

SOP No: AST 02

SUBJECT: Aseptic Technique for Laboratory Animal Surgery

POLICY: This technique is preferred to AST 01 - Clean Technique for Laboratory Animal Surgery
Surgery must only be performed by fully trained personnel.
Record all surgical details including dose rates and postoperative monitoring on an anesthetic observation or score sheet

PRECAUTIONS: Surgical cap and mask, surgical scrubs (freshly laundered), closed shoes (with clean shoe covers if appropriate),

EQUIPMENT:

Scrub agent
Scrub brush
Paper towels
Sterile gown
Sterile gloves
Sterile surgical instrument pack
Disinfectant (surface)*
Disinfectant (skin) **
70% Alcohol
Small animal clippers
Anesthetic of choice

PROCEDURE:

Preparation of the Skin

1. Mop floor. Disinfect all surrounding benches and surfaces with surface disinfectant*.
2. Anaesthetise the animal and lay on a warming mat.
3. Remove hair from the surgical site using clippers (first direct the clippers in the direction of the hair and then against.). This procedure is best performed in a separate designated preparation room.
4. Remove all hair from the patient by wiping down the coat. Wipe down the table with a moist cloth to remove remaining hair.
5. Give the surgical site a general cleansing with surgical scrub agent and swabs.
6. Lather well until all dirt is removed changing swabs frequently. Include the hair surrounding the site to remove loose hair.
7. Spray a warmed disinfectant sparingly onto the site

and use a circular scrubbing motion, moving from the centre to the periphery. Discard swab after reaching the periphery. Repeat this process four to five times.

8. Spray warmed disinfectant solution sparingly onto the site, and allow to dry. The disinfectant solution is applied a second time by the gowned surgeon using sterile swabs.

Preparation of the Surgeon

A. The Surgical Scrub

1. Wet the hands; dispense scrub and lather hands and arms.
2. Clean under the nails with a nail pick being sure to rinse pick periodically.
3. Collect the scrub brush and squeeze to release scrub into the hand.
4. Use the nylon bristles to scrub the dorsal surface of all fingernails (including the thumbnail) using approx 20-30 strokes.
5. Point the fingers and thumb into the bristles and scrub approx 20-30 strokes to clean under the nails and fingertips.

From this point forward use only the sponge side of the brush

6. Divide the fingers into four planes and scrub each sequentially using 15 strokes per plane.
7. Scrub between the fingers using 15 strokes per plane.
8. Divide the hand into 4-6 planes and scrub sequentially using 15 strokes per plane.
9. Divide the forearm into proximal (towards the elbow) and distal (towards the hand). Scrub the distal half first and then proximal to just below the elbow.
10. Repeat for the other hand and arm.
11. Rinse off from fingers to elbows.
12. Apply more scrub from the dispenser and lather hands only. Rinse.

B. Gowning

1. Collect a paper hand towel and dry one hand gently. Enclose the other hand in the towel and grasp the wrist of the arm that is to be dried. Gently pull the

- towel down the forearm and discard. Repeat for the other arm.**
- 2. Grasp the gown firmly and gently lift it away from the table.**
 - 3. Hold the gown at the shoulders and allow it to gently unfold. Do not shake.**
 - 4. Guide each arm through the armholes and sleeves. Keep the hands within the cuffs of the gown.**
 - 5. Have an assistant pull the gown over the shoulders and tie the neck and sides. If a sterile-back gown is used, do not secure the outside ties until you have gloved.**

C. Closed Gloving

- 1. Have an assistant open the gloves onto a sterile drape.**
- 2. Working through the gown sleeves, remove each glove from the paper sheath and reposition them so that the fingers are pointing towards the operator and the thumbs are in the middle.**
- 3. Using the right hand, pick up the right glove cuff between the thumb and forefinger and lift from the table. Turn the hand supine (face up) so that the glove is resting on top with the fingers pointing towards the elbow.**
- 4. Grasp the edge of the cuff with the left hand and lift the cuff up and over the cuff of the gown and the enclosed right hand.**
- 5. Release the left hand and grasp the glove from the palm side and pull over the ball of the right hand.**
- 6. Grasp the glove and gown from the palm side and pull towards the elbow while pushing the right hand through the cuff and into the glove. Ensure that the cuff of the glove completely covers the elasticised cuff of the gown.**
- 7. Repeat for the left hand.**

D. Draping the patient

- 1. Have an assistant open the instrument pack**
- 2. Take the single field fenestrated drape and hold a corner in each hand.**
- 3. Allow the drape to drop and unfold. Do not fan and shake the drape.**
- 4. Fold a quarter of the drape and grasp the folded edge at the corners.**
- 5. Fold the drape around the hands to create a clean tight edge.**

6. Cover the animal such that the opening in the drape aligns with the surgical site.
7. Secure the drape.

RECOMMENDATIONS:

- The total scrub time by the surgeon should be no less than 5-7 min.
- Gowning should be performed from a surface separate to the surgical table.
- Draping must be performed by a gloved and gowned surgeon.
- Self-adhesive drapes are ideal for small animal surgery

***Recommended hard surface disinfectants:**

| AGENT | EXAMPLES * | COMMENTS |
|---------------------|---|---|
| Alcohols | 70% ethyl alcohol 85% isopropyl alcohol | Contact time required is 15 minutes. Contaminated surfaces take longer to disinfect. Remove gross contamination before using. Inexpensive. |
| F10 | benzalkonium chloride polyhexamethylene biguanide | Rapid kill times – less than 30 secs for gram positive bacteria, 60 secs for gram negative bacteria Non-corrosive, non-toxic, non-tainting, non-irritating, aldehyde-free Cost effective. |
| Vircon S | Potassium monopersulphate. alkyl benzene sulphonate | Corrosive as a powder Viricidal Aquatic application |
| Quaternary Ammonium | Roccal®, Quatricide® | Rapidly inactivated by organic matter. Compounds may support growth of gram negative bacteria. |
| Chlorine | Sodium hypochlorite (Clorox® 10% solution) Chlorine dioxide (Clidox®, Alcide®, MB-10®) | Corrosive. Presence of organic matter reduces activity. Chlorine dioxide must be fresh; kills vegetative organisms within 3 minutes of contact. |
| Glutaraldehydes | Glutaraldehydes (Cidex®, Cetylclide®, Cide Wipes®) | Rapidly disinfects surfaces. |
| Phenolics | Lysol®, TBQ® | Less affected by organic material than other disinfectants. |
| Chlorhexidine | Nolvasan®, Hibiclens® | Presence of blood does not interfere with activity. Rapidly bactericidal and persistent. Effective against many viruses. |

****Recommended skin disinfectants:**

| AGENT | EXAMPLES * | COMMENTS |
|---------------|--------------------------------------|---|
| Iodophors | Betadine®, Prepodyne®, Wescodyne® | Reduced activity in presence of organic matter. Wide range of microbicidal action. Works best in pH 6-7. |
| Chlorhexidine | Nolvasan®, Hibiclens® | Presence of blood does not interfere with activity. Rapidly bactericidal and persistent. Effective against many viruses. Excellent for use on skin. |

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REVISED:

REFERENCES

1. **Burgess D (2008) IV Year Surgical Procedures Manual, School of Veterinary Science, University of Queensland.**
2. **Slatter DH (2003:2v) Textbook of small animal surgery 3rd ed. Philadelphia, PA: Saunders.**