REPAIR OF FEMORAL HERNIA (ADULT)

GRADE 3 (VERY DIFFICULT)

THESE STEPS COVER:

PATIENT 12 YEARS PLUS
For a child of 12 years or less, see Repair of Femoral Hernia (Child) File name FEMHERCH.

MALE PATIENT

FEMALE PATIENT

LOCAL / GENERAL / EPIDURAL / SPINAL ANAESTHESIA

ELECTIVE REPAIR
For emergency operation, see Emergency Stepwise.

SLIDING HERNIA

EXPLORATION FOR SUSPECTED HERNIA

RECURRENT HERNIAS, GRADE 4 (SEVERE)
Be prepared for difficult dissection in scar tissue, extraordinary anatomy, twice the normal operating time, and twice the complication rate. Go extra slowly and carefully. Remove all infected foreign material.

BILATERAL HERNIAS
Described here, but do NOT use local anaesthesia, because you will greatly exceed the toxic dose of the Lignocaine.
1  PRELIMINARIES
8  ANAESTHESIA
9  POSITION
10  STANCE
11  PREPARE THE SKIN
15  INFILTRATE LOCAL ANAESTHESIA
17  INCISE THE SKIN
19  DISSECTION
23  FINDING THE SAC
29  TREATING THE SAC
42  REPAIR
49  CLOSURE
59  FINAL TOUCHES

64  EQUIPMENT LIST
65  MATERIALS LIST
1 QUICK STEPS

1 PRELIMINARIES
2 CHECK YOU HAVE THE CORRECT PATIENT.
3 CHECK THE SIDE OF THE HERNIA.
4 CHECK THERE IS NO OTHER PROCEDURE TO DO.
5 CHECK THERE IS A DIATHERMY PAD.
6 CHECK THERE IS AN ECG MONITOR.
7 CHECK THE PATIENT IS SHAVED FROM UMBILICUS TO MID THIGH.

8 ANAESTHESIA
LOCAL anaesthesia technique is described in this account.

NB You MUST have facilities and staff to correct any complications of local anaesthesia eg Hypotension, cardiac arrhythmias, respiratory arrest, coma, convulsions, and anaphylactic reactions.

For GENERAL, SPINAL and EPIDURAL anaesthesia just ignore the asterisked steps.

9 POSITION
Supine with bare skin from costal margin to knees, free from all tubing, wires, electrodes, etc.

10 STANCE
Stand on the side of the hernia with one assistant on the opposite side.

For a double hernia, start on the less severe side.
STEP NUMBER

This will get your eye in for the more difficult side, and reduce the chance of an infection.

11 PREPARE THE SKIN
from the umbilicus to the mid-thigh, and from the iliac crest to 5cm beyond the mid-line.

For a double Hernia, prepare the skin to the opposite iliac crest.

Use two swabs on sticks with 0.5% chlorhexidene in 70% propanol, followed by one to dry off.

12 TOWEL UP
from the iliac crest to the midline, and from the anterior superior iliac spine to 5 cm below the symphysis pubis.

For a double hernia, towel up to the opposite anterior superior iliac spine.

13 APPLY TOWEL CLIPS
to hold the towels in place.

14 CHECK DIATHERMY is working.

*15 INFILTRATE LOCAL ANAESTHESIA
using 5mg/ml (0.5%) plain Lignocaine.

Raise a 2 ml skin bleb of Lignocaine at the anterior superior iliac spine.

Use an orange 25 SWG needle on a 20 ml syringe.

Make sure all needles are pushed firmly onto the syringes until they creak.

Next, with a green 21 SWG needle, raise a ridge of skin using 15 ml of Lignocaine from the anterior iliac spine to the symphysis pubis and onto the upper thigh for 5 cm

Then infiltrate the fat, abdominal wall, and the upper medial thigh in the same line with another 15 ml

Block the ilio-inguinal and ilio-hypogastric nerves with 10 ml anaesthetic just medial to the anterior superior iliac spine, 2 cm deep to the skin.

Test the skin for anaesthesia with the scalpel point.

