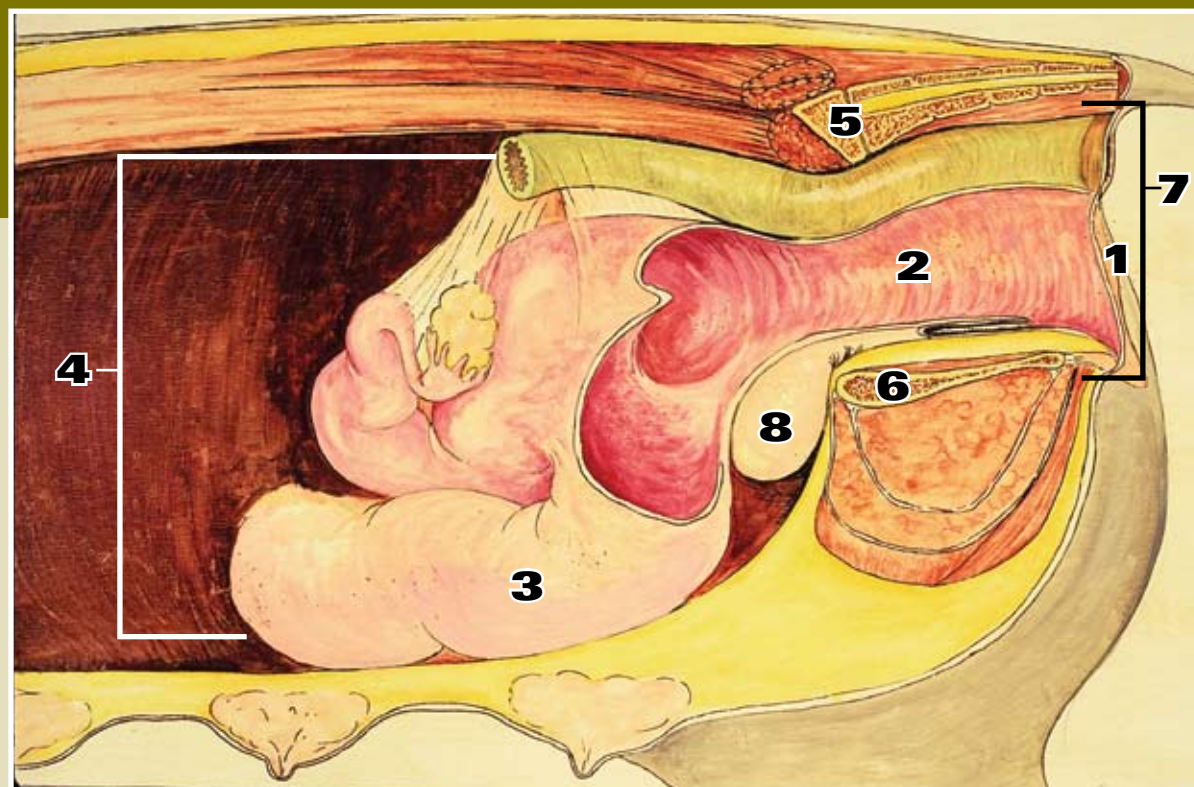


SEE WHAT YOU FEEL

Anatomy of the Sow



This cutaway diagram provides a quick anatomy lesson to help familiarize you with the parts of the sow that you cannot see. It also shows some of the obstacles pigs encounter as they move through the birth canal during the farrowing process. Numbers are keyed to body parts and internal organs, as follows:

