Back to the Suture: The Two 5 mm Port Laparoscopic Appendectomy

James Lee MD
Lehigh Valley Health Network, James_H.Lee@LVH.COM

Margaret Moore MD
Lehigh Valley Health Network, Margaret_M.Moore@lvhn.org

Dale A. Dangleben MD
Lehigh Valley Health Network, Dale_A.Dangleben@lvhn.org

Follow this and additional works at: https://scholarlyworks.lvhn.org/surgery
Part of the Other Medical Specialties Commons, and the Surgery Commons

Published In/Presented At

This Poster is brought to you for free and open access by LVHN Scholarly Works. It has been accepted for inclusion in LVHN Scholarly Works by an authorized administrator. For more information, please contact LibraryServices@lvhn.org.
INTRODUCTION
During this era, there has been a trend towards performing operations with less invasive techniques and in turn, less scars. Techniques representing this trend are transumbilical single-incision laparoscopic surgery (SILS) and natural orifice transluminal endoscopic surgery (NOTES). However, during this economic climate of decreasing reimbursements and increasing costs, the price of single-port devices and associated instruments are prohibitive. In the western world, appendectomy is currently the most common abdominal operation performed on an emergency basis. What we describe is a procedure that has significant cost savings over both a standard laparoscopic appendectomy and a transumbilical single-incision laparoscopic appendectomy with the added benefit of improved cosmesis. This technique is a modification of the standard laparoscopic appendectomy that utilizes two 5 mm ports, a transabdominal sling suture for traction and manipulation of the appendix, and suture ligation of appendix and its mesentery.

OPERATIVE TECHNIQUE
1. A 5-mm camera port is placed through the umbilicus; utilizing a 5-mm 30° camera
2. A second 5-mm port is placed in the left lower quadrant lateral to the rectus muscle; this port is used for a Maryland dissector/Davol grasper
3. An Endoclose device loaded with a vicryl suture is placed transabdominally through the mesoappendix. The vicryl suture on the side of the mesoappendix distal to the abdominal wall is then held with a grasper and snared by the Endoclose device and brought back through the abdominal wall in a retrograde fashion to suspend the appendix from the abdominal wall (alternatively a nylon suture on a Kelly needle can be used). This is known as a transabdominal “sling” suture, where traction on the appendix may be adjusted using a Kelly clamp and varying the length of the “sling” suture.
4. A Maryland dissector placed through the 5-mm left lower quadrant port is then used to create a window through the mesoappendix at the base of the appendix.
5. A vicryl suture is then placed through the mesenteric window at the base of the appendix. The mesoappendix is then ligated using extracorporeal knot tying with a knot pusher. This is then repeated for the proximal portion of the mesoappendix. The mesoappendix is then divided using endoscissors.
6. The base of the appendix is similarly ligated and divided.
7. The base of the appendix can be “dunked” using the endoclose device or alternatively cauterized with electrocautery.

STANDARD LAP APPY
Two 5 mm port
One 12 mm port
One endoGIA staplers
Endodog
Maryland dissector
Gasper
Endoclose needle
One PDS suture
AVG COST: $1214

SILS APPY
SILS port
One endoGIA stapler
Maryland dissector
Gasper
Endoclose needle
One monorcyll suture
Kelly clamp
AVG COST: $359

2 – 5 MM PORT LAP APPY
Two 5 mm port
One Two reloads
Gasper
One monorcyll suture
Knot pusher
Endo scissors
AVG COST: $392

AVG COST: $539

Laparoscopic appendectomy is $675 more expensive than 2-5 mm port laparoscopic appendectomy = 55.6% cost savings
SILS appendectomy is $362 more expensive than 2-5 m port laparoscopic appendectomy = 41.4% cost savings

DISCUSSION
Contraindications (“recognize that not every case is amenable to this technique ”)
• Abscess
• Diffuse peritonitis
• Pyloritis
• Necrotic base
• Thick mesoappendix
• Retrocecal appendix
• Multiple previous abdominal surgeries
• Inexperienced surgeon

Potential Benefits
• Improved cosmesis
• Cost savings
• Decreased postoperative pain
• Decreased risk of hernia formation/bladder injury
• Advanced laparoscopic skills training

What’s Next
• Two 5 mm ports in umbilicus
• Cheaper closure device

“Conversion to standard laparoscopic appendectomy/open appendectomy represents good surgical judgement and not a sign of failure.”

Back to the Suture: The Two 5 mm Port Laparoscopic Appendectomy
James Lee, MD, Margaret Moore, MD, Dale A. Dangleben, MD, FACS • LEHIGH VALLEY HEALTH NETWORK, ALLENTOWN, PENNSYLVANIA

A PASSION FOR BETTER MEDICINE:

610-402-CARE LVHN.org