

Pre-Operative Procedure for Hernia repair on Peppy:

1. Restrain animal using a halter. Attain the mass of the calf on the electrical scale.
2. Palpate the hernia to determine/postulate:
 - The size of the hernia.
 - The type contents within the herniated sac and any fluid/secretion from herniated region.
 - The ability of the hernia to be reduced. This is noted when the herniated contents can be manually pushed upwards and through the hernia ring. If this is not possible the hernia is considered non- reducible.
 - The size of the hernia ring.
 - Peppy was determined to have a 7 by 6 cm sized, reducible hernia, with a thick firm cord and a hernia ring of 3.5 cm. The hernia dripped a thick white pus like material.
3. Inject the calculated volume of Flunixin meglumine intravenously into the jugular vein.
 - This was done by isolating the vein, holding it off for a moment, cleaning the area with a swab of alcohol.
 - Insert the needle at a 45° angle once through the skin direct the needle parallel to the vein, aspirate until blood is observed in the hub then administer the drug.
4. Perform a sedation by administering the calculated loading volume of xylazine (0.26 ml) and then ketamine (5.2 ml) in the same site using the same needle hub.
 - The rump (or thurl) was isolated.
 - The area was cleaned with alcohol, the area was tapped quickly and the needle was inserted in tandem perpendicularly to the muscle.
 - Aspiration was done to ensure that it was not in a blood vessel then administer the drugs.
 - Allow 10 minutes for sedation to take effect.
5. Inject Penicillin-Streptomycin in the same location of the sedation, following the same procedure just on the contralateral side of the animal's rump/thurl.
6. Peppy went into lateral recumbency 10 minutes after the loading volume for sedation.
7. Remove the hair around the herniated tissue and jugular vein with electric clippers creating a very wide margin of clipped hair all around. This is done should larger incisions become necessary during surgery.
8. Clean the clipped areas (ventrum around the hernia and the jugular vein) thoroughly with Chlorohex scrub. Ensure to remove all debris.
9. Peppy is ready to be carried into the surgery theatre by being carried on a trolley.
10. Place in dorsal recumbency on surgery table.
 - Apply additional restraint to each limb.
 - Pass the rope around the animal's fetlock then through the loop of a bow line knot at one end.
 - Tie rope to the table's notch with a quick release slip knot.
 - Keep head down to ensure all secretions exits through the mouth without impedance. This prevents aspiration pneumonia.
11. Insert two catheters into the jugular vein one on each side of the neck. Inserting two catheters is a precaution measure which allows personnel to have an immediate/direct intravenous access should the initial catheterized vein "blow" or no longer allows for the consistent flow of drugs.

12. Each catheter was inserted similarly as giving an intravenous injection into the jugular vein (Step 4).
 - Once the catheter is in the vein insert a 10 ml syringe with saline into the port to assess if there is blood flow into the syringe and smooth flow of saline into the vein (without blebbing).
 - Tape down the wings of the catheter securely.
13. Connect the saline drip line to the catheter, setting the drip rate at calculated 3 drops per second.
 - It should be noted that 20.5 ml of saline was removed, this volume represents the total equivalent volume of drugs that was added.
 - The saline drip bag contained the continuous infusion rate drug volume of xylazine, ketamine and lidocaine added which totalled to 20.5 ml of drugs.
14. Using the accessory port of the catheter give the loading dose of Lidocaine intravenously.
 - Peppy showed signs of arousal/'waking up' from sedation (50 minutes after initial loading dose), so a 1/4 volume of the loading dose of xylazine and ketamine was administered intravenously through the catheter also.
 - The loading doses of Xylazine and Ketamine was acquired then mixed into one syringe and then administered as in quarter volume parts.
15. Palpate the hernia with the animal being in dorsal recumbency. Again determine/postulate features of the hernia as indicated in Step 2.
16. Apply drapes and clamp them on.
 - Apply antiseptic scrub technique on ventrum around the hernia.
 - Alternate applications of gauze soaked in 70% Alcohol and 7 % Iodine.
 - Using circular motions starting from inner area closer to the hernia and moving towards the periphery. Repeat with new soaked gauze as above twice.
17. Peppy continued to show signs of arousal/'waking up' from sedation so another 1/4 volume of the loading dose of xylazine and ketamine was administered intravenously. These signs include kicking, and grunting/moaning.
18. The drip rate was increased to 6 drops per second.
19. The anaesthesia team continued to determine the respiration and heart rate using stethoscope every 30 minutes (to ensure that they remain within normal range) with continuous monitoring of arousal signs throughout the surgery.
 - They adjusted the drip rate and gave additional intermittent quantities of the 1/4 volumes of the loading dose of xylazine and ketamine as they deemed necessary.
 - Additionally, Splash dose of Lidocaine was administered intermittently throughout the surgery directly onto the surgical site as recommended by the anaesthesia team. This was 4 ml per splash.
20. Surgeons scrubbed and gloved their hands aseptically.
21. Peppy is finally ready for the hernia repair surgery.