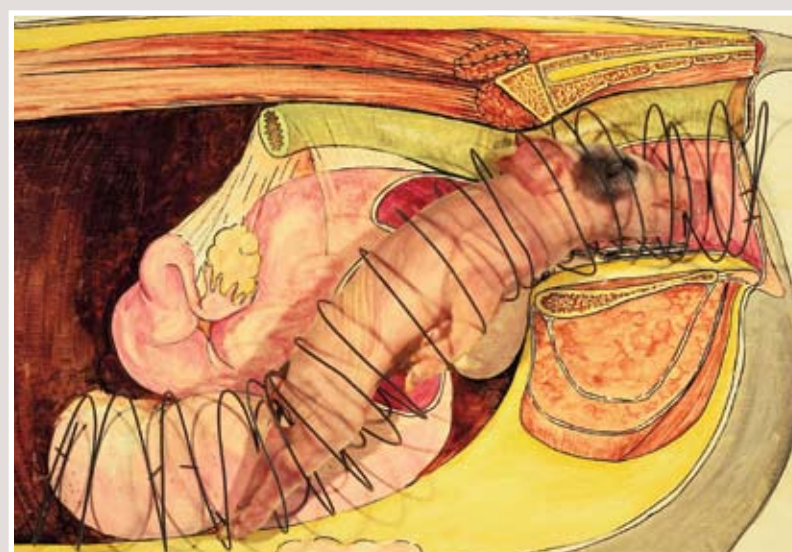
- 1. Vulva:** The opening of the birth canal.
- 2. Vagina:** The area from just inside the vulva to the cervix. In a sow that is dilated and ready to farrow, the vagina, cervix and uterus blend together.
- 3. Uterus:** The diagram shows a shortened version of the uterus, which is normally 5-6 ft. long. The uterus is divided into two parts – each occupied by the pigs ready to be delivered.
- 4. Abdominal Cavity:** In addition to the reproductive organs, this area contains the small intestine and the colon. The colon runs above the birth canal and extends back to the rectum.
- 5. Sacrum:** The end of the spinal column, which is connected to the lower part of the pelvis.
- 6. Pelvis:** This and the surrounding pelvic bones form the bony area of the birth canal. The “pelvic brim” is the front portion of the pelvis bone.
- 7. Pelvic Space (Pelvic Cavity):** The area occupied by the rectum, vagina and a portion of the bladder, which extends forward to the brim of the pelvis.
- 8. Bladder:** Extends over the brim of the pelvis, just below the vagina.

The illustrations show the normal position of the uterus, extending forward as you might examine a sow over the brim of the pelvis. To help you visualize what you cannot see, a coil spring was attached to the delivery position diagrams to give the birth canal a more three dimensional appearance. The coil spring also helps illustrate normal and abnormal pig presentations in the birth canal.

Normal Delivery Positions

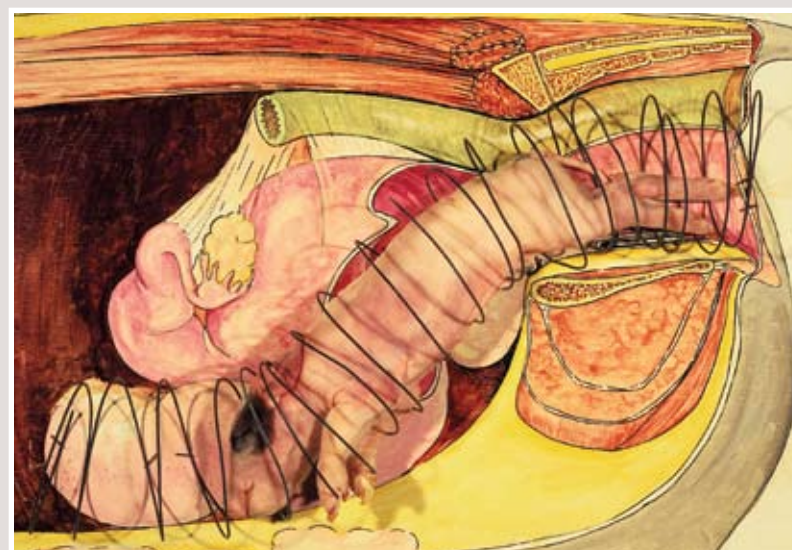
Anterior (forward) Presentation

When the pig passes head-first through the birth canal, the front legs are folded back against the pig's chest wall. The back legs trail behind. About 55% of pigs are born in this head-first position.



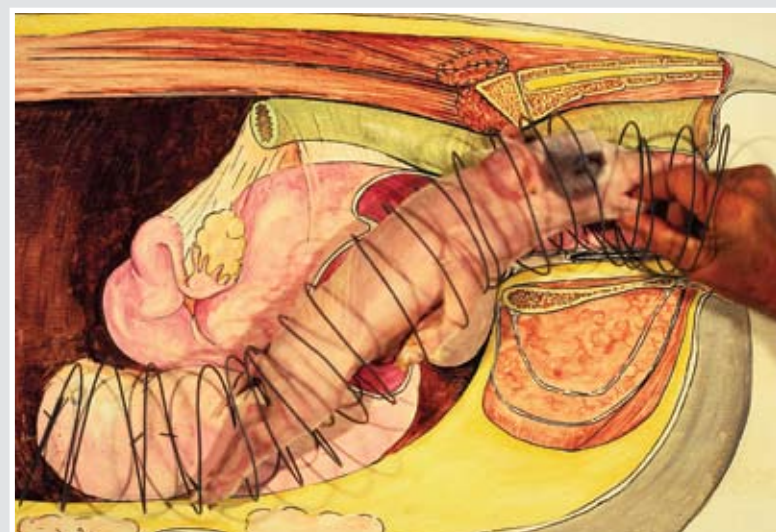
Posterior (backward) Presentation

These pigs are born with their back legs coming first, their front legs are extended under their chin. This is also known as the “caudal” position. About 45% of pigs are born this way.

