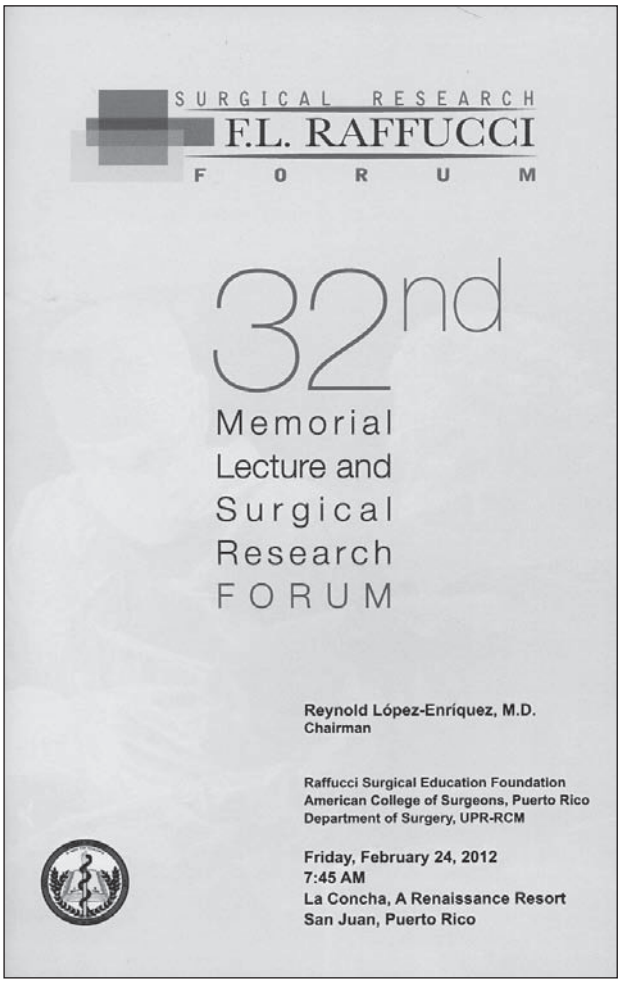

- **Decreasing Wound Closure Time by using V-Loc Sutures**

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Purpose: Recently, barbed, knotless, self-anchoring surgical sutures have been introduced into the surgeon's armamentarium. At the present time, two barbed suture products are commercially available: bidirectional sutures (Quill) and unidirectional sutures (V-Loc). Manufactured from synthetic monofilament fibers they have barbs that anchor to tissue without requiring knots (Figure 1). Barbed sutures have been reported to decrease wound closure time by as much as 33% when compared to conventional suturing techniques. In an effort to evaluate the time saved by not having to tie knots during wound closure, this study compared the use of a barbed suture (V-Loc 90) to conventional suturing technique in breast reduction surgery. Method: A group of twenty patients scheduled for reduction mammoplasty were operated on by the same surgeon, on the same facility, with the same anesthesiologist. Wound closure for the first 10 patients was done using standard interrupted single layer approximation with 4-0 Vicryl sutures. V-Loc-90 barbed absorbable running sutures were used for the remaining 10 patients. The two groups were compared regarding total surgical time, wound closure time, rate of wound dehiscence, suture extrusion and cosmesis. Basic demographic information of the two groups, including age, body mass index, bra size, and presence of co-morbid conditions were also obtained. All patients were followed for at least 5 weeks. Results: The two groups were not significantly different regarding age (31±9 vs. 30±10), body mass index (30±3 vs. 31±2) bra size (cup D vs. cup D) or presence of co-morbid conditions. The total surgical time decreased by one hour when the knotless barbed suture was used (4.50 hrs. vs. 3.50 hrs.). The decrease of the wound closure time accounted for the difference noted, changing from a mean of 1 hour 20 minutes to only 20 minutes. No difference was noted between the groups regarding wound dehiscence and cosmetic appearance of the closed wounds. In the group in which interrupted Vicryl sutures were used, two patients had extrusions of several knots. However, no suture material extrusion was noted in the group in which V-Loc 90 sutures were used. Conclusion: The new knotless, unidirectional barbed sutures are an innovative option for wound closure. The elimination of knot tying may have advantages over conventional wound closure, such as decreased wound closure time. Bulky knots may be a nidus for infection, and they extrude through the skin weeks after surgery. The barbed suture, with a cosmesis and safety profile that is similar to that of conventional suture techniques, avoids the drawbacks inherent to suture knots.

