

5. URINARY SURGERY

MICHAEL L. MASON  
LT. COL. M. C.

ROUTINE FOR KIDNEY OPERATIONS.

Instruments -

1. Retractors
  - a. Volkmann - 3 tined (2).
  - b. Ecartier - rib retractor (1)
  - c. Jackson (1).
2. Forceps
  - a. Artery
    1. Pean (24)
    2. Kocher - 8 inch (3)
    3. 8 inch plain (several)
    4. Guyon pedicle clamps (2)
    5. Ureter forceps - Muezzoe (1)
  - b. Tissue
    1. Short narrow rat tooth (2)
    2. Medium anatomical (without teeth) (2)
    3. Short broad rat tooth (1)
3. Scalpels (2)
4. Scissors
  1. Cooper dissecting (1)
  2. Catgut cutting - preferably a small one.
5. Needle holders (2)
6. Needles
  1. 1 - inch  $\frac{1}{2}$  curved non-cutting for ligature
  2. 3 - inch curved cutting for muscle closure.
  3. 3 - inch straight cutting for skin closure.
7. Miscellaneous
  1. Short dissector (1)
  2. Grooved director
8. Lap sponges  
8 by 20 inch. May use towels if no sponges are available.
9. Towel clips (8)
10. Suture material
  1. Ligatures - 00 or 000 catgut, 12 inches long.  
30 to 50 or more strands per operation.
  2. Ligature on a needle - 0 catgut, 15 inches long, on a 1 inch  $\frac{1}{2}$  curved non-cutting needle. 1-3 strands per operation.
  3. Pedicle ligature - #6 catgut, 18 inches long.  
1-2 strands per operations.

4. Muscle closure - #3 catgut, 20 inches long.  
About 10 strands per operation
5. Skin closure - Black silk, 12 inches long. About 20 strands per operation. May use clips if they are available.

### STAGES OF OPERATION

#### I. EXPOSURE

1. Skin incision - discard skin knife
2. Incision of subcutaneous ft.
3. Application of lap sponges - 2 with 8 towel clips if these are available. If not by suture with 00 catgut
4. Muscle incision

The above steps require 15-20 minutes and the following instruments:

- a. 2 scalpels
- b. 2 3-tined retractors
- c. 24 Pean artery forceps
- d. 30-50 strands of 00 or 000 catgut for ligature
- e. 1-3 ligatures of 0 catgut on a needle
- f. Scissors for cutting catgut

Immediately after the original skin incision has been made the nurse hands the second assistant the ~~XXXXXX~~ two 3-tined retractors. The first assistant clamps the bleeders. The surgeon ties them off.

#### II. OPERATION UPON THE KIDNEY

Requires instruments in the following order:

1. Ecartier rib retractor.
2. Broad Jackson retractor.
3. Two anatomical tissue forceps (without teeth)
4. Dissecting scissors.
5. Pedicle clamps.
6. Scalpel
7. Several Pean artery forceps.
8. 00 catgut - several strands.
9. 8-inch Kocher forceps (with teeth, to hold stump of pedicle), (3).
10. Pedicle catgut #6 - 1 -2 strands
11. Muesoe ureter forcep
12. #3 catgut - 1 strand, sponge, scalpel, phenol, alcohol for stump

#### III CLOSURE

Requires:

1. About 20 strands of #3 catgut - 20 inches long, on
2. Curved cutting 3 - inch needles
3. 2 needle holders
4. 20 Pean artery forceps
5. 2 3-tined retracto s.
6. Broad rat tooth tissue forceps

The muscular layer is closed with a single row of through and through interrupted sutures of #3 catgut. These are not tied until they have all been placed. The Pean artery forceps are handed to the first assistant who clamps the two ends of each suture together with a forcep. After all the sutures have been placed, the kidney rest is lowered and the sutures are tied,

starting at the back and working forward. After they have all been tied they are all cut at one time.

The subcutaneous fat is approximated with several sutures of 00 catgut.

The skin is closed with approximately 20 interrupted 12 inch silk sutures, using a straight cutting 3-inch needle. If clips are available, these may be used.

#### IV. DRAINS

These are inserted after stage II above, and just before the closure is started. They consist of the following:

1. 2 cigarette drains -  $\frac{1}{2}$  inch thickness and about 10 inches long - to the renal bed.
2. One  $\frac{1}{2}$  inch Penrose tube or  $\frac{1}{8}$  inch black rubber tubing - 10 inches long to the urethra stump.

These are sutured to the skin with 00 catgut on a  $1\frac{1}{2}$  inch curved cutting needle.

#### REMARKS

A great deal of time is taken up in kidney operations in clamping and tying off bleeders. If forceps are promptly passed and ligatures promptly given most time is saved.

