Chapter 14 - Lesson 4

Preparing Hands & Field of Operation

Introduction

Before performing any surgical procedure, it is necessary to properly prepare the surgeon’s hands and the surgical site on the patient. The surgical team should observe specific precautions and protocols to prevent infection and to permit normal healing of the animal.

During pre-operative preparation of the hands, remember that even the most effective method of disinfection will not make the hands sterile. Normal skin has a microbial population composed of both transient and resident organisms. Much of the transient microbes are removed by thorough cleansing with antiseptic soap and water. However, some transient and many resident microorganisms exist in crevices, superficial glands, and hair follicles in the skin where they are difficult to remove or inhibit. Therefore, if the operation is going to be aseptic, it is necessary to wear sterile surgical gloves.

The surgical scrub procedure recommended is designed to remove dirt, normal skin oil, and as many microorganisms as possible from the hands and arms of the surgeon and surgical assistant. Following the steps as outlined will minimize the possibility of contaminating the surgical site and operative wound with microorganisms from the hands and arms.

Preparation of the Hands

Before scrubbing, the surgeon should put on the surgical cap, mask, and shoe covers. Also, have the instrument pack, gloves, and other accessories open before scrubbing. To prepare the hands for surgery the surgeon should:

1. Keep finger nails trimmed short.
2. Place antiseptic soap in the palm of one hand and add enough water to make a lather. Wash to about three inches above the elbow.
3. Clean under the finger nails under the running water.

4. Remove a sterile brush from its package or dispenser. Apply antimicrobial soap to the other hand and brush to begin the scrub.
   a. Begin with the fingers. Scrub the nails and finger tips against the bristles of the brush.
   b. Scrub all parts of each finger.

5. Scrub all surfaces of the hand, finishing with the top side.

6. Repeat the procedure with the other hand.

7. Scrub the wrist and forearm on all sides, progressing toward the elbow. Do not return to scrub the hand or fingers after advancing to the forearm and elbow.

8. Rinse the hand and arm with running water. Keep the hand above the level of the elbow so that the water will run off the elbow, and the hand and fingers will not be re-contaminated.

9. Repeat steps 7 and 8 on the other wrist and forearm.

10. The total scrub time should take at least 6 minutes.

11. Dry hands with a sterile towel.

**Preparation of the Surgical Field**

To prepare an animal for a surgical procedure, the veterinary assistant should:

1. Using clean clippers, clip the operative area, taking care to avoid lacerating or burning the patient’s skin with the clipper blade. Clip against the grain of the hair.
2. Vacuum all hair clippings from the patient and the surrounding area.
3. Apply scrub solution to the clipped area.
4. Using sterile gauze sponges, gently scrub the center of the clipped area in a circular motion. Work from the center out toward the hairline and discard the sponge. Repeat the process allowing for 7 minutes of contact time between the scrub solution and the skin. Never go back over the same area with the same piece of gauze. Blot the prepped area with a sterile towel.
5. Apply a germicide solution (not soap) to the entire prepped area.

After thorough topical preparation of the surgical site, the most likely source of contamination for the surgical wound is the bacterial population residing in the glands and follicles of the patient’s skin.

**Reference**


**Questions**

1. Why must sterile surgical gloves be worn to perform aseptic surgery?
2. What purpose does the surgeon’s scrub serve?
3. Describe the actions that the surgeon and assistant must take before preparing their hands for surgery.
4. List the steps in preparing the surgeon/assistant’s hands for performing surgery.
5. Describe in detail the preparation of the surgical site.
6. What source of surgical wound contamination is untouched by thorough topical preparation?