

# BARD® KUGEL® HERNIA PATCH



Self-Expanding Mesh Patch for  
Preperitoneal Hernia Repair

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## **TECHNIQUE GUIDE**

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Open Inguinal Hernia Repair

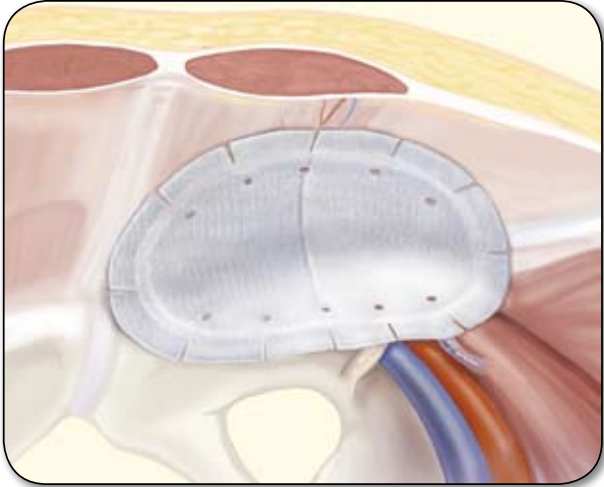
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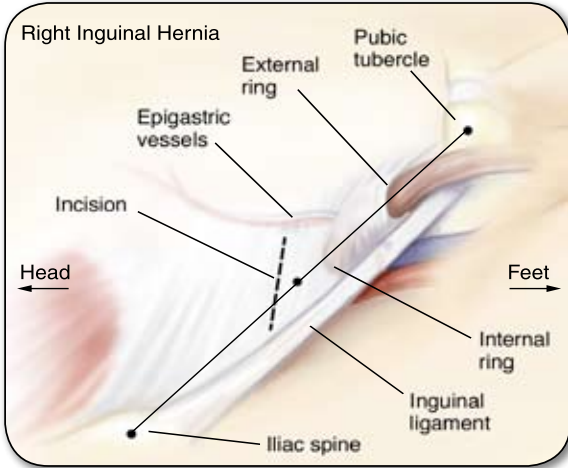
## **Benefits of the Bard® Kugel® Hernia Patch Technique**

- Can be performed through one small 3-4 cm incision
- Covers the direct, indirect and femoral space, reducing risk of recurrent or missed hernias<sup>2</sup>
- Same mesh placement as in laparoscopic repair without the potential costs and complications<sup>1</sup>
- “Near sutureless” repair reduces time-consuming suturing<sup>1</sup>
- Can be performed using local or regional anesthesia
- Low recurrence rate<sup>3</sup>
- Results in minimal post-op pain<sup>1, 2</sup>



The Bard\* Kugel\* Patch repair is very similar to a laparoscopic repair in that the entire groin region is protected against further herniation. As in a laparoscopic TEP repair, the preperitoneal space is cleared using digital dissection instead of a balloon. The entire procedure is performed through a small 3-4 cm incision made directly above the spermatic cord in the preperitoneal plane. Clear visualization of the operative site is maintained throughout the procedure with proper dissection, retraction and the use of a headlamp.

## OPERATIVE TECHNIQUE



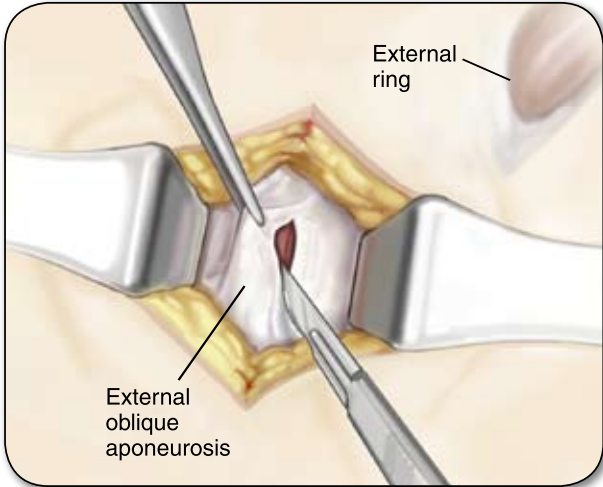
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### Identify Key Landmarks

The following process for locating the proper incision site is recommended for all repairs. The objective is to enter the preperitoneal space approximately 2-3 cm superior to the internal ring.

