Pot Bellied Pig Medicine and Nursing

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Pot Bellied Pig 101

- The Vietnamese Potbellied pig was developed as a dwarf breed in Vietnam. These miniature swine were brought to Canada initially and became the original foundation stock. They have since developed to a slightly smaller size.
- Potbellied pigs in general have a very good disposition, pendulous belly, erect ears and a shortened snout.
- A pure-bred pot-bellied pig will have a straight tail that attaches high on the hind end. If the tail has any curl to it, it is a sign of cross.
- Potbellied pigs can weigh on average between 70-150 pounds. They stand about 14-18 inches at the shoulder and have an average lifespan of 10-20 years. They are fully grown at about 5 years of age. These pigs come in a variety of colors ranging from solid black or white to spotted patterns.

Pig Behavior

- Pet pigs need environmental enrichment
- Most active morning and evening.
- Pigs will root and can be destructive
- Can be housetrained by taking outside every half hour until an elimination site is chosen.
- Chronic stress will show up as repetitive behaviors.

Pig behavior and restraint

- Pigs in general are extremely intelligent and gregarious animals however they despise restraint immensely.
- When agitated they will vocalize loudly and if dealing with swine for an extended period of time or in a small setting, hearing protection is recommended.
- When restraining pigs, they can be placed in lateral recumbency, held sternally or placed in dorsal recumbency depending on the procedure.
- When aggravated, pigs will bite and while muzzling is not standard protocol, the technician should be cognizant of the head.

Pig behavior and restraint

- Swine also have very few sweat glands and can become overheated quickly if they are in a warm environment and become stressed. Signs of heat stress in pigs include open mouth breathing, panting, alternating reddened and blanched skin along with elevated body temperature.
- Additionally be aware of potential escape routes as pigs have a string natural tendency to seek out any possible means of escape and can injure themselves in the process.

Nutrition and Husbandry

- Potbellied Pigs are prone to obesity and proper nutrition and exercise is crucial to their overall well-being.
- Commercially prepared life staged diets are available and pigs should be fed twice daily. High caloric treats should be avoided as well as table scraps.
- Owners should be instructed to feed their pig dark leafy green vegetables as well as alfalfa and green grasses. Fruits can be given in limited quantities.
- Obese pigs can develop fat blindness where fat pockets accumulate around the eyelid causing it to droop over the eye.

Nutrition and Husbandry

- Water intake is vital as pigs can develop salt toxicity if deprived of water.
- They should always be provided fresh, clean water.
- If it is discovered that a pig has been out of water, offer small amount every 30 minutes until the pig no longer wants anymore which can take several hours.
- Offering water free choice to a dehydrated pig can cause salt toxicity.
- Salt toxicity can also be cause by overeating or accidental ingestion of high sodium food.
  - Clinical signs include excessive thirst, anorexia, constipation, and neurological symptoms such as ear twitching, wandering, blindness, ataxia and convulsions.

Hoof Care

- Hoofs should be trimmed periodically to allow for freedom of movement particularly with geriatric and overweight pigs.
- The easiest method to restrain for hoof trimming is to place the pig in a sling so that it is elevated off the ground.
- Alternative methods involves placing the pig in dorsal recumbency between the seated technician while another technician trims the hooves.
- Goat hoof trimmers work well for potbellied pigs.
- When trimming hooves, it is important to only trim the hoof and stay clear of the quick which if nicked can cause lameness.
- The hooves should be cleaned of any debris first then with the trimmers cutting parallel to the hoof removing any excess growth. If the edges of the hooves are rough, these can be filed down with a nail file or horse rasp.
- There are two dewclaws that require trimming as well and care should be taken as to not cut too close to the quick

Dental Care

- After approximately one year of age, the four permanent canines may require trimming as they will continue to grow.
- Sedation or anesthesia is required, and the teeth can be trimmed using obstetrical or orthopedic wire.
- The teeth should be cut at an angle and leave at least a half inch visible. During this time any tartar buildup can be removed as well using manual dental instruments.

Physical Exam

- **Vital Signs:**
- Temperature: 99-102 F
- Pulse: 70-100 bpm
- Respiration: 20-30 breaths/min
- Observe from distance initially.
- Open mouth breathing is a concern
- Arterial pulses can be difficult to assess. HR is best.

