it may be better to apply it to the patient's trunk or inguinal area. Always wear gloves when applying this medication, and make sure it is clearly documented on the patient's file and cage exactly where the nitro is.

Oral medications – not all patients will tolerate being pillled and pillling an unstable patient can cause undue stress. If you are unable to get the patient to take pills in food, treat, peanut butter, or cheese, then it may be best to crush the tablets and make a slurry (you can disguise the taste if necessary, using beef or chicken baby food).

Some cardiac patients will require removal of cavitory effusion in the form of a thoracocentesis, abdominocentesis, or pericardiocentesis. They may require mild sedation for this, depending on the patient, and also flow by oxygen. Post procedure care and monitoring includes monitoring for return of respiratory distress, any indication of distress, as well as basic cardiac monitoring.

Basic cardiac monitoring: observe the patient from a distance to obtain a true RR/RE, respiratory pattern. Listen for stertor (low-pitched noise, similar to snoring) and stridor (high-pitched, harsh, wheezing noise). Always assess the whole body as well; look at the body condition – is there muscle wasting, abdominal distention? It is important to note any nasal discharge. Assessing the mucous membranes (MM) can tell us about hydration status, cardiac output, and oxygenation. MM colour is also extremely important: pale MMs can indicate anemia but could also be due to decreased cardiac output. Pale MMs and a prolonged CRT will help you to differentiate between anemia and vasoconstriction. Cyanotic MMs indicate an increase in deoxygenated hemoglobin; this is seen with right to left shunting, severe respiratory disease secondary to any disorder that impairs oxygenation.

Another important assessment to make with cardiac patients involves pulses. Pulses can be described in terms of rate, rhythm, and quality. Evaluate the patient for pulse deficits, and also describe the pulses as strong, weak, thready, snappy, synchronous, asynchronous.

Jugular veins are also something you should be evaluating – look for jugular pulses or jugular distention. Normal jugular vein pulsation extends about one-third of the way up the neck. To assess these veins, hold patient's head in "normal" position, with mandible parallel to the floor; hold the jugular vein off GENTLY at the thoracic inlet. A jugular pulse that extends longer than one-third of the neck is considered abnormal. This may indicate that the patient has tricuspid regurgitation. You may also see this abnormal jugular pulse if a patient has a complete AV block, ventricular tachycardia, or a poorly compliant right ventricle.

Cats need to be mentioned specifically as they can present with an aortic thromboembolism (ATE), and therefore will likely be in extreme pain and have paralysis of their hind limbs, both of which can add to their anxiety and stress levels. These patients need to be assessed for signs of shock as well as concurrent CHF. It can be challenging to treat these patients as the therapy for shock (IV fluids, pressors) can precipitate or exacerbate CHF. Treatment of these patients is mainly focused on pain control and nursing care. This includes nutritional support, management of bladder and bowels, PROM, massage to prevent fibrosis and limb rigidity.

Another thing to keep in mind is that it takes more to GET a patient out of heart failure than it does to KEEP them out of heart failure, so if they are not actually in CHF when they arrive, we want to do all we can to prevent them from slipping over that edge. This includes not causing them unnecessary stress or anxiety, keeping their environment at a neutral ambient temperature, keeping noise and lighting levels as low as possible, and providing comfortable bedding. By learning, practicing, and using critical thinking skills, along with studying the diseases and conditions our ICU patients present with, we can provide them all with excellent nursing care.

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