Figure 1. Magnified barbed suture

- **Recalcitrant Airway Stenosis in Patients with Abnormal Scars**

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Purpose: Acquired airway stenosis continues to threaten patients who are endotracheally intubated despite widespread knowledge of preventive measures such as low cuff pressures, early tracheotomy, and the regular use of antireflux medications. Airway stenosis also poses a great surgical challenge since many patients require multiple procedures before resolution, and some patients even remain tracheotomy dependant due to recalcitrant stenosis. We have noticed an inherent predisposition to recalcitrant airway stenosis in patients with aberrant wound healing, specifically hypertrophic scarring and keloid formation. These patients not only present with high grades of stenosis, but have required multiple interventions due to recurrent failures in a short period of time. In this retrospective chart review, we attempt to identify factors that lead to failures in laryngotracheal reconstruction and substantiate the clinical suspicion that patients with aberrant wound healing are more

likely to fail initial reconstruction surgery, requiring multiple procedures. Method: A retrospective chart review of patients who failed initial laryngotracheal reconstruction surgery and required additional procedures. The main outcome measure was decannulation. We evaluated demographic data, cause of stenosis, Cotton-Myer grade of stenosis, surgical techniques, and medications employed, and whether patients presented evidence of aberrant wound healing in other anatomic sites. Results: We conducted a retrospective chart review of patients at our institution with a diagnosis of laryngotracheal stenosis. Over a 2-yr period, we identified 23 patients, 6 who failed initial laryngotracheal reconstruction surgery and required additional procedures. 5 out of 6 patients (83%) demonstrated hypertrophic scarring on physical exam. The cause of stenosis in every patient was mechanical ventilation ranging from 5-20 days. All patients presented with Cotton grades 3 or 4. Although surgical technique did not vary among patients, all underwent a minimum of three interventions over a 2 year period, despite the regular use of steroids and anti-reflux medications. Mitomycin C was used in only one patient and she is currently tolerating capping. 2 patients have been deccanulated, but continue to exhibit dyspnea on exertion. Three continue to be tracheotomy dependant. Conclusion: We have observed a high incidence of aberrant scarring in a group of patients which fail initial laryngotracheal reconstruction. Although multiple causes for failure have been identified in the literature, this correlation has not been reviewed. Our results suggest there may be a genetic predisposition to develop airway stenosis in patients with abnormal scars. If further research proves such correlation, these patients can be identified in our ICU's as "high risk" of developing airway stenosis for which aggressive preventive measures can be applied.

- **Parathyroidectomy in Normocalcemic Primary Hyperparathyroidism: Analysis of Operative Outcomes**

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Purpose: In recent years, PTH levels have been ordered with increased frequency as part of the work up for different conditions (eg. Bone disease, renal insufficiency and nephrolithiasis) even in the absence of hypercalcemia. Therefore, an emerging number of patients are being referred to surgeons with elevated PTH and normal serum calcium. Currently, there are no clear guidelines for surgery in these patients and very little has been published about outcomes of patients who have undergone parathyroidectomy in this setting. The purpose of this research is to evaluate preoperative localization, intraoperative findings and PTH levels, pathology and postoperative PTH levels in patients with normocalcemic primary hyperparathyroidism (NCPH) who underwent parathyroidectomy. Method: Clinical data from patients who underwent parathyroidectomy at UPR between 2007-2011 and who had at least 6 months follow up was reviewed from our prospective database. Criteria for inclusion were: 1. PTH > 65 pg/ml 2. Serum calcium < 10.3 in at least two samples taken at least one month apart, patients should be off diuretics or biphosphonates at the time the sample was taken 3. Normal vitamin D 25-OH levels 4. Normal or low urinary calcium in 24 h urine collection and 5. Absence of possible causes for secondary hyperparathyroidism. Preoperative localization studies were correlated with intraoperative findings. Operative diagnosis was made according to intraoperative PTH results and correlated with permanent pathology. Finally, we looked at postoperative PTH and calcium levels at 6 months after surgery. Results: Of 104 patients who had parathyroidectomy for primary hyperparathyroidism (PHPT), 9 had NCHP for a 7.6%. All patients were presenting complications attributable to PHPT or met one or more criteria for surgery in asymptomatic patients. Of these, 7 patients (77%) had positive preoperative localization studies. The PPV was 100%. During surgery, 8 patients (88%) had a parathyroid adenoma; completion of surgery was determined by intraoperative PTH. Permanent pathology correlated with operative findings in all 9 patients (100%). Normal postoperative PTH levels were achieved in 6 patients (66%). All patients (100%) remained eucalcemic after surgery. Conclusion: When following the same guidelines for surgery as for patients with hypercalcemic PHPT a parathyroid adenoma will be found in most instances. Most patients will achieve normal PTH levels after adequate surgery. The significance of persistent postoperative elevated PTH with normal Ca levels in the setting of NCHP should be further investigated.

