

MAKING PET PIGS PART OF YOUR PRACTICE

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Pot-bellied pigs have been in the United States for 25+ years. Their popularity and initial cost peaked quickly as with most exotic species introductions. However, unlike most introduced “pet fads,” pig ownership has remained quite strong with new potential pig owners now being able to easily afford the low initial outlay. During these years much has been learned about living with and caring for them as pets. Veterinarians have been faced with the numerous difficulties of having pet pigs as patients. Many veterinarians, due to the fear, anxiety and disruption pet pigs cause in their practice, have refused to see them at all. Some who are willing to see pet pigs have done a poor job of educating themselves on the care and techniques required to competently handle them. As a result many pig owners have a poor opinion of the veterinary care given to their beloved pig. My goal in these short presentations is to help you as veterinary practitioners understand through my experiences how to competently integrate pet pigs into your veterinary practice.

The size of pet pigs is quite variable, most will stand between 14 and 22 inches at the shoulder, much shorter than a canine of equal weight, with 70 to 160 lb being considered the normal weight range. Domestic pigs can reach over 800 lb). Rarely will I see a properly fed healthy mature pet pig below 50 to 60 lb; these petite specimens will almost always have nutritional and caloric deficiencies or a disease-stunted history. Pigs reach half their adult weight and 80% of their adult frame size by 1 year of age. Pigs will continue to grow slightly until 4 to 5 years of age when their growth plates completely close. Life expectancy is normally 17 to 20 years, but I know of 2 pigs that have reached age 23. I recommend a professionally formulated balanced commercial pet pig food to be the basis of their diet. Feeding ½ to 1 cup fed dry or wet twice daily with ad lib water is usually adequate. During warm months while grazing is available, this amount will need to be significantly reduced to maintain optimum body condition.

Pigs are able to reproduce at a young age. Females on good nutrition will often cycle as early as 10 to 12 weeks of age. Males are sexually active much earlier and may be fertile as early as 6 to 10 weeks of age. Gestation length is the same as domestic pigs 113 days. Pigs have had litters as early as 5 to 6 months of age, so gauging the eventual size of a newly purchased baby pig on the size of its parents should be viewed in conjunction with parental age and nutrition.

EXAMINATION

Make sure exam room doors are shut before getting the pig out of the transport crate. If the room is too large, catching a pig is difficult. If it's too small, there'll be no room for our restraint techniques. So 6 x 6– to 12 x 12–foot rooms are preferred. I often use a pig board or sorting board on nonsocialized pigs, if necessary. Noise is the next consideration. Pigs scream when they don't

get their way or are being restrained against their will. So disruption of other clients and their pets is a concern. We solve this by using a room off to one side of our practice away from the small animals and owners. This room also has a brick floor, which allows the pig to walk comfortably without slipping or hesitating, aiding in my visual physical exam. I use rubber-backed throw rugs in the other areas where the pigs will need to walk. Most vets think auscultation and temperature are next, but few pigs (<1/10) will allow these invasions of personal space. Rarely, after several minutes a really quiet pig may allow auscultation. And good luck chasing after a pig with your thermometer. Instead after entering the exam room, you have an excellent opportunity to get a good history and watch the pig's ambulation attitude and behavior, skin condition, respiration, body condition, eye and ear drainage, and understand what concerns the owner has before proceeding. This observation and questioning should be second nature to veterinarians. Now, if the pig is calm and amenable to auscultation, go ahead and try, but most times the pig will not allow it. Normal respiratory and heart rates are difficult to establish on an excited pig. Even temperature can be elevated by 1 or 2 degrees after a car ride, so much of your initial diagnosis will be made from visual exam and history. If routine care is all that is required at this visit, then hoof trimming, tusk trimming, vaccinations. and worming are next to think about.

RESTRAINT TECHNIQUES FOR ROUTINE CARE (“PIG-FLIPPING”)

Many veterinarians have attempted to trim hooves on a standing pig by lifting one foot at a time. This method requires keeping the pig somewhat stationary during the trim. Pig wrestling is the result, with potential injury to pig and people. No wonder vets and pig owners fear this ordeal. Anesthesia has been the other alternative for routine care but the cost and risk for side effects have been substantial. I have been using a “flip” technique for over 25 years, and most owners are amazed at the ease of routine care using this method.