- With a marking pen, make a dot at the pubic tubercle, the anterior superior iliac spine, and the midpoint.
- Draw a line connecting these three points.
- Approximately 1 cm above the midpoint, draw a 3-4 cm transverse line that is 1/3 lateral and 2/3 medial. This is the incision site.

**NOTE:** *It may be necessary to make a larger incision on obese patients, or while learning the Bard\* Kugel\* Patch technique.*



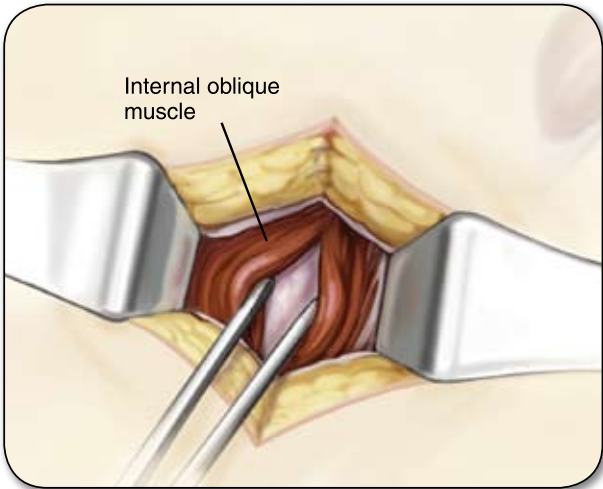
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## **Entry into the preperitoneal space**

Success with the Bard\* Kugel\* Patch repair is dependent on entering the correct anatomical plane.

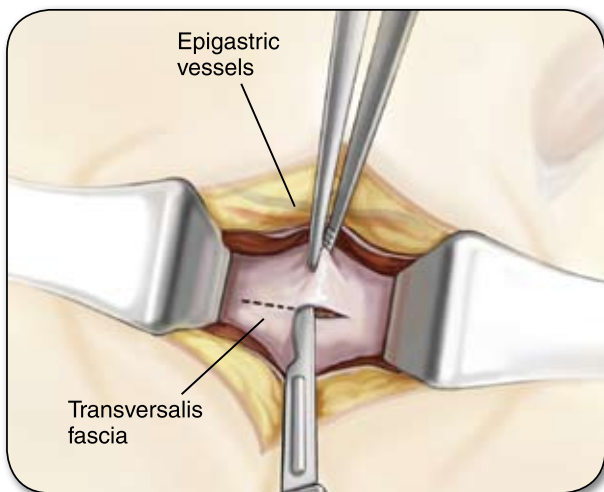
- Incise Scarpa's fascia and the subcutaneous fat down to the level of the external oblique.
- Incise the external oblique parallel with its fibers, but not through the external ring.

## Measuring the Defect Internally



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Use a muscle-splitting incision, similar to that used for appendectomies, to dissect through the internal oblique muscle, exposing the transversalis fascia.

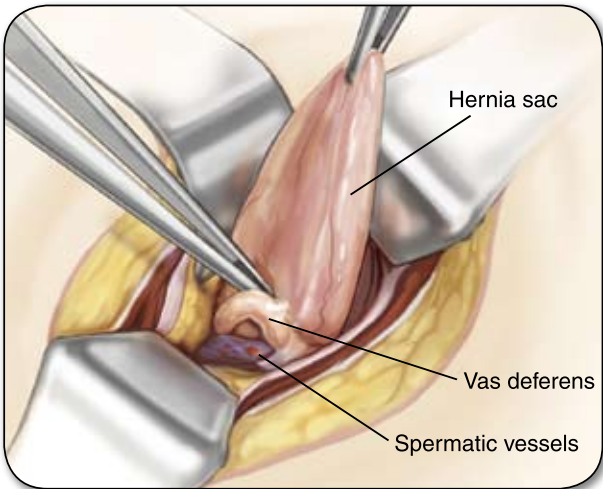


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Open the transversalis fascia vertically and parallel with the inferior epigastric vessels, but not through the internal ring. The vertical incision reduces the risk of damage to the epigastric vessels.

