Strategies In
Surgery
Summer 2002

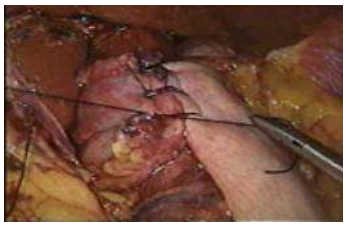

Figure A: Laparoscopic Nissen fundoplication

- **Laparoscopic Nissen Fundoplication**
- **Laparoscopic Orchiopexy**
- **Laparoscopic Intestinal Surgery**
- **Laparoscopic Splenectomy**
- **Laparoscopic Thoracic Procedures**

Update on Minimally Invasive Strategies in Pediatric Surgery

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Worldwide, pediatric laparoscopic surgery is still in the developmental stage compared to laparoscopic surgery in adults. However, new, smaller instruments developed specifically for treating children have become more widely available in the last eight years. Using these instruments, OU Physicians pediatric surgeons have been pioneers in performing the pediatric laparoscopic surgeries listed below.

Laparoscopic Nissen Fundoplication
The Nissen fundoplication is the most commonly performed procedure for treating gastroesophageal reflux in children. Our pediatric surgeons have performed more than 200 laparoscopic fundoplication procedures (Figure A) since 1997.

This procedure has dramatically reduced the average hospital stay from five days to 36 hours. Most children begin taking liquids four hours after surgery and are eating normally the next day. The complication rate for the procedure is less than that for an open fundoplication, making it a much safer operation for children.

Laparoscopic Orchiopexy
We performed our first laparoscopic orchiopexy (Figure B) for an undescended testicle in 1994. Since then, this procedure has become our preferred method for dealing with intra-abdominal testicles. It permits the complete mobilization of the blood vessels to the testicle, allowing the testicle to be placed completely in the scrotum. This procedure has allowed us to replace a two-stage operation with a single-stage one performed in an outpatient setting.

Laparoscopic Intestinal Surgery
We have used laparoscopy to treat Hirschsprung's disease, Crohn's disease, imperforate anus and malrotation. While not every patient with intestinal disease is a candidate for a laparoscopic approach, many children can benefit from this technique. Less pain, decreased wound

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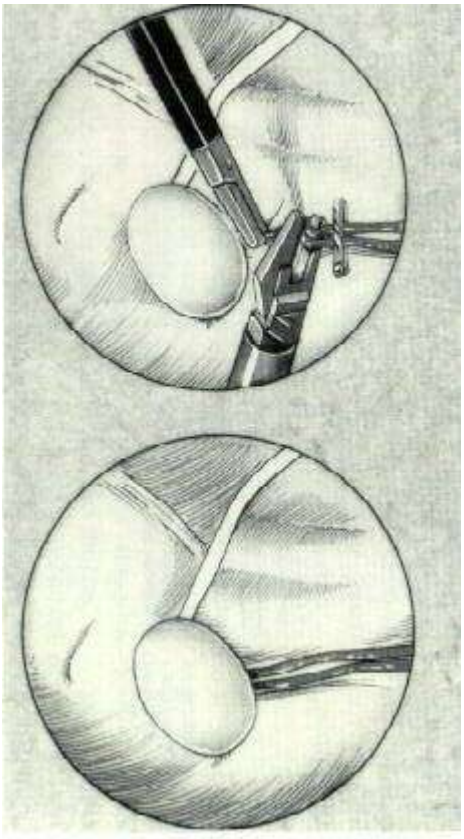

Figure B: Laparoscopic orchiopexy

complications, shorter hospital stays and reduced intra-abdominal adhesions are typical outcomes. We have even used laparoscopy to create a new vagina out of colon for a girl with congenital absence of the uterus and vagina (Figure C).

Laparoscopic Splenectomy

Laparoscopic splenectomy is our method of choice for the elective removal of the spleen for hematologic disease. With the improved optics now available, the probability of residual accessory spleens is minimized and patients routinely are discharged within 24 hours of surgery. The spleen diseases most easily treated with laparoscopy include hereditary spherocytosis, hereditary elliptocytosis and congenital splenic cysts.

Laparoscopic Thoracic Procedures

We frequently use minimally invasive techniques in pediatric thoracic surgery. The most common procedure is thoracoscopic decortication for empyema. This technique requires only three small thoracic incisions less than an inch wide as compared with a true thoracotomy incision that extends across the entire chest. With these same techniques we can perform pulmonary resections as well as lung biopsies for tumors or infections. Mediastinal tumors have also been removed with thoracoscopic techniques.

We believe these minimally invasive approaches offer the best options for reducing pain and hospitalizations while allowing precise surgical correction of the underlying problem.

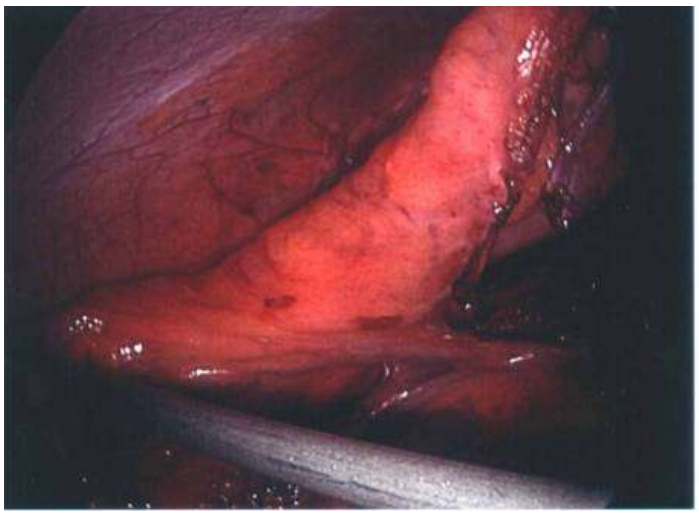

Figure C: Laparoscopic creation of vagina

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