There are two ways I have learned to “flip” and hold unsedated pet pigs, a 1-person flip technique and a 2-person flip technique. In the 1-person method, I prepare a soft spot, such as a foam pad, blanket, or straw on which to lay the pig and place my tools beside it ahead of time. Wearing my gloves, back brace, eye and ear protection, I maneuver so that the pig is facing away from me. Trying to grab a pig that is facing you is almost impossible and also dangerous. Do not use food to manipulate the pig as a pig with food in its mouth may aspirate when rolled onto its back. A pig sorting board can be very helpful to position and maneuver the pig. Reach down, when it's facing away from you, with two hands and on both sides of the pig grab the web of skin between the elbow and the chest and lift the pig's front legs off the ground all in one motion. This will usually cause the pigs' rear legs to step forward and leave the ground as you lift high enough to put the pig on its rump between your ankles. Simply step backward and spread your knees, lowering the pig onto its back, keeping a hold of its elbows until the pig is in full contact with the ground. All 4 legs are now pointed skyward. Tuck your

toes under the pig and inward against the pig's flanks and allow him time to stop struggling (not stop screaming). Your hands are now free to let go of the front legs. With your hands free you can start trimming the rear feet and dewclaws, which you are facing. This is a good time to take a rectal temperature if necessary. To trim the front feet, simply turn exchanging the position of your own feet while holding both front legs of the patient. Now you can trim tusks vaccinate and perform anterior examinations as needed.

The other technique involves 2 people, 1 to catch the pig in a similar manner as in the 1-person method. But instead of lowering the pig between your knees, lift and transfer the pig to the second person. This person is the holder, who is sitting on the floor back against the wall with legs apart, who then grasps the pig behind the elbows and squeezes slightly with their thighs and knees to keep the pig from rolling back onto its feet. This puts the pig with its head resting in the holder's chest and abdomen and its rump on the floor between the holder's ankles. Both persons should wear hearing and eye protection as most pigs will vocalize constantly or at least intermittently during the trim and exam. Be careful of sharp tusks and swinging of the head against the holder as this is quite possible if the pig is positioned too high or too low on the holder. Some holders prefer to wear a life jacket for padding and protection. The catcher, usually the veterinarian, then proceeds to perform the routine care required.

HOOF TRIMMING

My favorite trimming tool is an orange-handled pruning shear found in the farm catalogs. This is my primary hoof shaping and hoof wall removal device, but does require physical strength. In situations where large amounts of hoof needs to be removed or where the hooves are very hard, an equine hoof nipper is an excellent tool. I personally use a back brace, ear protection, gloves, and wear glasses to ensure personal safety whenever I use any flip technique for routine trims; silver nitrate sticks or blood stop powder if over trimming occurs; and a pig sorting board to position the pig for capture.

Principles of trimming are fairly simple. Trim the pig's feet to a natural shape. The bloodlines on the hooves and dewclaws on white-footed pigs act as a guide. On black-footed pigs, you will notice a slightly softer texture as you approach the sensitive layers and at the hoof wall you will actually start to see a faint white line. Be careful; trimming farther will result in bleeding. Dewclaws need to be trimmed at an angle consistent with the dewclaw pad by following its contour out onto the nail. This angle can be trimmed safely and then the tips rounded slightly to avoid sharp points. The soles of main claws are also trimmed flat to the angle of the footpads. Only dubbing off long toes is not acceptable and in reality does little good for the ambulation of the pig.

