



# YOUR SURGICAL CONSULTANT

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Pediatric Surgical Associates is now on-line! Visit us at [www.pedisurgdfw.com](http://www.pedisurgdfw.com). You will find information you can share with your patients including maps to our various locations, facts regarding surgical conditions affecting children, and a little about who we are. Back issues of this newsletter, "Your Surgical Consultant", may also be found there. Remember, some areas are still "under construction", so check back regularly. We will keep you informed of additions to the site as they are added. Comments regarding items which you or your patients would find useful will be welcomed!

As all of you know, A National Provider Identifier number (NPI) will be required for all consultations by May of 2007. **To prevent possible delays in service and patient inconvenience, please forward your NPI numbers to us by fax at (817) 336-6821 or by email at [psafw@yahoo.com](mailto:psafw@yahoo.com).**

For your records, these are our NPI numbers:

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## MINIMALLY INVASIVE SURGERY: ABDOMINAL

Reports of minimally invasive surgery (MIS) in infants and children began in the early 1970s, but these were largely confined to simple diagnostic procedures. The development of MIS has been slower in pediatrics than it has in adults.

Pediatric laparoscopy began in the early 1990s with the adaptation of adult instruments to smaller patients for therapeutic procedures such as cholecystectomy. Enthusiasm has grown worldwide among pediatric surgeons over the past 20 years, and advancements in optics, video, lighting, microchips, miniaturization, and ergonomics have rendered laparoscopy and thoracoscopy much safer and more available to younger and smaller patients.

In general, MIS allows better operative visualization, fewer postoperative adhesions and bowel obstructions, de-

creased inflammatory response and postoperative pain, improved postoperative pulmonary function, earlier return of bowel motility, shorter postoperative hospital course, earlier return to prior activities, and obvious cosmetic improvements. Today, most procedures traditionally performed using "open" techniques have been described employing minimally invasive techniques. Only time will tell which MIS procedures become routine, but many are already proving to be good alternatives or have become standard of care.

This is the first of two articles which will discuss some of the most common MIS procedures in children.

One of the earliest laparoscopic procedures in children involved the **evaluation of a possible contralateral inguinal hernia**. This procedure has become much more accurate

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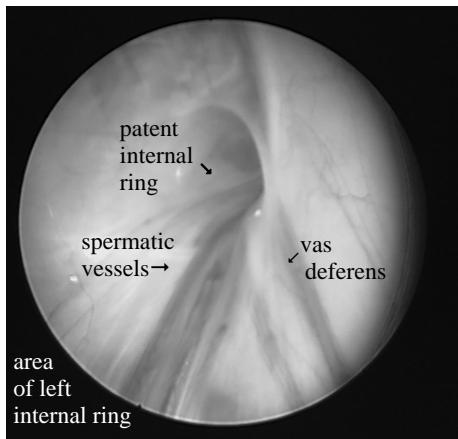
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and easier to perform due to the many technological improvements mentioned above. By placing a thin telescope



through the open hernia sac prior to ligation, the contralateral internal ring may be visualized and patency evaluated. Sensitivity and specificity are ~99.5%, and contralateral open exploration is rendered

unnecessary in about two-thirds of children. Operative time is increased by only six minutes but is significantly decreased compared to a negative open exploration. The potential for vessel or vas deferens injury is also eliminated.

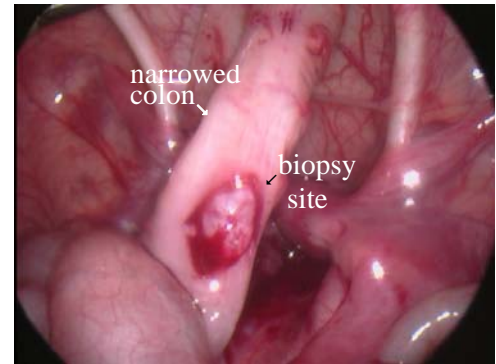
A natural extension of this procedure is the **assessment of undescended, atrophic, dysgenic, or vanishing testis**. Laparoscopy easily differentiates these conditions, avoiding open exploration, then is used in definitive management with **orchidopexy**, resection of atrophic or dysgenic testes, or staged orchidopexy for very high or intraabdominal testes. **Pathologic ovarian conditions such as cysts, torsion, and some masses**, are best managed laparoscopically.

