Strategies In
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New Horizons in Minimally Invasive Surgery

- **Laparoscopic Fundoplication**
- **Laparoscopic Heller Myotomy**
- **Laparoscopic Donor Nephrectomy**
- **Laparoscopic Splenectomy**

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Only since 1990, with the advent of laparoscopic cholecystectomy, has laparoscopy become generally accepted .[1] Since then, its perceived efficacy with quicker recovery and improved cosmesis has made it the treatment of choice in many areas of surgery.

Specifically, techniques for laparoscopic appendectomy, colectomy, and inguinal and ventral hernia repair were developed. In addition, thoracic surgeons developed operations for lung resection and emphysema management, and trauma surgeons used laparoscopy in the diagnosis and management of select intra-abdominal injuries. This article focuses on advanced laparoscopic procedures now performed by OU Physicians surgeons.

Laparoscopic Fundoplication

Gastroesophageal reflux disease (GERD) is, after cholelithiasis, the second most common benign gastrointestinal tract disease in this country. As such, an estimated two to four million adults have GERD severe enough to require treatment. Recent randomized clinical trials have confirmed both that fundoplication may be superior in the long run over medical treatment for patients with severe reflux and that laparoscopic fundoplication is equivalent to or better than open surgery. In laparoscopic fundoplication, five incisions, each one to two centimeters in length, are made. Patients return home an average of 1.6 days postoperatively.[2]

Laparoscopic Heller Myotomy

Achalasia is an uncommon but debilitating motility disorder of the esophagus. While initially responsive to endoscopic dilatation and/or injections, most patients eventually require operative management. Results with the laparoscopic approach, which uses incisions similar to that for fundoplication, have shown outcomes similar to open surgery with a marked decrease in length of stay.[3]

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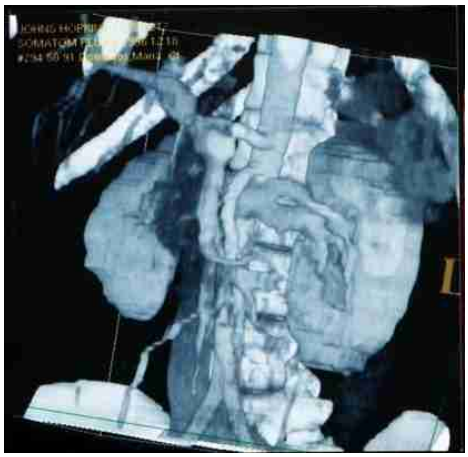

Figure A: 3D CT of Abdomen

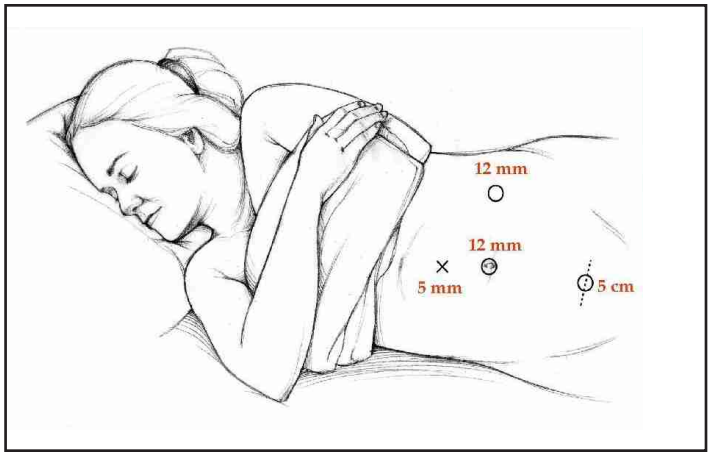

Figure B. Patient Positioning and Trocar Placement

Laparoscopic Donor Nephrectomy

Renal transplantation remains the only definitive therapy for patients with renal failure. Unfortunately, the supply of cadaver kidneys cannot keep up with the demand. (Of 47,000 patients awaiting kidney transplantation in this country, more than half will die of their disease before a kidney becomes available.) Organs from living donors must therefore make up the difference.

Although a donor operation puts two patients at risk, kidneys obtained from live donors generally have better short- and long-term function. In order to make operations more palatable to potential donors, who, after all, are healthy and must often take uncompensated time off from their own employment, a laparoscopic approach has been developed.

Following a work-up, including a 3D CT scan (Figure A), four incisions are made (Figure B). As the kidney needs to be removed intact, one is approximately six centimeters in length. Results show that recipient kidney function and donor complications are equivalent to the open surgical approach. However, patients experience shorter hospital length of stays and return sooner to full activity.[4]

Laparoscopic Splenectomy

As with other procedures, laparoscopic splenectomy was developed primarily to allow patients a shorter recovery period. It is now recognized as standard treatment for most adults requiring splenectomy for hematologic disorders such as idiopathic thrombocytopenic purpura (ITP).[5]

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