TUSK TRIMMING

After the feet have been trimmed I use the rubber-coated handle of my Dykes pliers to look into the pig's mouth by deviating the cheek laterally looking for excessive tartar, loose teeth and other abnormalities (ie, tumors, infections, foreign bodies). Never put fingers in a

pig's mouth. I know 3 people who have lost whole or parts of fingers when bitten by a pig. I use a Gigli wire to trim the lower tusks, which have the consistency of ivory, about 1/4-inch from the gum line. This is done while cautiously holding the lower lip back to avoid abrasions caused by the wire. The upper tusks are made of layered fibers and cut well with the pony nipper. Note that the gums tend to extend onto the dorsal surface of the upper tusks so some gum bleeding is normal post cutting. While restraining the pig in this manner, eyes can be observed, vaccinations given, and ears examined somewhat as well as the lower jaw checked for abscesses of the lower tusk, common to older male pigs.

VACCINATIONS

Most pigs will show little to no reaction to injections while being restrained on their backs. I use a multivalent vaccine that contains erysipelas, *Pasturella*, and *Bordetella* and makes sense even in house pigs that have some exposure to soil and other pets. I have seen many cases of erysipelas in pet pigs and occasionally it has been fatal. I only use leptoparvo vaccines on breeding pigs. Rabies vaccine is not approved for porcine use in the United States, but I have seen no harmful effects in the pigs where it has been used. My preferred vaccination site is 2 to 3 inches behind the ear 2 to 3 inches off the dorsal midline. This location is easily accessible while the pig is on its back. An avermectin injectable wormer is then given and, if mange mites are a problem, 3 more oral doses are sent home to be given at 7- to 10-day intervals with food.

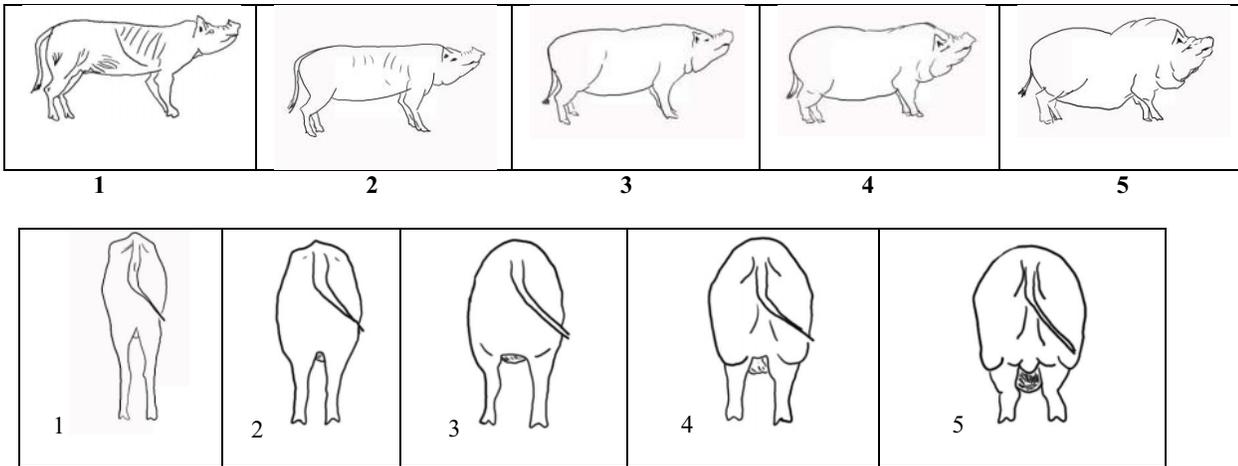
OBESITY

In treating pigs for the past 25 years, I've come to realize that obesity is the most common problem I encounter. Obesity is also contributory to many of the problems we find in our pet pigs. Fat-associated blindness or mechanical blindness due to excessive fat and skinfold is a sure giveaway that the pig is very obese. Sometimes the complaint is even directly related to this, such as "He snaps at me when I come beside him" or "He's got excessive discharge from his eyes" or "He bumps into things and spooks" or he can't go down steps anymore." Lameness also is associated with obesity. Elbow arthritis, often severe, is consistently seen in older pigs in my practice, particularly in overweight pigs that have stairs in their environment. Excessive weight makes joint wear and tear worse and by the time pigs are 7 to 10 years old, most, if not all, show some radiographic arthritic changes to the elbows. How do I know if a pig is overweight?