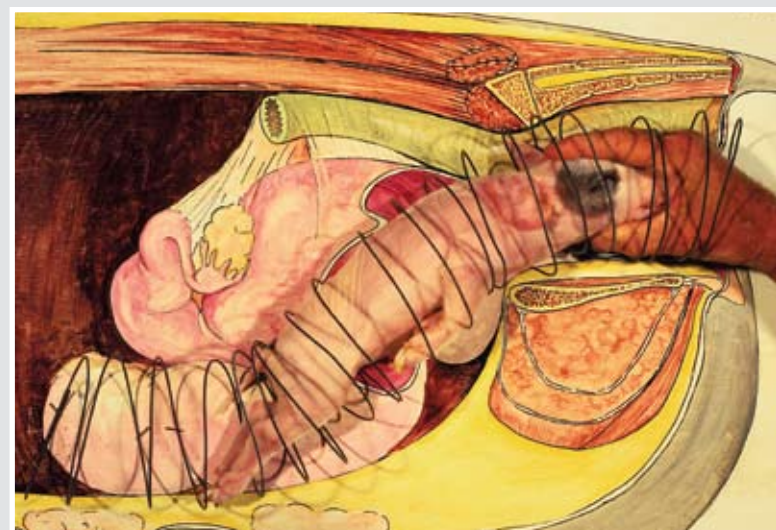


Manual Delivery Techniques

To get a good grip when a pig is coming head-first, grasp the ridge of the nose with your thumb and insert your index finger into his mouth, behind the canine (needle) teeth, pinch thumb and index finger together, and pull. Or, reverse the thumb and index finger configuration, placing your thumb in the pig's mouth, wrap your index finger around its nose, pinch and pull.



Another option, insert your index finger in the pig's mouth, place your thumb under his chin, grasping the mandible or V-shaped jawbones, pinch and pull (top photo). Or, reversing this configuration, place your thumb in the pig's mouth, press your index finger under the lower jaw, pinch and pull.



If the sow's pelvis is big enough and her uterus well dilated, you may be able to pass your hand over the pig's head, placing your index finger behind one ear, your middle finger behind the other ear, then press your thumb against the lower jaw, squeeze and pull gently (bottom photo). Do not force your arm too far into the reproductive tract. Doing so can damage sensitive tissue or contaminate the reproductive tract.

Use Instruments With Care

Most sows deliver pigs without assistance, but occasionally they may need your help. If you have seen the signs of labor (bed-making, restlessness, abundant milk, straining), but no pigs have been born within 1-2 hours or if 1-2 hours have passed between births, the sow should be examined. Begin by following these important rules:

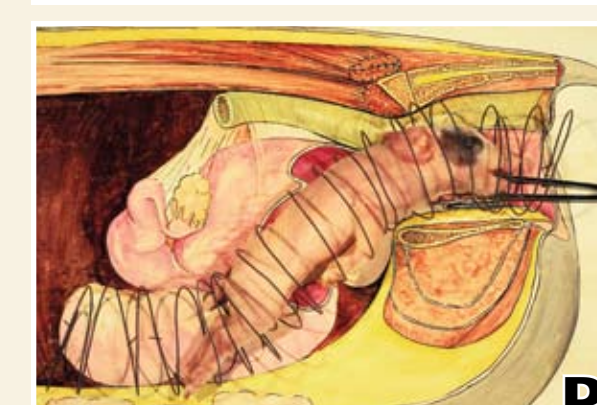
- Rule No. 1 – Be very gentle.**
- Rule No. 2 – Be very sanitary.** Wash your hands, arms, plastic sleeve and the sow's vulval area thoroughly with warm water and antiseptic soap.
- Rule No. 3 – Apply lubricants liberally;** good lubricants are available from veterinarians or veterinary supply houses.

With particularly difficult births, you or your veterinarian may choose one of several instruments designed to help grasp the pig and provide a little extra traction. If the pig is alive, you may choose not to use instruments because they may tear or injure parts of the pig.

