

## Genito-Urinary (con't.)

### LAPAROSCOPIC EVALUATION FOR CONTRALATERAL PATENT PROCESSUS VAGINALIS IN CHILDREN WITH UNILATERAL INGUINAL HERNIA

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**Background:** Management of the contralateral inguinal region in children with unilateral inguinal hernia remains controversial. Several methods for evaluation for a contralateral patent processus vaginalis (CPPV) have been described. However, the role of laparoscopy in evaluation for CPPV remains unclear. We report the results of an investigation of 1625 consecutive children younger than 10 years of age undergoing inguinal hernia repair between May 1992 and January 2003.

**Methods:** One-hundred ninety-three (193) of the 1625 patients were excluded from analysis due to the existence of bilateral inguinal hernias pre-operatively which left 1432 patients as the study group. The contralateral inguinal region was examined under general anesthesia (EUA) and the operating surgeon noted whether or not a CPPV was suspected. All patients then underwent laparoscopic evaluation of the contralateral inguinal region at the time of unilateral hernia repair.

**Results:** Seventy-three patients (5.4%) had hernia sacs that were too thin to allow insertion of the telescope but laparoscopy was successful in 1359 cases (94.6%). A CPPV was identified in 548 of the laparoscopically examined children (40.3%). At EUA, it was predicted that 427 of the 1432 patients would have a CPPV. Laparoscopy confirmed the presence of a CPPV in 188 (44%) of the children predicted to have a CPPV by EUA. Conversely, EUA was not suspicious for a CPPV in 937 of the examined children and the absence of a CPPV was confirmed by laparoscopy in 571 of these children (61%); however, a CPPV was found in 361 (39%) of this group.

**Conclusions:** We conclude that examination under anesthesia is a poor predictor for the presence or absence of a contralateral patent processus vaginalis. Laparoscopy can reliably evaluate the contralateral inguinal region and is the best method to evaluate for a contralateral patent processus vaginalis.

### THE DEFLUX PROCEDURE REDUCES THE INCIDENCE OF URINARY TRACT INFECTIONS IN PATIENTS WITH VESICoureTERIC REFLUX

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**Purpose:** To review the experience of a single institution with the Deflux procedure and assess its effectiveness in reducing the incidence of urinary tract infections (UTI) in children with vesicoureteric reflux (VUR).

**Methods:** After IRB approval, the charts of 100 patients with VUR, who presented between 6/2003 and 6/2005, were prospectively reviewed. Data collected included: demographics, number of preoperative and postoperative UTI's, radiologic grade of VUR on a voiding cystourethrogram (VCUG) and the presence of VUR on a radionuclide VCUG 3 months after the procedure. Patients were continued on suppressive doses of oral antibiotics until urine culture at 3 months was negative and no reflux demonstrated on VCUG. Student's t-test was used for data analysis.

**Results:** Mean age was  $3.8 \pm 0.3$  years, 76% were girls. From 155 ureters treated, 10 (6.5%) had Grade I reflux, 42 (27.1%) Grade II, 76 (49%) Grade III, 25 (16.1%) Grade IV and 2 (1.3%) Grade V. A 2nd injection was required in 22 ureters (14.2%). The overall success rate of the procedure (Grade 0 reflux at 3 months) was 77.4% after the 1st injection and 83.9% after a 2nd injection. Success rate per grade was: 100% for Grade I, 88.1% for Grade II, 86.8% for Grade III, 64% for Grade IV and 50% for Grade V. Mean follow up was  $446 \pm 20$  days. Mean volume injected/ureter was  $0.6 \pm 0.03$  ml. Thirteen patients had UTI's after the procedure compared to 75 before. There was a 5 fold reduction in the incidence of UTI's/year from a mean of  $0.68 \pm 0.09$  pre to  $0.12 \pm 0.04$  postinjection ( $p = 0.001$ ). The majority of UTI's were caused by E Coli (74% pre- and 82% post-injection).

**Conclusion:** We conclude that the Deflux procedure is effective not only in eliminating VUR on radiologic studies but also in reducing the incidence of UTI's and antibiotic use in children with VUR.

## Instrumentation

### LESSONS LEARNED FROM MAJOR ENTRY RELATED COMPLICATIONS DURING LAPAROSCOPY

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This study is a review of conditions and circumstances associated with 7 major bowel and vascular injuries during trocar introduction. All cases occurred in the authors operating rooms were more than 500 cases are operated each year by laparoscopy.

**Results:** We encountered 2 complications during introduction of a primary trocar: one aorta injury (blind technique) and one bowel perforation (scissors during an open procedure). During introduction of a secondary trocar in the groin area we had 3 iliac vessel injuries and 2 bowel perforations.

One great vessel injury was treated with simple compression. All other cases needed direct conversion with one suturing of the aorta, one common iliac vein and one internal iliac artery reconstruction. Diagnosis of bowel perforations were all delayed and needed secondary laparotomy except in one case where the bowel was extracted through the umbilicus. All planned operations were normally completed during the initial procedure. Pathologies involved were of various origin: 2 appendicitis, 1 residual abscess after primary appendectomy, 1 impalpable testis, 1 inguinal ring control, 1 intestinal duplication and 1 vesico-ureteral reflux (pneumovesicoscopic Cohen operation).

All patients had uncomplicated recovery. The patient with aorta injury needed to be transfused. There were no litigated cases.

**Discussion:** The incidence of trocar-induced major organ injury is very small but may lead to important complications including death. It may happen as well during introduction of the primary as the secondary trocars. Authors reviewed their cases and examined also litigated cases insured by one of the biggest medical insurance companies in France in order to give some advice about solutions able to decrease the number of major injuries. Vascular injury is usually obvious but has absolutely to be confirmed by opening of the retro peritoneum. If not, death by multiple organ failure is frequent. Delayed diagnosis of bowel injury leads of course to peritonitis but is not related to increased mortality in children.

**Conclusion:** Each hazardous introduction of a trocar needs a thorough inspection of the concerned area. In authors mind a blind introduction of the first trocar and the use of a Veress needle have to be avoided except, perhaps, in obese patients. Introduction of secondary trocars in groin area has to be very careful and probably not too close to the iliac vessels.

### THE STAB WOUND ACCESS TECHNIQUE (SWAT) IN PEDIATRIC LAPAROSCOPIC SURGERY

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**Introduction:** Laparoscopic ports take up space, frequently require extra fixation, and are costly. We have minimized the use of ports in pediatric patients by using a stab wound access technique (SWAT), in which one port is used for insufflation, while all other instruments and even the laparoscope are passed through stab wound incisions without ports.

**Methods:** We reviewed our experience with SWAT over a 14-month period, and compared SWAT patients to conventional all port (AP) patients. Data included patient age, weight, procedure, number of ports and stab wounds used, and complications.

**Results:** 132 patients underwent a laparoscopic procedure by one surgeon during the study period. SWAT was utilized in 67 (51%), AP in 65. We found SWAT to be easier and more advantageous in smaller patients. Average age (3.3 vs. 12.2 years) and weight (17.5 vs. 61.9 kg) were less for SWAT than AP patients. Nissen fundoplication ( $n = 27$ ) was the most common SWAT procedure, followed by pyloromyotomy (18), and appendectomy (12). There were no complications related to the stab wound or port sites. The total number of stab wounds used was 192, reflecting a hospital cost savings of \$12,211, or \$182 per patient.

**Conclusion:** SWAT is a safe, cost-effective alternative to using ports at all sites. SWAT appears to be more practicable in smaller patients, but is safe and feasible in larger patients as well.