- **Renal Transplant Outcomes in Hispanic Septuagenarians and Octogenarians**

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Purpose: The number of candidates older than 69 years awaiting a kidney transplant continues to grow. Outcomes and survival in a Hispanic population are not well described. The purpose of this study is to evaluate the outcome of kidney transplantation in older Hispanic recipients. Method: 40 recipients 69 to 85 years of age (5 older than 80) (73 ± 4.08) transplanted from 2000 to 2011 were selected as study group. 40 patients 19 to 65 years (46 ± 11.8) from the same period were randomly selected as controls. Demographics, graft and patient survival, renal function, readmissions, length of stay, immunosuppression, polyomavirus (BKV) and cytomegalovirus (CMV) were compared between groups. Results: The majority of transplanted patients in both groups were males (63%, 65%). There were more extended criteria donors (p =0.0001) in the study group.

Cadaveric donations were predominant in both groups (83%, 88%). The mean age of the donor group was 53± 15years for the older recipients and 32 ± 14.9 year in the control group (p =0.001). Hypertension was the most common comorbidity in both groups (97%, 83%). Diabetes was more frequent in the study group as well as its incidence after transplantation. No significant difference in mean time of dialysis between both groups (p=0.08). Perioperative mortality in both groups was 0%. There was no significant difference in one and three year graft and patient survival (98%, 100%) (p=0.09). Overall graft failure in the study group was 5%, one acute rejection and one BKV nephritis. Graft failure in controls was 2%, secondary to BKV nephritis (p=0.20). 5-year mortality in the study group was 20% and 5% in the control group (p=0.08). Infection and cardiovascular disease were the most common causes of death in the study group. At time of death all patients had functioning grafts. There was no significant difference in proteinuria (p =0.33), BKV infection (p=0.71), CMV infection (p=0.16), or re admissions (p=0.37) between groups. Average length of stay was 10 days (SD± 5) for both groups. There was no significant difference in mean creatinine levels between groups at 3, 6 and 12 months after transplant (p=0.45, 0.55, 0.51). Thymoglobulin was used for induction in both groups (88%, 83%) with an average dose of 4.11±0.97mg/kg in the study group, and 5.14 in controls. Low dose prednisone, tacrolimus and mycophenolate were used for maintenance in 95% for both groups. There is a significant difference in the average tacrolimus dose at discharge, 1, 3 and 6 months between groups: controls received higher doses. Conclusion: Renal transplantation can be carried out in older patients with good outcomes, low morbidity, and good patient and graft survival, in spite of important co morbidities such as hypertension and diabetes. Immunosuppression should be lower.

- **Characterization of Triple Negative Breast Cancer Patients among Hispanics in Puerto Rico**

