

# Laparoscopic Anti-Reflux Surgery

Nissen Fundoplication  
&  
O'Reilly-Mullins Procedure

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## Laparoscopic Anti-Reflux Surgery

Advanced laparoscopic surgical procedures require high quality laparoscopic instrumentation, high resolution video cameras, high flow insufflation and excellent assistance.

Access Surgical develops laparoscopic instrumentation which augments the performance of advanced procedures. Every aspect of Access Surgical laparoscopic instruments is designed to give the surgeon a better feel, more comfort and optimal control.

This commitment is evident in the **Laparoscopic Gastroesophageal Anti-Reflux Surgery kit**. The GERD kit includes laparoscopic high quality instruments designed to make laparoscopic anti-reflux surgery easier for the advanced surgeon and those less experienced.

The **O'Reilly esophageal retractor** was designed to safely and efficiently expose the distal esophagus in much the same manner as a surgeon's index finger accomplishes in the open procedure.

The upward retraction of the left lobe of the liver with the **Access fan retractor** and the downward traction of the stomach with the **Access Babcock/Debaquey grasper** atraumatically affords excellent visualization of the gastroesophageal junction.

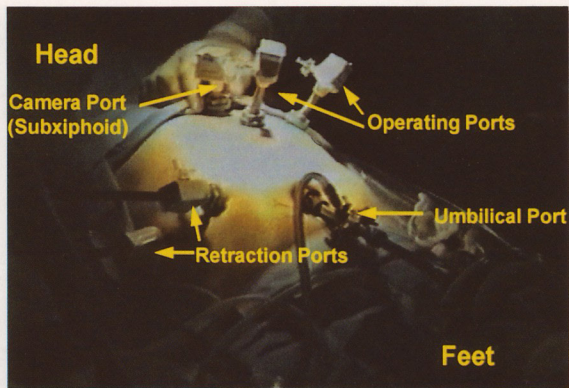
The difficult task of laparoscopic suturing is made much easier with the **Access needle drivers**. These needle drivers are specifically designed to prevent slippage of the needle and allow it to be placed at an infinite number of angles to the tissue.

The **Saye/Reddick closed knot pusher** makes extracorporeal knot tying fast and easy because the suture cannot slide off the knot pusher.

The extended 38 cm length of the Access GERD kit instruments was necessary due to the distance between the esophageal hiatus and the abdominal wall.

*Access laparoscopic instrumentation can facilitate both Nissen Fundoplication and the O'Reilly-Mullins Procedure (Posterior Partial Fundoplication).*

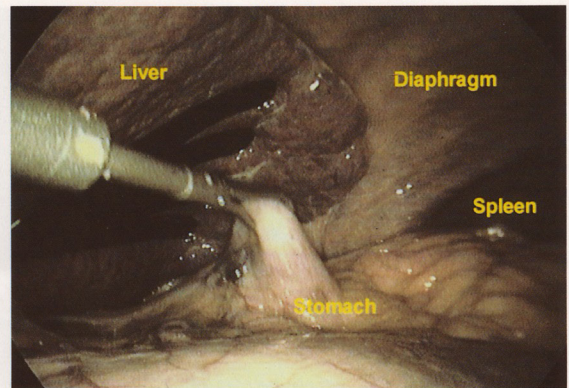
*Nissen Fundoplication is detailed steps one through ten. Posterior Partial Fundoplication continues in steps eleven through fourteen.*



Step 1

**PORT PLACEMENT**

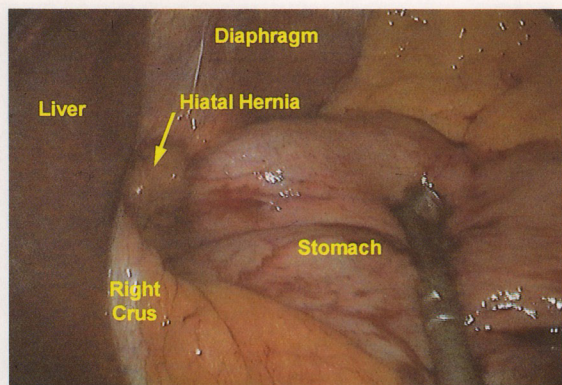
Six 10 mm ports: 2 retracting ports  
 (right subcostal)  
 2 operating ports  
 (left subcostal)  
 2 camera ports  
 (umbilical, subxiphoid)