Familiarize yourself with all of the various instruments, what they are used for, and at which stage of the operation they are employed. Know all of the steps of the operation in detail, and what instruments are to be used next. In this way you will be ready to hand the surgeon or the assistant the proper instrument even before he asks for it.

Arrange the instruments in groups for each stage of the operation and have the grouping planned so that you will not have to search frantically in a confused pile of disordered instruments when one is called for.

Know the instruments by name.

### ROUTINE FOR BLADDER OPERATIONS

#### Instruments

##### A. Catheter table

1. Urethral catheter plus catheter cork
2. Lubricating jelly (sterile)
3. 100-150 cc. syringe
4. 1000 cc. sterile water
5. Sterile basin for water.
6. Pus basin
7. Roll of 1-inch gauze bandage
8. Urethral sounds (Van Buren) -18, 20, 22, 24 French.

##### B. Operating table

###### 1. Retractors

- a. Volkmann 3-tined (2)
- b. Muscle retractors (2)
- c. Lateral bladder (Zuckerkindl) (2)
- d. Posterior bladder (Legueu) (1)

###### 2. Forceps

- a. ~~XXXXXXXX~~ 12 Pean artery forceps
- b. 2 bladder hook forceps
- c. 2 medium anatomical tissue forceps

- b. Fibers connecting peritoneum and prevesical areolar tissue are divided with scalpel - which is then returned to nurse.
- c. Anterior bladder wall is exposed with 2 medium anatomical tissue forceps which are then returned to nurse.
- d. Bladder wall is grasped with 2 bladder hook forceps
- e. Bladder is emptied by enlisted man under direction of the surgeon.
- f. Bladder wall is incised with scalpel and opening is enlarged with scissors (straight). Suction tube is inserted into bladder.

5. Exposure of bladder lumen-

Retractors are given to the surgeon in the following order  
(this sequence is very important!)

- a. Posterior bladder retractors (Legueu) - is inserted and a sponge is placed under it.
- b. Lateral bladder retractors - (Zuckerkindl)(2) - These are given to the surgeon one at a time, the second only after the first has been placed, as these are placed the corresponding bladder hook forceps are removed and given back to the nurse. As each lateral retractor is inserted the corresponding muscle retractor is also removed and given back to the nurse.

6. Operation upon bladder

7. Closure

- a. Hand the surgeon one bladder hook forceps. As he removed right lateral bladder retractor (Zuckerkindl), he picks up the edge of the right lateral bladder wall with the bladder hook forceps and hands the retractor back to you. Immediately after you hand him the bladder hook forceps, be ready to hand him the muscle retractor, so that he may insert it immediately after removing the lateral bladder retractor, which he returns to you.

This maneuver is then repeated on the left side. The posterior retractor (Legueu) is then removed and returned to you.

B. Suture of bladder wall

- 2 needle holders, narrow, rat-tooth tissue forceps
- $1\frac{1}{2}$  inch half curved cutting needles
- 12-20 interrupted sutures of 00 catgut, each 12 inches long.

After the first 3 sutures are placed the bladder hook forceps are removed and returned to you. The drain ~~XXXXXXXXXXXXXXXXXXXXXXXXXXXX~~ (Freyer or Pezzer) is then inserted into the bladder and closure of the latter is completed. The ends are all left long to be held by the first ~~XXXXXXXX~~ assistant.

The sutures are then all cut with the scissors

- c. Drain is placed in prevesical space using
  - 12 inch length of 1 inch packing or
  - 6 inch length of  $\frac{1}{2}$  inch Penrose tubing

The muscle retractors are then removed and returned to the nurse who hands the second assistant 2 3-tined retractors.

- d. Muscle closure with ~~XXXX~~ 3-4 00 catgut sutures. Sutures are then all cut with scissors.

- d. 2 narrow rat-tooth tissue forceps.
3. Scalpels (2)
4. Needle holders (2)
5. Dissector 1 small
6. Needles -  $1\frac{1}{2}$  inch half curved, moderately thin, cutting.
7. Scissors
  - a. Cooper dissecting (1)
  - b. Catgut cutting - small (1)
8. Lap sponges - 2 ordinary
9. Suture material
  - a. Ligatures 00 or 000 catgut, 12 inches long, about 12 strands per operation.
  - b. Bladder closure 00 catgut, 12 inches long on the above needles. 12-20 strands per operation.
  - c. Muscle closure 3-4 strands of the above
  - d. Closure of fascia (rectus sheath) #1 catgut, 12 strands 12 inches long on the above needle.
  - e. Subcutaneous fat 3-4 as b. above.
  - f. Skin closure - About 12 interrupted, 12 inch silk sutures on a 3 inch straight cutting needle.
10. Drains
  - a. Prevesical - either 1-inch gauze packing 12 inches long or a 6-inch length of  $\frac{1}{2}$  inch Penrose tubing.
  - b. Bladder - Pezzer catheter or Freyer tube.