Venipuncture

Common venipuncture sites include the cranial vena cava, auricle vessels, cephalic, saphenous, and subcutaneous abdominal vein (milk vein).

IV Catheter

- Intravenous catheters are most easily placed in the marginal or auricle vessels. Depending on the size of the potbellied pig, the cephalic or saphenous veins may also be viable alternatives.
- IV Catheter in Ear Vein

Vaccines and Preventative medicine

- **RECOMMENDED VACCINATIONS**
- Vaccinations will begin at 4-6 weeks of age.
- There are no approved vaccinations for potbellied pigs so vaccinations for domestic swine are used.
- Close observation after administration for adverse reactions should be adhered given the size difference between domestic swine and potbellies.
- Recommendations can also vary depending on if the animal is used as a show pig or breeding stock.
- Common vaccines include: Erysipelas and Tetanus given 3-4 weeks apart and then boostered yearly.
- While Rabies is rare in potbellied pigs and domestic swine, the rabies vaccination can be used extra-label.
- The 6-way Leptospirosis vaccine may be administered if in an endemic area but the vaccination can cause a high fever.

Vaccines and Preventative medicine

- Breeding and show potbellied pigs may also be vaccinated for
  - Haemophilus
  - Leptospirosis,
  - Porcine Parvovirus,
  - Atrophic Rhinitis,
  - Transmissible Gastroenteritis(TGE),
  - Porcine Epidemic Diarrhea Virus (PEDV)
  - Mycoplasma,
  - Pasteurella,
  - Salmonella,
  - E. coli,
  - Rotovirus,
  - Common Clostridial strains.

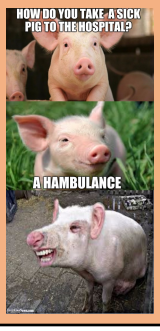
Endoparasites

- Roundworms
- Whipworms
- Nodular Worms
- Thornyheaded Worm
- Toxoplasma
- Coccidia
- Cryptosporidium
- Giardia

Ectoparasites

- Lice
- Sarcoptic Mange: most common ectoparasitic infection. Pig will have severe dermititis and pruritus. This disease is zoonotic.
- Diagnosis is skin scraping of several affected sites.
- Pigs should be isolated from other household pets
- Treatment: Ivermectin (300 mcg/kg, SQ and repeat 2 weeks later) or Doramectin (300 mcg/kg, IM and repeat 3 weeks later)
- Newly acquired pigs should be given a routine preventive injection of either parasiticide when first presented for examination

Common diseases



Seizures

- Idiopathic
- Animal less than a year of age seem to be most susceptible. Seizures may decrease or disappear entirely as the pig ages.
- Pigs may suffer from 1–2 seizures per month to several per day.
- Infrequent seizures may require not pharmacological intervention.
- Treatment: Diazepam
- Phenobarbital and diazepam may be required to control more serious episodes.

Infectious Arthritis

- common in all ages of potbellied pigs due to various causative agents. Most commonly *Erysipelothrix rhusiopathiae*, *Streptococcus* spp, *Mycoplasma hyosynoviae*, *M hyorhinis*, *Staphylococcus* spp, and *Haemophilus parasuis*
- Clinical Signs: Lameness +/- joint swelling in one or more limbs.
- Treatment should be initiated early to avoid a chronic arthritis.
- Treatment should be initiated early to avoid a chronic arthritis (lincomycin at 11 mg/kg, bid for 3 days) may be effective.
- Oce chronic arthritic changes occur then antimicrobial treatment is ineffective.
- For chronic arthritic cases, anti-inflammatories may be helpful.
- In severe cases, euthanasia may be necessary.

Atrophic Rhinitis

- This disease primarily affects younger potbellied pigs and clinical signs will include sneezing, nasal discharge, increased lacrimation, and decreased growth rate, atrophy of the nasal turbinates which may cause distortion of the nasal septum & twisting of the upper jaw
- Disease is divided into 2 forms:
  - Regressive or NonProgressive: due to *Bordetella bronchiseptica* and is mild and transient and does not greatly affect growth and production
  - Progressive: due to toxigenic *Pasteurella multocida* and is severe, permanent, and causes poor growth, distortion of the nose and epistaxis.
- Crowding, poor ventilation, mixing & moving, & other concurrent diseases contribute to intensification of disease
- Environmental factors
  - High ammonia levels
  - Stress
  - Concurrent disease
  - Suboptimal nutrition
- Difficult to keep herds entirely free of outbreaks of sneezing so some aberrant turbinate & nasal bones are common at necropsy/slaughter
- Piglets acquire infectious from nose-to-nose contact with chronically infected dam