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Purpose: Hormone receptor status had been correlated with prognosis in breast cancer patients. Breast cancer patients with no expression of estrogen receptor (ER), progesterone receptor (PR) and her-2 neu (her-2) have been grouped in the Triple Negative Breast Cancer (TNBC) category. At present, these patients have very limited adjuvant therapy alternatives. TNBC has been correlated with poor prognosis among African-American and Hispanic populations. However, there is very few data regarding the prevalence and characterization of TNBC among Hispanics groups (e.g. Puerto Ricans, Cubans, etc.). The objective of this study is to characterize the TNBC population among the Puerto Rican population and to assess whether expression of ER changes the characteristics of the disease in this group. We hypothesize that expression of ER+ in her-2 negative breast cancer tumors will change the initial presentation of the disease. Method: This cross-sectional study analyzed data from female patients with breast cancer diagnosed between 2000 and 2005, at the I. Gonzalez Martinez Hospital and the Auxilio Mutuo Hospital (n=1,082) in San Juan, Puerto Rico. Information on Her-2 status and other clinical characteristics were retrieved from the hospital's cancer registries and from medical record review. This study was approved by the Institutional Review Boards of the participating hospitals. Logistic regression models were used to evaluate the associations between relevant clinical characteristics and TNBC. We also evaluated whether there were any interaction between age, tumor size and receptor status. Results: The prevalence of TNBC in our study was 16.3% and 58.7% for the Her-2–ER+s phenotype. Patients in the TNBC group have a younger age (<50 yr.) at diagnosis (24.3% vs. 75.7%), larger tumor size (>2cm) (70.3% vs. 45.6%), invasive ductal histology (87.3% vs. 68.7%), and higher tumor grades (III-IV) (49.7% vs. 13.2%) compared to Her-2–ERs+. Using multinomial models, we found that, compared to TNBC, women with Her-2-ER+PR- and those with Her-2-ER+PR+ were 1.99 (CI95%=1.15,3.44) and 1.66 (CI95%= 1.11, 2.46) times more likely to have > 50 years at diagnosis as compared to those with <50 years. This relationship is not seen in women with Her-2-ER-PR+ tumors. Furthermore, compared to TNBC, women with Her-2-ER+PR- are 0.4 (IC95%=0.24-0.67) times more likely to have tumors > 2cm. There was no interaction between receptor status, age and tumor size (p=0.582). Conclusion: TNBC in Hispanics from Puerto Rican origin showed the same prevalence of Hispanic women in California. Furthermore, disease characteristics (early age at diagnosis, tumor size, histology, and tumor grade) were also similar, suggesting that race has a significant effect in the presentation of TNBC in Hispanic women. In addition, the expression of ER, but not PR in Her-2 negative patients dramatically changes the initial presentation of the disease.

- **Spigelian Hernias in the Pediatric Population: A Thorough Analysis of the Existing Literature**

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Purpose: Spigelian hernias (SH) are rare, commonly presenting in the fourth to seventh decades of life. Incidence of SH in the pediatric population is low. From 1935 to 2010, only 55 case reports discussing SH in the pediatric population were published. A demographic profile of pediatric patients diagnosed with SH was performed. Method: Literature was reviewed using MEDLINE as the principal database. Descriptive statistical analysis was applied to 55 patients obtained from 33 articles. The demographic profile included number of articles, year of publication, and continent. The total number of cases, mean age, gender, anatomic location of the hernia, risk factors, diagnostic methods, operative treatment, and outcomes were included in our analysis. Results: Spigelian Hernias are more common in males (78.2%). The group most commonly affected was between the ages of 0 - 23 months representing 61.8 % of the cases. The etiology of SH in the pediatric population is multifactorial, 47.3% of the cases being spontaneous. Congenital anomalies are considered a risk factor, as suggested by the finding of a testicle as the most common structure within the hernia sac. In patients > 7 years old trauma is a common risk factor. Physical findings of an intermittent, non-tender, palpable mass occurred in 21 patients (36.8%) and postural pain on 17 patients (29.8%). Most SH (63.6%) were diagnosed preoperatively by history and physical examination. The majority of the SH were reducible at time of presentation; however, 23.3% were incarcerated when diagnosed. The technical approach most commonly used to repair the hernia was primary closure without mesh (78.9%). Conclusion: Publications regarding SH in the pediatric population are scarce. This review assesses an overall profile of this entity in the pediatric demographic. Although rare in presentation, physicians should be aware of this entity in children. Early management is vital due to the risk of incarceration.