**NOTE:** *Entry into the proper plane can be confirmed by feeling the pulsation of the iliac vessels and/or the banding of the epigastric vessels. Throughout the procedure, the epigastric vessels should be elevated to assist with visualization and to avoid slipping into the wrong space.*

## The Proper Dissection



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### **Identify and reduce the hernia(s).**

Placing the patient in a Trendelenberg position and rotating the patient slightly away from the hernia can help with the dissection, particularly in obese patients.

**Indirect hernia:**

- Reduce the hernia sac.
- Keep traction on the peritoneum and separate the cord structures from the hernia sac as it is pulled out of the inguinal canal.
- Complete the dissection below the point where the vas deferens and testicular vessels diverge to reduce the risk of the sac slipping under the mesh, creating a potential recurrence.
- To test the dissection, tug on the testicle. If peritoneum advances, further dissection is required.

**NOTE:** *For very large or scrotal hernias, the hernia sac can be divided at the level of the internal ring and the redundant sac can be left in the inguinal canal if it does not pull through the internal ring easily.*

**Direct hernia:**

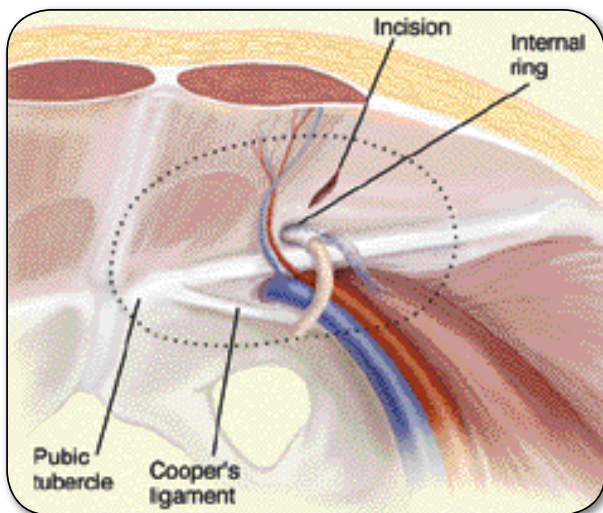
A direct defect is medial to the epigastric vessels. Frequently a “pseudo-sac” is formed from the attenuated transversalis fascia.

- Using blunt dissection, separate all preperitoneal fat and peritoneum from this pseudo-sac.
- Cooper’s ligament must be visible to ensure dissection is complete.

**Femoral hernia:**

The patch will not lie flat unless the femoral space is cleared of any herniated material.

- Reduce the hernia sac using careful finger dissection.



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## Dissection of the preperitoneal space

Dissect a preperitoneal pocket just large enough to accommodate the Bard\* Kugel\* patch.

### Key landmarks are:

- Medial to the pubic symphysis
- 3 cm below Cooper's ligament
- 2-3 cm lateral to the internal ring
- 2-3 cm beyond the transversalis incision

**NOTE:** *Loose connective tissue attached to the posterior edge of Cooper's ligament may require sharp dissection, avoiding damage to aberrant obturator vessels.*