On the sow's behalf, a great deal of patience is required when using instruments and traction. If you pull too hard, you will tear sensitive tissues in the sow's reproductive tract. If you tear or bruise vaginal tissues badly, the sow's chances of survival and ability to nurse a good litter are seriously compromised.

Be sure to wash and disinfect instruments before use. The three most common obstetrical instruments include:

Pig Snare: (A & B) Probably the most useful and readily available instrument. The snare can be passed inside the birth canal without damaging sensitive tissue. The snare cable should be stiff enough so that it can be worked back over the pig's head with the fingers, pulled tightly so the pig can be successfully pulled out. Be careful not to pull too hard, particularly if the pig is partially decomposed because the cable may cut through the delicate tissue, thus losing the good hold needed to extract the pig. If you cannot get the snare over the head, slip it over the nose and tighten it behind the needle teeth, much as you would snare a full-grown pig for bloodtesting. Secure the cable snug with a finger and pull the pig out. See photos for examples.



Obstetrical Forceps: (C & D) Veterinarians commonly carry some type of forceps and are more skilled in their use. The Knowles forceps (shown) are used to grasp whatever you can get hold of – usually a pig's snout, jaw or foot. Remember, the forceps can cause trauma and must be used with great care to avoid injury to the sow or the pig's body part being grasped.

Half-Moon or Pig Obstetrical Forceps (not pictured): This style of forceps is popular with veterinarians when intervention is needed. About 22 inches long, the two stainless steel rods are hinged at the center. The forceps has flared handles on one end, two half-moon-shaped clamps on the other. The half-mooned end of the forceps is passed gently through the vulva and into the birth canal. Protect the birth canal from the hinged end by placing a finger over the hinge. When the forceps reaches the pig's head or hips, spread the forceps and allow it to slip over and behind the pig's head (neck) or hips (pelvis). When the forceps is well seated in this position, gently close the half-moon-shaped clamps and pull with firm, steady pressure. Be very careful. If the forceps slips off the pig, the sow could be injured. Ask your veterinarian for guidance to improve your skills with these forceps.

Remember: Always wash and disinfect hands, arms and all equipment thoroughly before assisting sows. Be patient. Be gentle. Lubricate well. Consult your veterinarian for professional advice and assistance.

Vaginal, Soft Tissue Injuries: Too much intervention, manipulation, rough handling or a dry birth canal often causes excessive swelling in the vagina, thus limiting the space needed for pigs to pass. Occasionally, a hematoma (blood clot that forms in the uterine wall) obstructs the birth canal and prevents pig passage.

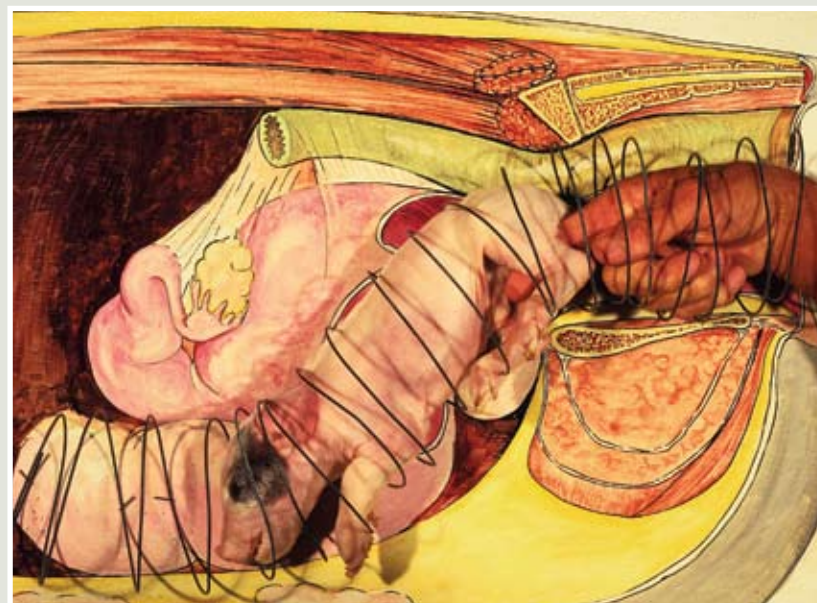
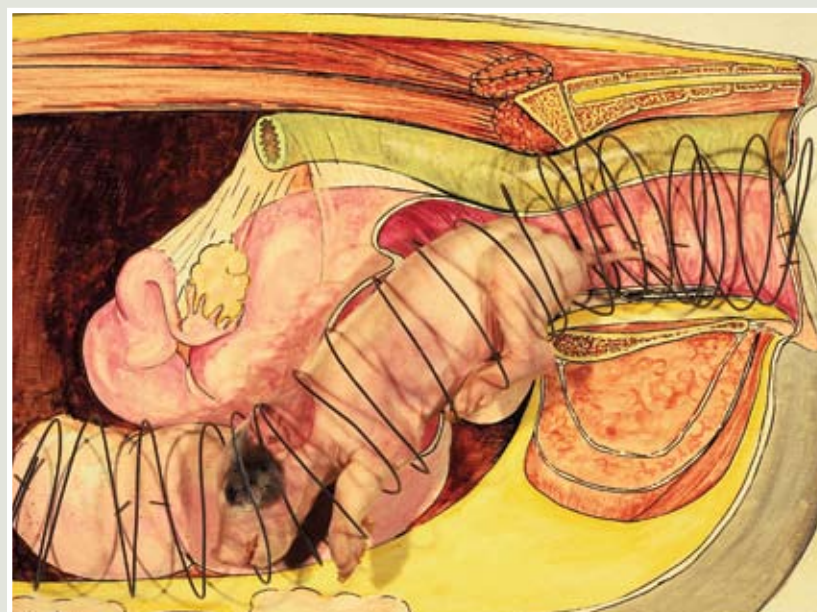
Under-Developed or Injured Sows: A small pelvis may not provide enough room for pigs to pass through the bony structure. Traction may help pigs pass through. Occasionally, a sow with a fractured pelvis may heal with a lump that pushes against the birth canal and obstructs the pigs' passage. A Cesarean section may be required in these cases.