If the patient still feels pain, wait 3 minutes.
If there is still pain after this, inject another 5 ml of Lignocaine into the most superficial layer of the skin.

You must have complete anaesthesia before you can continue.

If the patient is still feeling discomfort, consider a giving Diazepam or Pethidine with the supervision of the anaesthetist.

Rarely a general anaesthetic is needed.

16 STEADY THE SKIN
by pressing on it with one swab held by your assistant and another held in your left hand.

17 INCISE THE SKIN
2 cm above the inguinal ligament, from middle of the inguinal ligament to the pubic tubercle.

*Tissue that is "oedematous" with Lignocaine will be anaesthetic.

*Inject more Lignocaine as required to keep absolute control of pain.

But remember you may well be exceeding the recommended maximum dose of 3mg/Kg (40ml 0.5% Lignocaine for a 70Kg patient.)

18 COAGULATE VESSELS.
These will be the superficial epigastric artery and vein laterally, plus some irritating veins in the medial part of the wound.

Ligate any vessels which continue to bleed with 2.0 catgut (Ethicon 113).

19 DISSECTION

20 EXPOSE THE LOWER EXTERNAL OBLIQUE APONEUROSIS by firmly sweeping away the fat flaps using a swab in each hand.

The stripes of the aponeurosis should be cleanly exposed before you continue.

You will see the lower margin - the inguinal ligament.

21 ATTACH SKIN EDGE TOWELS using 2 Tetra clips to each skin flap and towel clips to the wound ends.
STEP NUMBER

22 RETRACT THE SKIN AND FAT with a Traver's self retaining retractor.
Place its handle medially to avoid obstructing your access.

23 FINDING THE SAC - READ ON

24 DISSECT THE FEMORAL TRIANGLE below the inguinal ligament and below the pubic tubercle.
Use a gauze swab.
Ligate and divide veins running into the sapheno-femoral junction.

25 IF THERE IS A SWELLING, dissect its deep attachments.
A FEMORAL HERNIA will be protruding from the femoral canal just lateral to the pubic tubercle, below the inguinal ligament. GO TO STEP 29 (TREAT THE HERNIA)
AN ENLARGED FEMORAL LYMPH NODE will dissect out completely.
Send the node for histological and bacteriological examination. GO TO STEP 48 (CLOSURE).
AN INGUINAL HERNIA will protrude from the external ring. SEE STEPWISE REPAIR OF INGUINAL HERNIA (ADULT) (FILENAME INGHERAD)
Treat other swellings on their own merits.

26 IF THERE IS NO SWELLING, look for a sac.
You need to dissect in the subcutaneous and extraperitoneal fat to do this.
A sac will have a bluish rounded margin protruding from the femoral canal, lateral to the pubic tubercle and just below the inguinal ligament. GO TO STEP 29 (TREAT THE HERNIA)

27 IF THERE IS NO SAC, make sure there is no INGUINAL HERNIA.

28 IF THERE IS NO INGUINAL HERNIA, then there is probably only some extra peritoneal fat causing the clinical problem. GO TO STEP 42 ( )

29 TREATING THE SAC - READ ON
STEP NUMBER

30 REDUCE ANY CONTENTS OF THE SAC back into the abdomen by pressing on the sac with your fingers.

If the contents will not reduce, the neck of the sac may be too narrow.

Stretch up the angle between the inguinal ligament and the pubic ramus, medial to the sac.

Use your index fingers.

End up with a 2 cm widening.

31 DISSECT OUT THE SAC carefully with gauze dissection.

* You may need to inject more anaesthetic into the neck of the sac.

Avoid the femoral vein laterally.

If the sac tears, clip the edge of the tear to prevent the tear extending up into the peritoneal cavity.

32 OPEN THE SAC at its apex between three artery forceps. 33 IF YOU FIND A SLIDING HERNIA ie large bowel forming the inside wall of the sac, repair the opening in the sac with 2/0 catgut (EthiconW441).

Reduce the hernia.

GO TO STEP 42 (REPAIR).