Step 2

**EXPOSURE OF ESOPHAGEAL HIATUS**

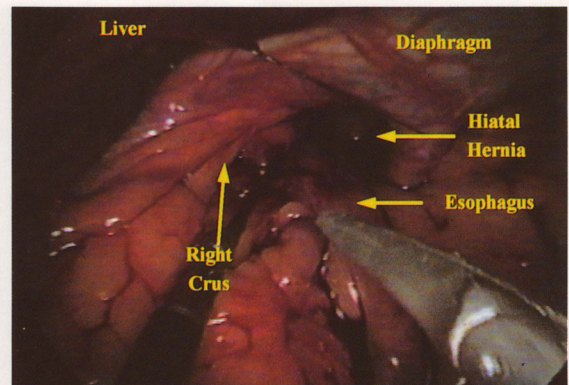
10 mm fan retractor placed through (R) lateral subcostal port lifting left lobe of liver anteriorly, Babcock forceps with Debakey teeth placed through (R) medial subcostal port grasping anterior wall of stomach with downward (caudad) traction.



Step 3

**ANATOMY**

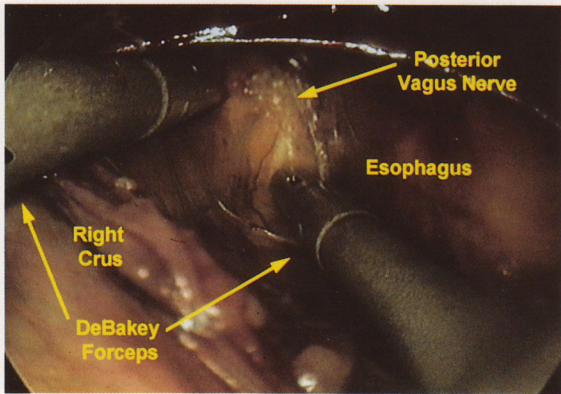
Pertinent anatomical structures must be identified prior to dissection by palpation with *closed* 10 mm Debakey forceps.



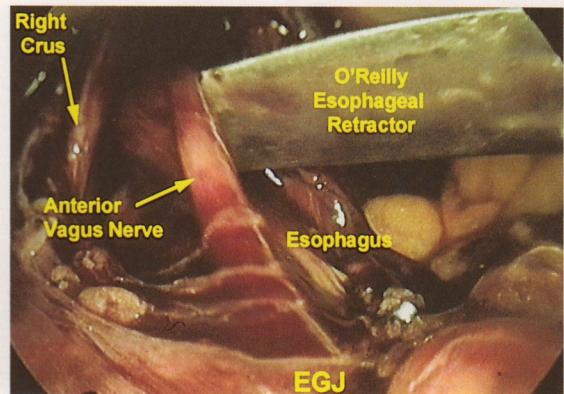
Step 4

**INITIAL DISSECTION**

The peritoneum overlying the esophageal hiatus is sharply transected with Metzenbaum scissors. Hemostasis is attained with clips; **NO ENERGY SOURCE IS RECOMMENDED** to prevent injury to the esophagus or vagal nerve trunks.