Visual body condition score charts are already used in farm pigs. But there are no standard body condition score charts available for pet pigs. Here's my personal hand drawn chart I use to educate my clients about appropriate body condition for their pets. In my opinion young pigs 5 years of age or less should score a 2. Pigs over 7 should score between 2 and 3.

ANESTHESIA IN PET PIGS

I use only inhalant anesthesia. Isoflurane is my personal favorite. The reasons I don't use injectables is simple. Finding a vein on an unsedated pig is ex-



tremely difficult. Intramuscular injections used for sedation are often in actuality intra-fat injections and require overdosing to achieve the desired sedative effect; this results in extremely long recovery times, sometimes 24 to 48 hours. Recovery time with inhalant anesthesia is short, often 10 to 30 minutes depending on anesthesia duration and depth.

When anesthetizing a pig, I give no premeds; I simply mask them down. This is done using a regular large cone mask with the rubber face seal taped to the hard plastic mask to avoid it slipping off if the pig struggles. A gallon plastic jug, with the bottom removed and the cut edge padded, works well for larger pigs or boars with longer tusks. The pig is caught behind the front legs and lifted to sit on its rump. The holder cradles the pig between his knees and may stand or sit on a bucket or stool. The mask is then applied with the oxygen flow rate at 4 L/min. The isoflurane is turned to 5% to facilitate quick anesthesia induction. We use a towel wrapped around the junction of the mask and face to help seal the lateral commissures of the pig's mouth. Light finger pressure on the towel over the commissures will keep the pig breathing through the mask and not room air. Most pigs will scream, but obviously to scream is to breathe so induction continues. Watch the bag to best position and seal the mask for quick induction. The bag, not chest movements, is the best indicator of inhaled volume. Induction usually takes 2 to 5 minutes until relaxation occurs. I use a foam pad and a heating pad to avoid heat loss to the surgery table. (Now place pig in a dorsal recumbent position or, if you are going to intubate for a longer or an oral procedure, place the pig in sternal recumbency.) I intubate pyometras, any pig 8 years or older, or any obese pig in which jowls and pharyngeal fat will obstruct the airway. In pigs with pyometra or uterine tumor, place an ear catheter at this time and start fluids.

INTUBATION

Intubation is another difficulty that pig veterinarians face. Pigs must be fairly deep before intubation is attempted; usually 5 to 10 minutes at 5% isoflurane with an oxygen flow rate of 2 L/min you only have 30 seconds to place the endotracheal tube before they start to have jaw tone again. Use a long-bladed lighted laryngoscope and about a 7.5 red rubber endotracheal tube with an aluminum rod for stylet on an average 100-lb pig.

Tracheal size seems to be consistently smaller than a similar-weight dog but similar to a dog of the same frame size. Have someone open the pig's jaws by grabbing the snout and using gauze placed in the interdental spaces in the lower jaw behind the incisors. Avoid the tusks! Pigs' jaws do not open as wide as a dog's or a cat's, so visualization of the pharynx is more difficult. The epiglottis is entrapped behind the soft palate 95% of the time and, by using the tube, with stylet, can be unhooked from this position. Then place the end of the tube at the arytenoids and gently push through about 2 cm. Leave the endotracheal tube extended about 5 cm beyond the stylet. After entering the arytenoids cartilages, spin the tube 180° and allow it to push in an upward direction while removing the stylet. This is quite different from small animals, but is necessary due to the conformation of the pig's larynx and trachea where there is a ventral floor fornix, which, if one pushes downward, may be perforated. Advance forward 2 to 3 cm and inflate the cuff firmly and tape the tube in place. Now lower the isoflurane percentage down to 3 to 3.5. A brief 30-second period of apnea is common. I usually maintain, during surgery, isoflurane levels of 3 to 3.5 and oxygen flow rates 1.5 to 2 L/min. Watch the bag! Chest movement does not mean ventilation, especially if the animal is not intubated. And be aware that the normal red rubber tubes are short for long-snouted pigs and will have to be taped in place carefully at the side of the pig's mouth to facilitate proper placement in the trachea. Tape directly to the red rubber and around the pig's opposite ear or tape around the upper jaw.