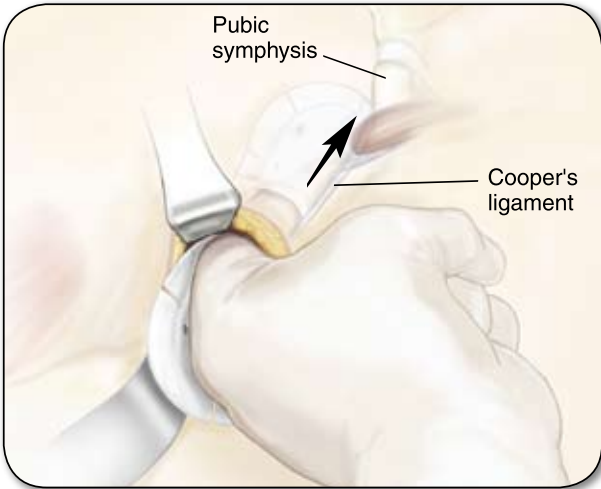


7A

### **Inserting the Bard\* Kugel\* Patch**

Small (8 x 12 cm) and Medium (11 x 14 cm) Oval **Bard Kugel** Patches are designed to accommodate the groin region. Size selection is typically based on the level of dissection performed, the size of the patient, or the size of the defect, while some surgeons believe broader coverage reduces the risk of recurrence.

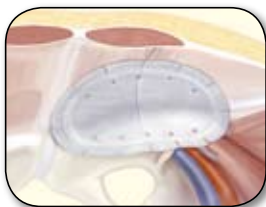
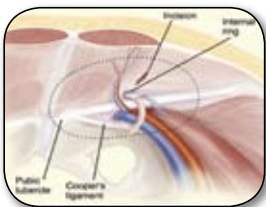
- Place a gauze sponge over the peritoneum and hold back the gauze and preperitoneal contents using a malleable retractor.
- Place index finger of contralateral hand into the anterior pocket of the patch & roll the patch up in a "taco-like" fashion.



### 7B

- Insert the patch into the preperitoneal pocket, over a malleable retractor used like a “shoe horn.”
- Slide the patch along Cooper’s ligament medially to the pubic symphysis.
- If necessary, remove finger and insert the malleable retractor into the patch pocket to finish inserting the patch.

The Bard\* Kugel\* Patch lies parallel with the inguinal ligament and is placed between the cord structures and the peritoneum. Controlled dissection, intra-abdominal pressure and hydrostatic tissue forces help secure the patch in position.



7C

### Patch Placement

- Sweep the upper edge of the patch under the transversalis fascia so the “memory ring” is approximately 2-3cm superior and lateral to the incision.
- Place the inferior edge of the patch over the iliac vessels so it extends below Cooper’s ligament.
- The medial edge of the patch lies under the pubic bone, up against Cooper’s ligament.
- The slit in the patch should lie parallel with the epigastric vessels.
- The “memory ring” should not be visible.

**NOTE:** *If the patch does not open completely, the dissection is probably incomplete. Running a finger along the periphery of the patch to perform additional dissection will typically correct this situation, otherwise, remove the patch and extend the dissection.*

## Closure

- Close the transversalis fascia with a single interrupted stitch using an absorbable suture, catching the anterior layer of patch to help further secure the patch in place.
- Spray a long-acting local anesthetic into the preperitoneal space.
- Close the external oblique with a simple running stitch, and re-approximate Scarpa's fascia and the skin layers in the usual fashion.

### **Special thanks to:**

*Robert D. Kugel, MD FACS  
Hernia Treatment Center, Olympia, WA,  
for his contribution to the advancement of hernia repair.*

*The technique presented herein is for informational purposes only. The decision of which technique to use in a surgical application lies with the surgeon based on patient profile and previous surgical experience. Please consult product labels and inserts for any indications, contraindications, hazards, warnings, cautions and instructions for use.*


Catalog Number.	Size	Quantity	Description
0010101	Small Oval	2/cs.	3" x 4.6" (8cm x 11.76cm)
0010105	Medium Oval	2/cs.	4.34" x 5.5" (11cm x 14cm)
<b>Also available in sizes designed for ventral and umbilical hernia repair.</b>			
0010102	Large Oval	2/cs.	5.5" x 7" (14cm x 17.78cm)
0010103	Small Circle	2/cs.	3" (7.62cm) diameter
0010104	Large Circle	2/cs.	4.5" (11.43cm) diameter



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