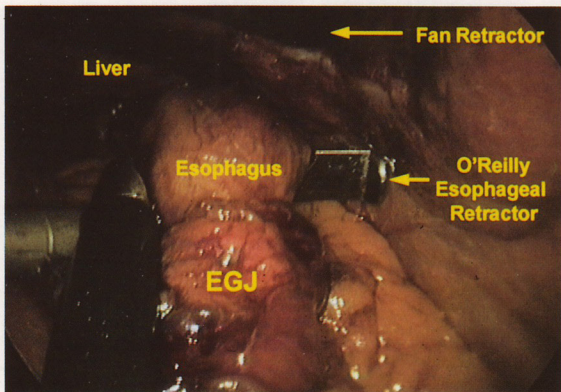
Step 5a



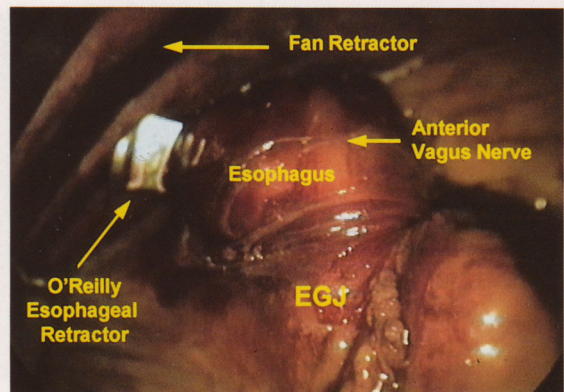
Step 5b

**PROPER PLANE OF DISSECTION**

Blunt dissection with *closed* DeBakey forceps is performed between the crura and the esophagus. Avoid dissecting immediately anterior to the esophagus. Visualization of the vagal nerve trunks verify the proper plane.



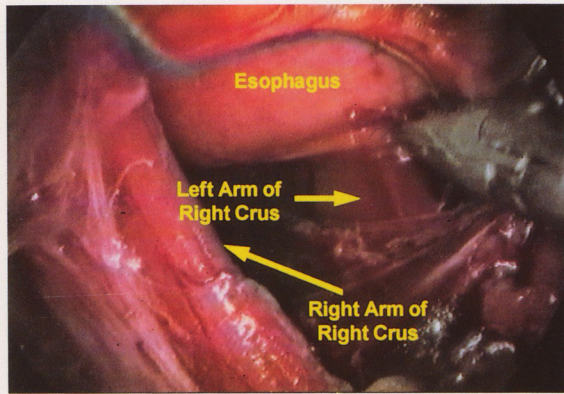
Step 6a



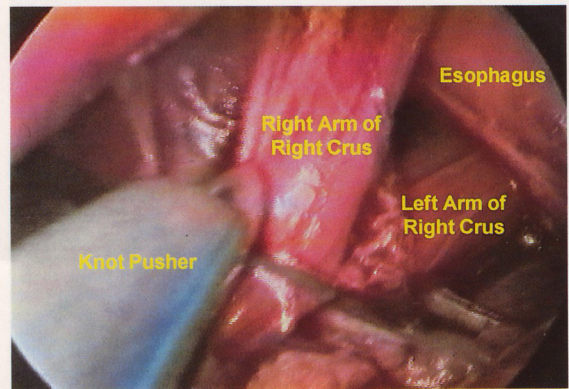
Step 6b

**ESOPHAGEAL MOBILIZATION**

The O'Reilly esophageal retractor is a blunt tipped articulating (0° to 90°) 10 mm instrument which allows atraumatic dissection posterior to the esophagus. The tip of the esophageal retractor is blunt which prevents slippage of the esophagus, allowing for excellent exposure. The action of the O'Reilly esophageal retractor is much like a surgeon's index finger.