34 IF YOU FIND ADHESIONS BETWEEN THE SAC AND OMENTUM OR SMALL BOWEL, make quite sure that it is not really a sliding hernia.(If it is, reduce the hernia and GO TO STEP 42 (REPAIR))

Divide genuine adhesions so that the contents can be reduced back into the abdominal cavity.

35 CHECK THERE IS NO INTERSTITIAL HERNIA running between the layers of the abdominal muscles.

If there is, reduce it.

36 TWIST THE SAC by rotating the three artery forceps on its apex to push back any contents entering from the peritoneal cavity.
STEP NUMBER

37 TRANSFIX THE SAC at its junction with the peritoneal cavity with a No1 catgut stitch (Ethicon W 762).

38 CUT THE SAC 1 cm from the stitch.

39 RELAX YOUR HOLD on the stitch to check that there is no bleeding from the cut surface of the sac.

40 CUT THE STITCH 1 cm from the knot.

41 PUSH THE STUMP OF THE SAC inside the internal ring.

42 REPAIR - READ ON

41 INSERT THE FIRST REPAIR STITCH into the medial end of the inguinal ligament and into the periostium of the pubic ramus 5mm. from the pubic tubercle using 1/0 nylon Ethicon (749).

Clip this stitch and cut the ends 8 cm long without tying it.

Guard the femoral vein with a finger.

If the tissues are very deep, reduce the effective size of the needle by holding it nearer its point with the needle holder. hold the needle closer to its point with the needle holder.

42 INSERT A SECOND REPAIR STITCH 5mm. lateral to the first.

Clip and cut it without tying it.

43 INSERT A THIRD REPAIR STITCH 5 MM. lateral to the second.

Clip and cut it without tying it.

44 TIE THE FIRST STITCH with 5 half-hitches.

Cut the ends 10mm. long.

45 TIE THE SECOND STITCH with 5 half hitches, if there is more than a 10mm. gap medial to the femoral vein.

Cut the ends 10mm. long.

If the gap is 10mm. or less. remove the second and third stitches. GO TO STEP 00
46 **TIE THE THIRD STITCH** with 5 half hitches, if there is more than a 10mm. gap medial to the femoral vein.

Cut the ends 10mm. long.

If the gap is 10mm. or less, remove the stitch.

If the gap is more than 10mm. continue with more stitches as above until it reduces to less than 10mm.

47 **CHECK THE GAP** Remove stitches as needed to prevent venous compression.

48 **CHECK THE SWAB, NEEDLE, AND INSTRUMENT COUNTS**

49 **CLOSURE - READ ON**

50 **REMOVE THE SKIN EDGE TOWELS.**

51 **CHECK HAEMOSTASIS**

52 **RECHECK THE SWAB, NEEDLE, AND INSTRUMENT COUNTS**

53 **CLOSE THE FAT** with continuous No1 catgut (Ethicon W762).

54 **CLOSE THE SKIN** with continuous subcuticular 3/0 Vicryl (Ethicon W9890).

55 **FOR PATIENTS WHO HAVE NOT HAD LOCAL ANAESTHESIA** inject 20 ml 0.5% Bupivacaine into the ilio-inguinal and ilio-hypogastric nerves at the anterior superior iliac spine.

56 **SPRAY THE WOUND** with a cellulose spray (Nobecutaine).

57 **APPLY A SKIN DRESSING** (Mepore).

58 **TO REPAIR THE SECOND SIDE OF A DOUBLE HERNIA**

Change gloves

Clean the skin of the second side again with Chlorhexidine in Propanol.

GO BACK TO STEP 16
58 CHECK THERE IS NO OTHER PROCEDURE TO DO

59 FINAL TOUCHES - READ ON

60 WRITE LEGIBLE OPERATION DETAILS.

61 FILL IN THE SURGICAL AUDIT FORM.

62 PRESCRIBE HEPARIN 5000 UNITS SUBCUTANEOUSLY BD until the patient leaves hospital if he/she is over 40 years.

63 DICTATE AN OPERATION LETTER TO THE GENERAL PRACTITIONER.

64 EQUIPMENT LIST

65 MATERIALS LIST