#### STAGES OF OPERATION

1. Skin incision - 2 scalpels  
12 Pean artery forceps  
2 3-tined retractors  
2 lap sponges  
After skin incision discard the skin knife and hand the two 3-tined retractors to the second assistant.
2. Subcutaneous fat is divided down to the rectus sheath. Bleeders are clamped and tied with 00 catgut. Lap sponges are applied.
3. Fascia (rectus sheath) and muscle - The fascia is knicked in the midline with the scalpel until the muscle appears underneath. The fascia is then divided along the entire length of the incision with a straight scissors. Muscle fibers are then separated near the midline with the short dissector and spread with both index fingers.  
The 3-tined retractors are returned to the nurse and the muscle retractors are inserted.
4. Opening of bladder
  - a. Bladder is filled through urethral catheter with sterile water and 100 cc. syringe (by enlisted man) under direction of the surgeon. Cork is put in catheter.

- e. Closure of fascia with about 12 interrupted #1 catgut sutures.  
Sutures are then all cut with scissors.

The retractors are then returned to the nurse.

- f. Approximation of the subcutaneous fat with 3-4 00 catgut ~~XXXXXX~~ sutures.

The sutures are then all cut with scissors

All steps from b. to f. above are carried out with a 1½ inch half-curved cutting needle.

- g. Closure of the skin with about 12 interrupted silk sutures, 12 inches long on a 3 inch straight cutting needle. The ends are all left long until the whole row of sutures has been placed.

The ends are then all cut with the scissors.

In the interrupted suture technique employed in all operations on the urinary tract the ends will be left long to be held by the first assistant until the whole row of sutures is completed. Then the long ends are all cut at the same time with a scissors. Only ligatures are cut immediately after tying.

#### REMARKS:

Good exposure is the most important factor in rapid and delicate operating on the bladder. The retractors if carelessly handled by the surgeon and his assistants will cause dangerous injury to the bladder and peritoneal cavity. Hence the surgeon and assistants must constantly keep their eye on the operative field, especially while inserting and removing retractors. If dangerous hemorrhage is starting or in progress, speed and deftness in this period are most important.

Hence the scrub nurse must be on her toes and ready to hand the proper retractors on call or even before she is asked.

It is most important to familiarize yourself with the various retractors, their names, their use, and when they are to be inserted or removed.

A careless and inexperienced nurse at such crucial periods can completely ruin the successful handling of a very critical situation.

## IMMEDIATE POST-OPERATIVE DRESSING OF THE UROLOGIC CASE

### BLADDER

Enough 4 by 8 inch gauze dressings laid one upon the other to form a pad  $\frac{1}{2}$ - $\frac{3}{4}$  inch thick. This is folded lengthwise down the middle to form a thick 2 by 8 inch pad. One such pad is placed on either side of the wound and strapped on with adhesive. Four strips of adhesive  $1\frac{1}{2}$  inches wide and 18 inches long are used. Three strips are applied crosswise to hold on the gauze and one is applied obliquely over the glass L tube of the Freyer drain to hold the latter in place. A muslin binder is then applied.

### KIDNEY

4 by 8 inch dressings are so applied to the wound as to form a pad 4 inches wide, approximately 8 inches long and about 1 inch thick. This is firmly strapped down with one long strap of adhesive tape approximately 4 inches wide and about 28 inches long which is applied lengthwise over the dressing. Several narrower strips of adhesive may be substituted if the wider variety is not available.

Before the above dressing is applied it is wise to take a thin pad of 4 by 4 inch dressing, cut it almost all the way through the middle and slip it around the drains emerging from the posterior margin of the wound. This protects the drains and the surrounding skin from undue pressure.

IF COMBINATION DRESSINGS ARE AVAILABLE THESE MAY BE PLACED OVER THE ABOVE DESCRIBED DRESSING FOR PROTECTION AND SUPPORT.

A wide muslin binder is used to cover the whole dressing. It is fastened with safety pins.

**NOTE:** A VERY CONVENIENT FORM OF GAUZE INSTEAD OF THE 4 BY 8 INCH PADS IS THE FREQUENTLY SUPPLIED 5 YARD FOLDED GAUZE WHICH COMES IN A 4 INCH WIDTH IN EITHER A SMALLER OR A LARGER ROLL. PIECES OF PROPER SIZE FOR BLADDER CASES MAY THEN BE CUT FROM THE STERILE ROLL RIGHT AT THE OPERATING TABLE. IN THE CASE OF KIDNEY DRESSINGS A MORE STABLE ONE-PIECE DRESSING PAD MAY BE APPLIED OVER THE WOUND MERELY BY ROLLING THE ROLL BACK AND FORTH OVER THE WOUND UNTIL A PAD OF PROPER THICKNESS HAS BEEN PRODUCED.