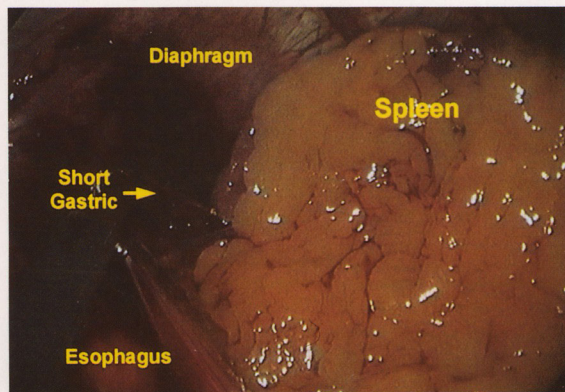
Step 7a



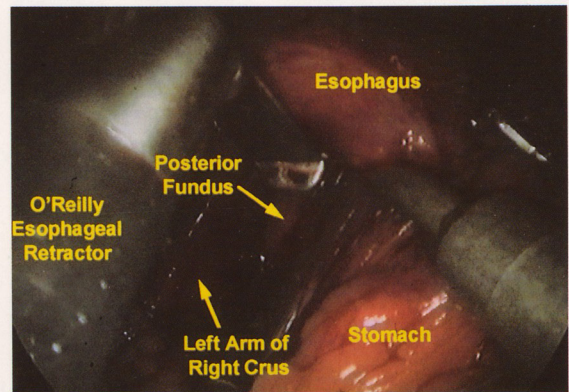
Step 7b

#### CLOSURE OF ESOPHAGEAL HIATUS

Utilizing Saye/Reddick needle drivers, the left and right crus are approximated posterior to the esophagus with 2-0 nonabsorbable suture. The knots are placed extracorporeally with the closed Saye/Reddick knot pusher. A 50 Fr esophageal dilator is placed to prevent obstruction at the hiatus.



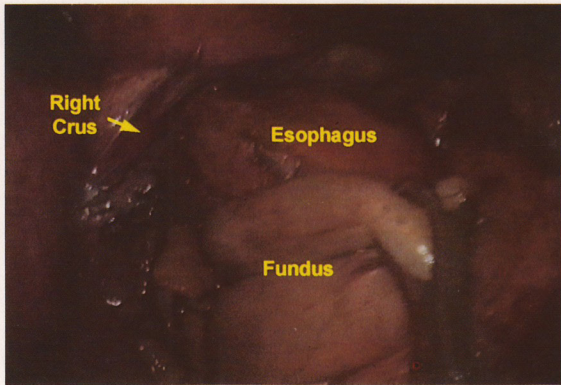
Step 8a



Step 8b

#### MOBILIZATION OF FUNDUS

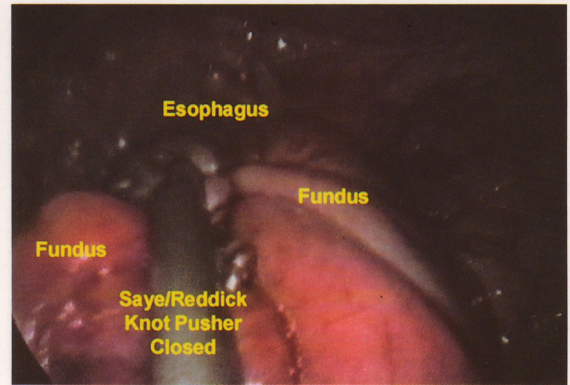
Transection of the peritoneal reflection lateral to the left crus and posterior fundus with Metzenbaum scissors frees the fundus in a majority of patients. If necessary, the short gastric vessels can be hemostatically transected between clips. NO ENERGY SOURCE IS RECOMMENDED. Dissection posterior to the esophago-gastric junction is accomplished from the right side of the esophagus. The O'Reilly esophageal retractor lifts the esophagus to the left and anteriorly. To assure a tension-free wrap, this dissection must allow clear visualization of the posterior fundus from the right side.



*Step 9*

**FUNDIC WRAP**

Babcock with Debakey teeth forceps pulls the fundus around the distal esophagus from the patient's right side.



*Step 10*

**NISSEN FUNDOPLICATION (360° wrap)**

With a 50 Fr esophageal dilator in place the fundus is approximated anterior to the distal esophagus with three interrupted stitches of 2-0 nonabsorbable suture secured extracorporeally. Two stitches incorporate the esophagus (partial thickness). The wrap is 2.0-2.5 cm in length.

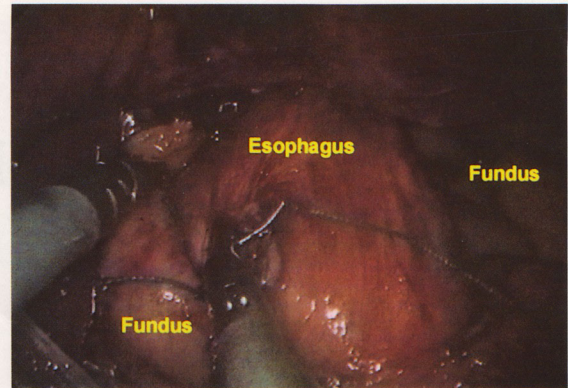
*Posterior Partial Fundoplication is described in steps eleven through fourteen.*