Fat Sows: Excessively fat sows will have fat deposits that crowd the birth canal and, therefore, obstruct the pigs' passage.

Abnormal Delivery Positions

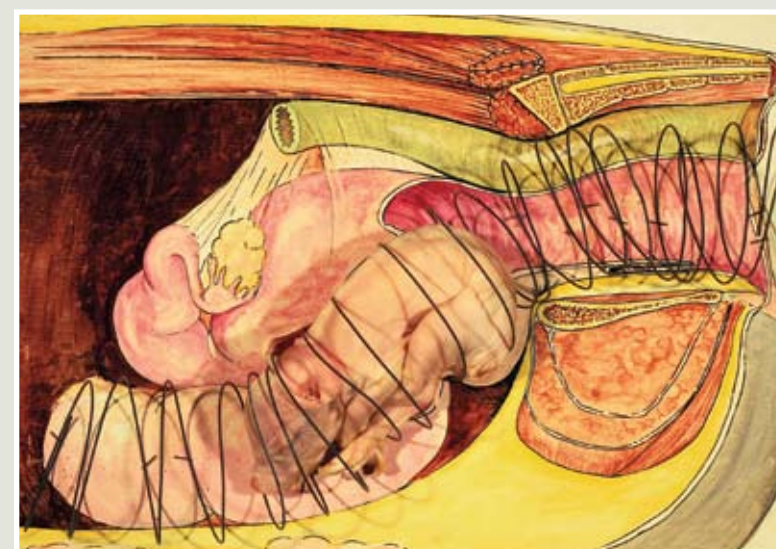
Breech Position

This complication occurs when the pig moves through the birth canal backwards. The pig's rump is caught over the brim of the sow's pelvis, the hocks and legs are caught forward (top photo). This is one of the most common causes of difficult farrowings and can be rather difficult to correct. If the sow is large, gently slide your hand through the vulva and the vagina until you contact the pig. Gently hook your finger around the pig's hocks and simultaneously push the pig's rump and pelvis forward with your thumb or finger (bottom photo). This action will allow you to pull the back legs toward you and position the pig in a normal, posterior presentation so you can pull him out. Rarely can a sow deliver a pig in a breech position without assistance.