One of the first advanced procedures to gain wide acceptance was **laparoscopic fundoplication**. This is a superior alternative to an upper midline or left subcostal incision for most infants and children requiring surgical intervention for severe gastroesophageal reflux. Both children and infants (even those weighing less than 3 Kg) may benefit from the laparoscopic approach. Studies show less narcotic usage, fewer pulmonary complications, less risk of postoperative bowel obstruction, lower overall cost, and earlier discharge from the hospital (by one to three days). The overall complication rate approaches the open technique, and operative costs are nearing parity (<\$500 difference) with improved technology, fewer disposable instruments, and increasing experience. Nationally, over 85% of all funduplications in children are being performed laparoscopically. We also frequently place **feeding gastrostomies** using MIS techniques.

MIS has also greatly improved the treatment of patients with **Hirschsprung's disease** (congenital megacolon). Formerly, these patients underwent a staged approach including a colostomy above the aganglionic segment. This was followed a few months later by laparotomy to resect the aganglionic segment and the normal colon 'pulled through' to an anal anastomosis; several days of hospitalization were required. The colostomy was often closed at a third procedure. There is now an excellent MIS alternative to this scenario

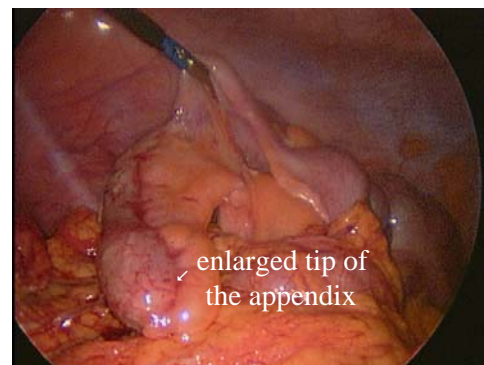
Following diagnostic suction rectal biopsy, a laparoscopic colon biopsy is performed to confirm the level of disease and to exclude total colon aganglionosis. The aganglionic colon is freed internally, and the pull-through completed transanally. (Laparoscopy allows higher dissection and more accurate orientation of the pull-through than does

a pure transanal approach.) Benefits include: avoidance of a colostomy (with potential complications), earlier definitive repair, less blood loss, shorter hospitalization (by two to five days), less pain, fewer adhesions, less risk of bowel obstruction, and tinier scars. A slightly increased incidence of enterocolitis in infants is generally easily treated. The surgical treatment of Hirschsprung's disease is one of the most striking examples of how laparoscopic techniques have improved patient care.



**Cholecystectomy** is perhaps the most common laparoscopic procedure done, and gall bladder disease is on the increase in children. These days, most of us can not recall the last "open" cholecystectomy we performed, and some younger surgeons can not recall having ever performed one!

Nationally, most **appendectomies** are now being performed



formed laparoscopically. This technique is best employed in non-perforated disease; the risk of a postoperative abscess after perforated appendicitis

is higher when treated laparoscopically than when the open technique is used. Nonetheless, girls, teenagers, and athletes appreciate smaller scars and a quicker return to full activity.

Even a procedure as simple as **pyloromyotomy** for pyloric stenosis has been improved upon by laparoscopic techniques. We now offer "1 stitch" pyloromyotomy using three, 3 mm instruments in a 12 minute procedure.

Extirpative surgery is occasionally required in children with tumors or hematologic disorders. A laparoscopic approach to **splenectomy, adrenalectomy and nephrectomy** affords many of the benefits noted above. Removal of large solid organs after fragmentation inside a plastic bag has been shown not to adversely affect histologic examination.

Our group has published regarding, lectured about, and accumulated a broad experience with laparoscopic surgery. In fact, the first laparoscopic splenectomy done in Houston was performed by a member of our group on a child. **We are the only pediatric surgeons in Tarrant County who perform all of the above procedures. We welcome the opportunity to benefit your patients with our expertise.**

Next month we will discuss the application of MIS to thoracic conditions through the technique of thoracoscopy.

**Disclaimer:** All material is intended for informational purposes only and is not intended, and should not be used, to replace medical advice offered by a qualified physician. We are always available and willing to discuss questionable conditions with you and we invite your request for our assistance.