



Open Amid-Lichtenstein Repair

Indication for Operation:

Patient presents with an inguinal hernia causing (minimal/ moderate/ significant) discomfort (with/without) obstructive symptoms. The benefits, risks, and alternatives of operative correction were discussed in detail including the option of watchful waiting, tissue and mesh-based repairs, and open versus minimally invasive options. Given their (desire to avoid general anesthesia/ desire avoid preperitoneal dissection/ cardiac comorbidities/ pulmonary comorbidities/ prior prostatectomy or lower abdominal surgery/ preference) we agreed to proceed with an open repair with mesh. We discussed the inherent risks of recurrence and chronic pain. We discussed the low risk of bleeding, infection, visceral injury, testicular pain/atrophy/compromise, and mesh related issues. The patient understood these considerations and consented for this operation.

Description of the operation:

The patient is placed supine on the OR table. After monitored anesthesia care is initiated with mild sedation, 10 cc of a 50:50 mixture of Lidocaine and Marcaine is injected under a 6 cm incision positioned 1 to 2 cm above the pubic symphysis and centered over the inguinal canal. Another 10 cc of local anesthetic may be injected into the underlying subcutaneous fat.

The skin is incised and the dissection is carried down through the subcutaneous tissue opening Scarpa's fascia. The superficial epigastric vessels are identified, ligated proximally and distally with 3-0 Vicryl suture, and divided. *Failure to properly control these vessels so may lead to postoperative bleeding complications.*

The external oblique aponeurosis is then exposed. A small window is made to expose the canal. 10 cc of local anesthetic are injected under the EO aponeurosis hydrodissecting the canal and anesthetizing the inguinal nerves coursing within the inguinal canal. *It is essential to AVOID injecting too deep to prevent infiltration into the cord, vessels, or femoral nerve territory.*

The external oblique is then cleared to the inguinal ligament laterally and to the external ring medially to define the center of the canal. The fibers of the EO are then incised at the midpoint carrying this to the external ring distally and towards the ASIS proximally.

A 7.5-inch Weitlander retractor is utilized to expose the field. Two small clamps are placed on each leaflet of the EO aponeurosis.

The medial leaflet is dissected with a fine Kittner dissector along the EOA to expose the Conjoint tendon medially. The lateral leaflet is dissected with a fine Kittner dissector along the EOA to expose the inguinal ligament laterally.



NERVE MANAGEMENT

The ilioinguinal nerve is identified running along the top of the cord structures and should be protected throughout its course. *At times, it can be divided pragmatically to prevent injury or chronic pain.* If the nerve is divided, the proximal and distal ends are ligated with 3-0 Vicryl suture. The specimen is resected and sent to pathology. The proximal end is buried into the belly of the internal oblique muscle to prevent perineural scarring.

The iliohypogastric nerve is identified running medial to its exit at the Conjoint tendon and is protected throughout its course. It may have an aberrant course as well. The IHN may also be divided pragmatically, if needed. The genital nerve may be identified running within the cremasteric bundle adjacent to the external spermatic vein and is preserved.

The cord structures are separated from the floor of the inguinal canal bluntly dissecting with a Kittner directly over the symphysis pubis and tubercle in the avascular plane. This is then elevated with a ½ inch Penrose drain. *Avoidance of blunt finger dissection will prevent injury to the cremasteric bundle and genital nerve. In females, the round ligament could be safely divided.*

DIRECT HERNIA

A direct hernia may be identified and separated from the cord structures. The transversalis fascia is then opened at the midpoint of the canal. The presence of a femoral hernia should be excluded, especially in females. The transversalis fascia is then imbricated without tension to close the floor of the canal creating a landing zone for the mesh. *Care should be taken to prevent injury to the iliohypogastric nerve and avoid fixation to the inguinal ligament which generates tension. It may be helpful to clearly delineate the transversus arch superiorly to minimize risks of IHN entrapment.*

INDIRECT HERNIA

The cord structures are then opened longitudinally in the direction of the cremasteric fibers to preserve the cord structures and ilioinguinal and genital nerves.

A hernia sac is identified running on the anteromedial aspect of the vas deferens and is separated from the cord structures. This is injected with another 2 cc of local anesthesia at its base. This sac is opened, and the femoral canal may be interrogated through the opening. The sac is then ligated with 2-0 Vicryl suture and divided.

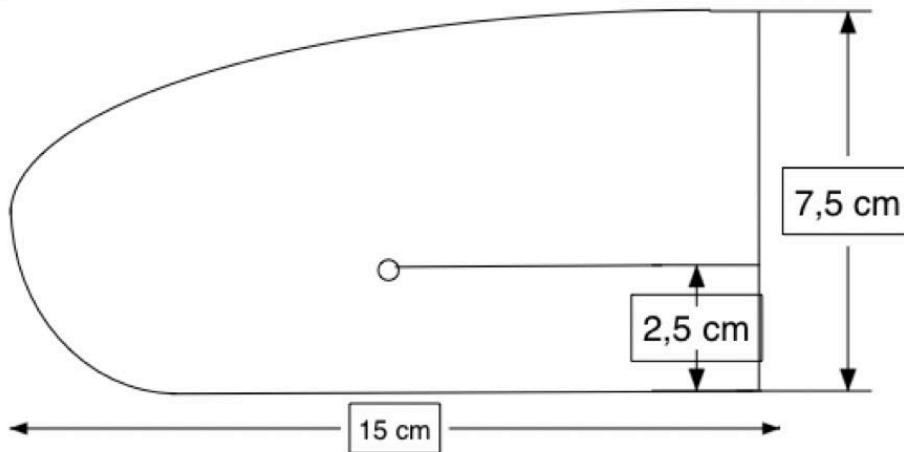
CORD LIPOMA

If a cord lipoma is identified, it is separated from the cord structures. It is then injected with 2 cc of local anesthesia at its base, ligated with 2-0 Vicryl suture and divided.

MESH PLACEMENT

The floor of the canal is prepared for mesh placement with closure of the internal ring with a Marcy suture (2-0 Vicryl closing the crus of the internal ring), imbrication of the floor, and medial exposure of 1.5 to 2 cm of pubis.

Repair is then performed using a 7.5 x 15 cm piece of mesh shaped to the curvature of the inguinal canal.



A 2-0 Prolene suture is used to fixate the lateral aspect of the mesh to the inguinal ligament. The suture is placed 1 cm distal to the pubic tubercle without capturing the periosteum. The stitch is then parachuted 1 cm away from the edge of the mesh to obtain 1.5-2 cm of medial overlap. The suture is then run along the inguinal ligament fixating the inferiorlateral aspect of the mesh to the shelving edge; from the pubic tubercle to the level of the internal ring.

The mesh is then split into superomedial (2/3 of the width) and inferolateral (1/3 of the width) tails. The upper tail is passed under the cord structures. The superiomedial aspect of the mesh is fixated to the aponeurotic portion of the Conjoint tendon with loose, absorbable 2-0 Vicryl, interrupted sutures carefully protecting the iliohypogastric nerve throughout its course. The upper tail is then crossed over the lower tail and the lateral mesh edges are fixated to the inguinal ligament with 2-0 Prolene suture to create the mesh internal ring.

4 cm of cephalad extension of the mesh is preserved and cut to the shape of the canal. This is then tucked under the EO aponeurosis to cover an interstitial or low-lying Spigelian hernia. A 2-0 Vicryl suture is used to close the EOA recreating the external ring. The ilioinguinal nerve is protected during this closure. Scarpa's fascia is closed with 3-0 Vicryl suture in running fashion. The skin is closed with 4-0 Monocryl in running subcuticular fashion.