VENIPUNCTURE AND CATHETERIZATION

Many situations require blood drawing for diagnostic purposes. Pigs are notoriously uncooperative, and few will allow venipuncture while unsedated unless nearly moribund. Therefore, it is almost always necessary to mask-induce anesthesia with isoflurane and then draw blood and place catheters as necessary. There are the 4 main sites I have used for venipuncture. The one I like best is located on the medial surface of the cannon bone just cranial to the 4 to 6 scent glands located on the palmar medial surface of the front leg. I use a tourniquet, above the elbow if possible, and a 20-gauge, 1-inch needle. The vein is just beneath the skin and can often be visualized on a pig of moderate body condition.

Getting 3 to 5 mL of blood is usually quite simple at this location. Another site is the ear veins which, although clearly visible, are quite small. Getting usable volumes of blood from these is difficult, but it is my preferred site for catheter placement. I prefer to use a 20- to 22-gauge, 1.5-inch catheter on a 100-lb pig. I glue and tape it to the ear after placing a roll of gauze in the ear canal to give shape and support to the ear. I then anchor an extension set to the hair on the dorsal midline of the pig with tape. This helps avoid unwanted catheter pullouts, which require another anesthesia event. I have also placed catheters in all 4 legs on several pigs using either cephalic or saphenous sites. Some pigs, however, are very good at removing catheters from their lower extremities. Blood in small quantities can also be obtained from the orbital sinus, which lies ventrally behind the eyeball. This is accessed through the medial canthus using a 1.5-inch, 18-gauge needle. Care must be taken to avoid the globe while aiming ventromedially and behind the eyeball itself. I have done this technique on several unsedated pigs while being restrained in dorsal recumbency. It is not for the faint of heart. The last site for drawing blood is the jugular and/or anterior vena cava. I have used this site hundreds of times on farm pigs from 20 to 900 lb while snared or hand held but do not routinely use this site in pets unless euthanizing, due to the slight risk of death associated with this technique. I access the vena cava via the right thoracic inlet, aiming at the upper left scapula advancing slowly in small forward thrusts while keeping vacuum on the syringe. This method of advancement helps to avert rolling of the vein off the needle point. Occasionally, just after penetrating the skin, I will hit the jugular vein by chance and am able to draw blood with only a shallow stick. Otherwise, using a 3- to 4-inch, 16- to 18-gauge needle

will be necessary. I'm sure other sites might have been used by other practitioners, such as the lateral abdominal, saphenous, or femoral vein, but in my experience these 4 have been the most practical, with the ear and leg veins being the best for catheterization of an anesthetized pig.

EUTHANASIA

As the population of pigs has aged I have been frequently asked to euthanize pet pigs for clients. This procedure is relatively easy in our hospital where mask induction followed by an anterior vena cava injection is effective and painless. However, as practitioners, we are often faced with field euthanasia with clients surrounding us as we perform this kindness. The problem is how to get access to a vein without a tremendous battle, and sedation is the best answer. I prefer to use a large IM dose of 100 mg xylazine, usually 5 mL/100 lb, along with ketamine mL/100 lb. Sedation cocktails of telazole ketamine, and xylazine have also been used by other practitioners. To inject the sedative, I scratch the pig vigorously behind its ear with my fingers then quickly insert the needle in the same location. Inject quickly and let the needle and syringe remain in the pig for 1 minute to avoid leaking of drug back through the injection site. (Please educate the owner before you do this.) This "scratch and stick" technique works well on most pigs, especially if they are distracted with food. Then back off for 10 to 20 minutes and return with 20 mL of euthanasia solution per 100 lb of body weight and in quiet, slow motion, to avoid stimulating the pig, perform the vena-caval IV injection using a 4-inch, 18-gauge needle. This procedure can usually be done fairly gracefully; however I have had a few awkward situations. So, if possible, choose in hospital euthanasia.