

**Standard operating procedure: SCID pig C-section**

**Date Created:** 6/25/2020     **Date Revised:** 11/7/24

Developed by Tuggle Lab at ISU Dept of AN SCI

**Purpose:** This procedure describes the instructions for completing a cesarean section for SCID pigs using a surgical bubble.

**Procedure:**

1. Sow is given an intramuscular dose of 0.15-0.2 mg/kg acepromazine 30-60 minutes before catheter placement.
2. While the acepromazine has time to work, the surgical bubble can be inflated for the surgery.
3. Sow is loaded into the cart for transfer to the surgery prep room approximately 45 minutes after acepromazine has been administered.
4. Once the sow is moved to the surgery prep room, lidocaine cream 2.5% is applied to the ears to place a catheter, and an intramuscular dose of 0.1-0.25 mg/kg of morphine is administered 15 to 20 minutes before catheter placement.
5. While waiting for the sow, the surgical bubble can be scrubbed after inflating it.
6. The ear is scrubbed with chlorhexidine and 70% isopropyl alcohol. Sureprep is applied to the ear, and a 16gx2" catheter is placed and then secured with a dot of superglue on the hub of the catheter. Tegaderm is placed over the catheter to secure it in place. (See Secure Intravenous Catheterization Method for Pigs Poster PDF)
7. General anesthesia is induced with propofol IV, up to 12 mg/kg or to effect.
8. One liter of lactated ringers with 5% dextrose is started IV immediately after the catheter is secured.
9. The sow is then positioned into sternal recumbency, and an area approximately 20x20 cm in the lower lumbar region centered around tuber coxae is clipped. This area is prepped with chlorhexidine scrub and 70% isopropyl alcohol. Using an 18g spinal needle, lidocaine 100 mg is given in the epidural space.
10. When the sow is sedated, she will be re-positioned into left lateral recumbency and moved to the lift table, keeping her on her side for the surgery.
11. Once on the lift table, her right side is clipped and scrubbed with chlorhexidine scrub from the flank to the last rib and from the udder line halfway up the right side.
12. Her feet are covered with long cuff gloves and secured with Elastikon tape.
13. The sow will then be transferred to the surgery room, taking care not to knock over the surgical bubble.
14. After moving the sow to the surgery table, the top side of her udder will be scrubbed with chlorhexidine scrub and 70% isopropyl alcohol again before drying with a sterile towel.

15. The surgical bubble will be carefully transferred down along the sow and put into place for surgery. Then, the surgical bubble and surgical site are sprayed with a thick and even coat of Scotch Super 77 Multipurpose Adhesive Spray.
16. After applying adhesive to the sow and the bubble, the surgeon will put their arms in the surgical bubble gloves and adhere the bubble down securely to the sow.
17. The supplies, like sterile towels, reversal, nasal aspirators, and umbilical clamps inside the surgical bubble, can then be prepared to receive the pigs by the piglet reviver. The sterile surgical pack can be handed off to the surgeon.
18. A 20 cm cranial/caudal incision is made about 10 cm dorsal to the udder line and about 10 cm cranial to the flank using a #10 blade. The incision is extended using Mayo scissors to incise the peritoneum. The right horn of the uterus is exposed.
19. An incision is made over one piglet. An umbilical clamp is placed about 5-10 cm from the piglet's body wall once it is exteriorized. The umbilicus is cut with the Mayo scissors.
20. The process is repeated until each horn has been exposed and palpated.
21. Piglets are passed to the piglet reviver to dry off the tongue, and administer 1-2 drops of Naloxone 4 mg/ml under the tongue.
22. The piglets are then stimulated to begin respirations, using a nasal aspirator to remove fluid from the mouth and nasal cavity.
23. After all the pigs have been revived, they are placed into the sterile drum inside the surgical bubble.
24. The sterile drum is closed off using plastic and bands, then put inside a plastic bag to zip tie shut and transfer to the biocontainment bubble.
25. A person inside the biocontainment bubble will receive the drum inside the plastic bag and spray it thoroughly with rescue before opening.
26. The sealed drum is then removed from the bag and taken into the biocontainment bubble to take the piglets out of the drum. Piglets are placed near the heat mat that is provided inside the pen.
27. Inside the bubble, the piglets will be weighed, microchipped, and given an iron dextran IM injection, the umbilical cord will be tied and cleaned with a betadine swab, a fecal swab will be taken, and needle teeth will be clipped.
28. Baby bottles are used to feed irradiated Calf's Choice Total Gold bovine colostrum for the first 36 hours. Irradiated colostrum will be mixed according to the instructions on the bag and given to the piglets using a baby bottle.
29. Piglets will be shown the Colostrum in bowls within 12 hours of life.
30. Piglets will be provided with colostrum by hand, monitored, and temped at the beginning of every shift for the first 24 hours until stable enough to begin pushing out time between hand feedings
31. Starting day 2, piglets will receive a ration of colostrum mixed with Birthright milk replacer. These instructions are found in the husbandry SOP.