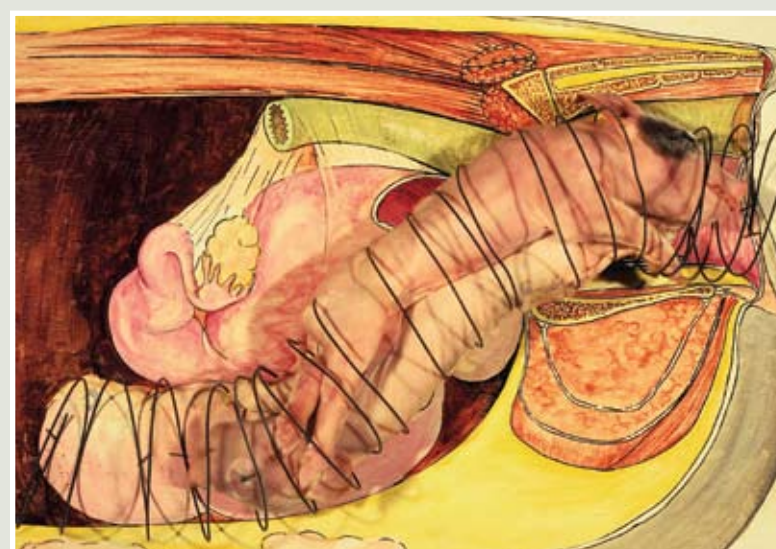
Doubled-Over Position

This is a very difficult position to correct because the pig's backbone becomes wedged in the birth canal. If the sow is small or the pig is fairly large, correcting this problem is even more difficult. This situation can best be corrected using the techniques used to solve a breech presentation. Try to nudge the pig forward so you can hook a finger around the pig's rear legs. Pull the legs toward you to position him in the normal, posterior position. If uncorrected, a Caesarean section may be required.



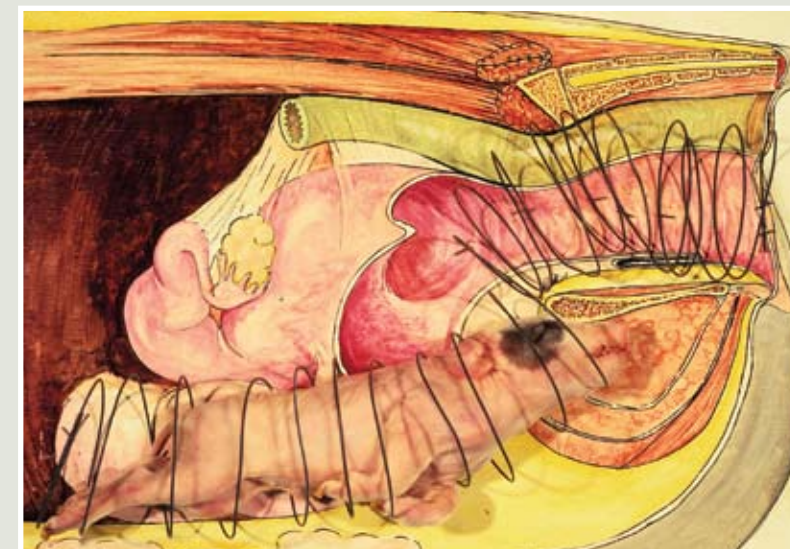
Two Pigs Presented at Once

In this situation, two pigs lying belly-to-belly are passing through the birth canal together. Often, one pig is coming backward, the other is presented head first. Both may come backward or head-first. If you can reach the pigs, usually you can grip one pig and deliver it, then go back to pull the other. In most of these cases, assistance is required because the sow is unable to move the combined mass of the pigs up and into the pelvic area.



Heavy Uterus

A large litter of 14 or more pigs can drag the uterus down along the abdominal wall causing it to form an “S” curve, which pushes part of the uterus underneath the pelvis. Under the heavy load, the uterus cannot contract enough to push the pigs up and over the pelvic brim. Assisting the delivery of the first pig will usually allow the “S” curve to straighten out and the rest of the pigs can be delivered normally.



Other Common Difficulties

Oversized Pigs: Pigs too big to pass through the sow's pelvis is fairly common. If the sow is not assisted soon enough, one or more pigs may die. If pigs begin to decompose and swell up with gas, the situation is critical as the decomposing pigs are poisoning the sow. As the sow becomes exhausted, it becomes impossible for her to push the bloated pigs out of the birth canal. Timely assistance by you or your veterinarian is critical.

Uterine Inertia: This failure of the uterus to contract is blamed for about one-third of problem farrowings. Usually, this problem results from a hormonal or nutritional disturbance. Energy deficiencies are often cited. Mineral imbalances are less common. Uterine inertia may occur in an extended farrowing when the sow becomes exhausted and the uterus loses its ability to contract and push all of the pigs out.

Full Colon (Constipation): The colon becomes very full and pushes down against the birth canal. This crowding may make it difficult for pigs to pass through.

Full Bladder: The bladder holds up to a gallon of urine. When very full, it pushes up against the floor of the birth canal, obstructing the pigs' passage. A normal dose of oxytocin and getting the sow to stand will encourage her to urinate, thus alleviating the problem.