Colibaccilosis

- common in young potbellied pigs who have not ingested adequate amounts of colostrum
- **Bacterial** cause- enterotoxigenic strains of *E. coli*
- Causes profuse watery diarrhea, rapid dehydration, acidosis, and death
- Prevention includes reducing predisposing factors such as dampness and chilling; improving sanitation by replacing solid or slatted concrete floors w/ wire-mesh flooring; and vaccinating gestating sows

Cystitis and urolithiasis

- Very commonly seen in potbellied pigs.
- Clinical signs will be polyuria or dysuria.
- Urinalysis, urine culture, CBC, serum chemistry, radiography, and ultrasonography are recommended diagnostic tests. Routine urinalysis may aid in early diagnosis.
- If urethra is blocked in either sex, a cystotomy is recommended.
- Other TX includes antibiotics and urine acidifiers.

Dippity Pig Syndrome

- Also called **Bleeding Back Syndrome** and **Erythema Multiforme**
- Dippity Pig Syndrome is an acute, painful skin condition that occurs along the back in healthy young pigs. Seems to be associated with a stressful situation. Can be reoccuring.
- **Symptoms:**
  - Occurs in young pigs – between 4 months and 4 years
  - Sudden, rapid onset
  - Screaming/squealing in pain
  - Dipping or temporary loss of use of hind legs – it usually does not affect front legs
  - Red, oozing sores on back – there are usually more than one, and they make stripes across the back rather than following the length of the back bone
  - Normal appetite, urination, defecation, and body temp.
- Usually lasts 2-4 days

Dippity Pig Syndrome

- Happens most often in small pet pigs, occasionally in show pigs, and has been reported a few times in farm pigs
- **Cause:** The cause of Dippity Pig Syndrome is not known. There is some evidence, based on biopsy results, that it may involve a herpes virus (like shingles in the human being). There is evidence that it occurs in some family line
- **Treatment:**
- This condition will resolve after 2-4 days with no medical intervention
- Reduce stress in the environment
- Isolate the pig from people – these pigs are very painful. In some cases, even blowing on their backs will cause a collapse. They need to be left alone to rest.

Enterocolitis

- resulting from infection of Salmonella Typhimurium. Typically occurs after weaning but can also be from food contamination or exposure to carrier animals or contaminated feces.
- Pigs will present with mild to severe diarrhea with blood and mucus. Pigs may also develop rectal strictures, megacolon, and rectal prolapse. Untreated cases may be fatal. S. typhimurium is also zoonotic.
- Diagnosis is through signalment, history, and fecal culture or PCR.
- Many Salmonella spp are antibiotic resistant so a C/S is recommended Parenteral gentamicin at 2.2 mg/kg/day for 3 days may be effective while awaiting lab results.
- There is a vaccination for swine but it has not been used much in pot bellied pigs.

Erysipelus

- caused by bacteria Erysipelothrix rhusiopathiae.
- This bacteria will cause characteristic diamond shaped lesions on the skin.
  - Without treatment the pig can develop arthritis or endocarditis. This bacteria can also cause erysipeloid in humans.
- Bacteria entering body through lymphoid tissue such as tonsil, intestinal lymph, or breaks in skin.
  - Septicemia
  - organisms tend to localize in skin, heart, and joints.
  - **ZOONOTIC: localized skin infection in people**
- Clinical signs
  - high fever (104-108) and produces characteristic diamond skin lesions.
- Chronic disease
  - endocarditis or chronic, nonsuppurative polyarthritis with lameness
- Treatment
  - Penicillin-drug of choice but if they have a chronic sequel are not treatable- cull
- Immunization- given at weaning and repeated every 6 months

Melanoma

- Common skin tumor in potbellied pigs. Tumors should be removed and evaluated for malignancy and metastatic possibility via histopathology.
- Melanomas may spontaneous regression along with depigmentation of the hair, skin, and iris.
- Life expectancy is typically normal if there is no metastasis.