*When performing a Posterior Partial Fundoplication follow steps one through nine described within the Nissen Fundoplication section – then proceed with steps eleven through fourteen.*

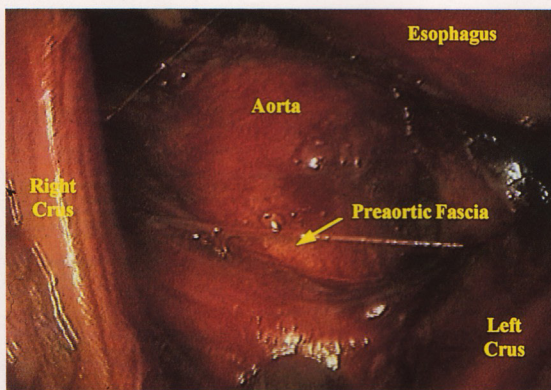
*O'Reilly-Mullins Procedure*

(200° wrap).

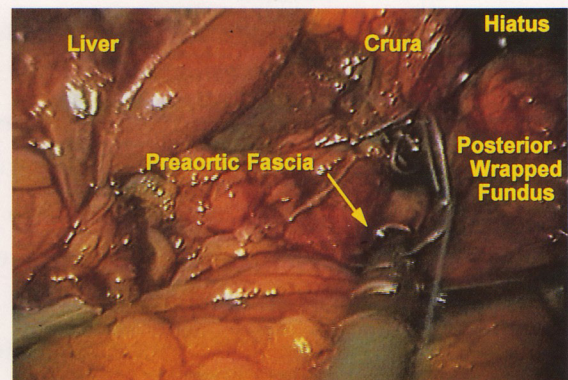
RIGHT WRAP – Performed in patients with decreased distal esophageal motility detected by esophageal manometry. The initial steps of the procedure are the same as in the Nissen (figures 1 through 9). In performing the posterior partial fundoplication, the posterior fundus is secured to the esophagogastric junction (phrenoesophageal bundle) and the right side of the distal esophagus with three interrupted stitches of 2-0 nonabsorbable suture.



Step 11



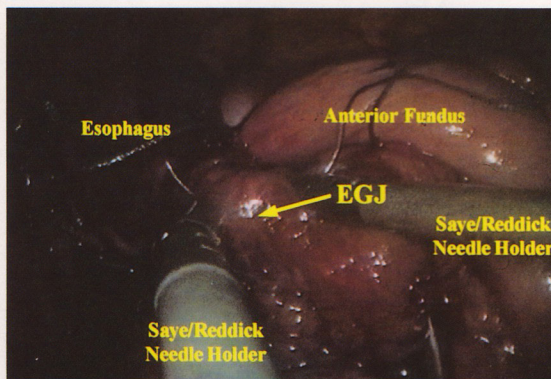
Step 12a



Step 12b

*O'Reilly-Mullins Procedure*

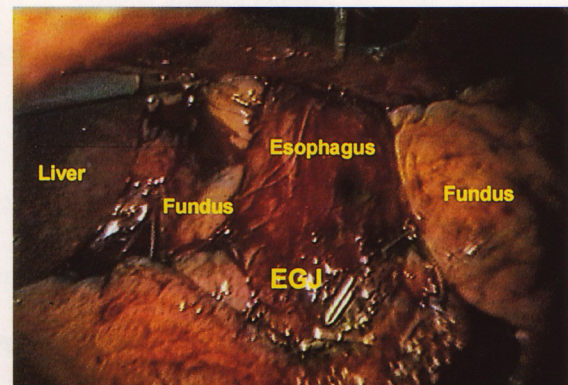
POSTERIOR GASTROPEXY – a key step in the posterior partial fundoplication is securing the posterior fundic wrap to the preaortic fascia.



Step 13

*O'Reilly-Mullins Procedure*

LEFT WRAP – the anterior fundus to the left of the esophagus is secured to the esophago-gastric junction (phrenoesophageal bundle) and distal esophagus on the left with three interrupted stitches of 2-0 nonabsorbable suture with a 50 Fr esophageal dilator in place.



Step 14

*O'Reilly-Mullins Procedure*  
COMPLETED PARTIAL WRAP.