Pneumonia

- Can result from a variety of pathogens. Most common cause is Mycoplasma hyopneumoniae flowed by secondary bacterial infection with Pasteurella multocida.
- Cases in Pot bellied pigs are more severe due to their relatively small lung capacity.
- Clinical signs will include coughing , lethargy, and fever.
- Young pigs contract these infectious agents from their dams or from mixing with infected pigs after weaning.
- Antibiotic treatment may be effective against P multocida as this is the predominant organism when coughing is present.
- Vaccination is recommended for young pigs. Older animals should be vaccinated if exposure is a concern.

Streptococcus suis

- Bacterial cause- *Streptococcus suis*
- ***Zoonotic Disease***
- Initial clinical signs include fever, anorexia depression stiff gait, blindness, muscular tremors and ataxia. Followed by recumbency, paddling and death.
- Acute disease sudden death.
- Causes acute, often fatal, meningitis in pigs younger than 12 weeks of age.
- In humans: Meningitis, deafness, septicemia, epicarditis, toxic-shock syndrome

Swine Influenza

- causing a viral pneumonia in potbellied and domestic swine
- Viral disease (H1N1)
  - produces high fever, up to 108° F, anorexia and deep, dry "barking" cough.
  - high morbidity (nearly 100%) and low mortality.
- Clinical signs of epizootic form are dramatic, distinctive, and highly suggestive.
- No specific treatment, just good nursing care and antibiotics for prevention of secondary respiratory infections.
- Vaccines available
- Zoonotic disease
  - Causes serious illness and even death in humans
  - Veterinarian's responsibility to prevent infected animals from appearing at public exhibitions

Tetanus

- Contamination of a wound or break in skin with Clostridium tetani
- C/S: muscle rigidity, anorexia, hypersensitivity, stiffness of legs and muscles, an erect tail and muscular spasms of the ears and face
- This can be prevented by vaccination or administration of an antitoxin following an invasive procedure.

Chronic kidney failure

Common cause of death in geriatric potbellied pigs.

Clinical signs include lethargy, anorexia, dehydration, azotemia, decreased body temp, and foul breath.

Treatment is symptomatic -fluid therapy, antibiotics (procaine penicillin 22,000 IU/kg/day, IM, for 3 days for milder cases)

Psychogenic Water Consumption

- Most common in young pigs presenting with polydipsia and polyuria.
- Pigs may develop a habit of drinking water and urinating frequently because of possible boredom or unknown causes.
- Other UT disorders and diabetes insipidus should be tested for initially.
- Determining the daily water intake and urine output can help rule out the diagnosis if that water consumption and urination are found to be normal.
- Relieving boredom may be helpful to change this behavior. Pigs ttypically will grow out of this behavior.
- If water is restricted and offered only with meals, care must be taken to prevent salt toxicity.

Surgery and Anesthesia

- Common anesthetic drug combinations:
- Tiletamine and zolazepam
- Acepromazine and ketamine
- Telazol and xylazine
- Xylazine and ketamine
- Xylazine, ketamine, and butorphanol
- TKX- Telazol, xylazine, and ketamine
- Propofol and medetomidine
- Medetomidine and midazolam
- "Triple drip"- Glyceryl guiacolate, ketamine, and xylazine
- Propofol
- Thiopental

Intubation

- Isoflurane is the preferred anesthetic gas for potbellied pigs. Due to the anatomy and the prevalence of laryngospasms, intubation can be challenging. The arytenoids can be sprayed with 2% lidocaine to facilitate easier intubation. A laryngoscope with a long blade is also helpful to visualize the trachea. When inserted past the arytenoids, the laryngeal ventricle can cause difficulty further inserting the ET tube. If this occur, pull the ET tube back slightly and rotate the tube 180 degrees. The tube should then be continually and gently further inserted. The tube can be secured behind the ears or under the jaw. Do not tie around the nose as this can cause edema.

Castration and Ovariohysterectomy

- Both sexes can be fixed as young piglets. Males can be castrated as early as 3-8 weeks of age and females between 6-8 weeks of age. Castration is strongly recommended to decrease aggressive behaviors. Female potbellied pigs are extremely prone to uterine tumors and it is strongly recommended that unless used for breeding, these animals be altered. Both sexes if left intact can develop a variety of behavioral problems that can be very undesirable to owners. Boars also develop a strong musky odor emitting from the prepuce.

Questions??

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