- **Endovascular Repair of Thoracic Aortic Injury: Initial Experience at the Puerto Rico Trauma Center**

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Purpose: The use of endovascular technology for the treatment of traumatic arterial injuries is increasing. Thoracic endovascular aortic repair (TEVAR) for thoracic aortic injury (TAI) has become standard and its use widespread due to lower mortality and paraplegia rates than open repair. The first TEVAR procedure at the Puerto Rico Trauma Center (PRTC) was performed in January 5, 2011. We will describe the intial experience with TEVAR for trauma at the PRTC. Method: We studied all adult patients admitted with TAI in 2011 at the PRTC, a state-designated level 1 trauma center. All patients with TAI were evaluated by the Cardiothoracic Surgery service and either not considered candidates for acute open repair or TEVAR was recommended. All TEVAR procedures were performed by the same vascular surgeon. Blunt TAI was classified according to the University of Washington classification scheme. Analyses of demographics, injury severity scores, type of aortic injury, procedure-related complications, and outcomes were performed. Results: From December 31, 2010 to December 31, 2011 a total of 1591 patients were admitted to the PRTC. Twelve cases (0.75%) of radiographically confirmed TAI were identified. Of these 2 (16.7%) suffered penetrating injury with thoracic aortic pseudoaneuryms and 10 (83.3%) had classic blunt TAI. The average age was 35.9 (range, 17-71 years) with a mean ISS of 27.8. Eight patients with type 3 injuries (pseudoaneurysms) were candidates for TEVAR and underwent the procedure successfully. Their average age was 31.0 (range, 17–71 years). Most patients had multiple associated injuries, with a mean ISS of 25.9, most commonly chest, abdomen, and extremity injuries. The TEVAR patients did not have procedure-related complications such as femoral access site issues (infection, wound dehiscience, pseudoaneurysms), renal failure, stroke, paraplegia, endoleaks or endograft migration. Four (50.0 %) patients required coverage of the left subclavian artery origin and none developed left arm ischemia. All patients were alive at follow up. Mean follow up was 4.4 months (range, 1-13 months). Nonoperative management was utilized in 2 patients with type 1 and 2 injuries (intimal flaps). Two patients died without a procedure: one with a type 4 injury (rupture) died in the emergency department and one with penetrating injury with a thoracic aortic pseudoaneurysm died of respiratory failure. Conclusion: TEVAR can be performed successfully at the PRTC. No access or periprocedural complications were seen. All TEVAR patients survived and none have required aortic or procedure-related reinterventions. However, longer follow up and continued surveillance is required in order to detect any possible long-term complications such as endoleaks or stent-graft migration.

- **Selective Arterial Embolization in Renal Trauma: The Puerto Rico Trauma Center Experience**

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Purpose: The kidneys are the most common genitourinary organs affected from external trauma. Low-grade renal injuries are typically managed conservatively. Although most high-grade renal injuries require surgical interventions, their treatment still lacks standardized management. Furthermore, the treatment algorithms in some of the most prominent Urological publications (such as Campbell-Walsh Urology 2010), fail to mention selective renal artery embolization as a feasible alternative. We analyzed our considerable experience with the management of renal injuries. Method: We retrospectively reviewed the trauma registry of the Puerto Rico Trauma Center for all patients treated for renal trauma (ICD-9 codes 866.0, 866.02, 866.10, and 866.12) between January 1, 2007 and December 31, 2010. We performed an extensive chart review to assess the variables involved and to further characterize these injuries. Results: Of 7,291 total admissions to the Trauma Center, 215 included kidney lacerations. Patients with renal trauma were predominantly male, 92% (198/215), and young with 64% (138/215) of patients between the ages of 18-49. Blunt trauma represented more than half of all injuries with 58% (125/215) of cases while penetrating trauma accounted for 42% (90/215). Forty two percent (90/215) of all kidney lacerations underwent exploratory laparotomy by Trauma Surgery Service, including renal exploration. Of the 215 patients, a total of 12 patients underwent selective renal artery embolization for their renal injuries. None of these patients required exploratory laparotomy or operative intervention for their renal injuries. For the embolization group, gender distribution consisted of 92% (8/12) men and 8% (1/12) women. Age distribution ranged from 13-71 (75% were 18-51). Sixty seven percent of the patients (8/12) sustained blunt trauma while 33% (4/12) suffered a penetrating injury. Grade V renal lacerations were seen in 38% (3/8) of the total patients with blunt trauma. Fifty percent (4/8) of patients with grade III renal lacerations underwent embolization due to active blush of IV contrast on CT scan. Of the patients that sustained penetrating injury, seventy five percent (3/4) sustained stab wounds while the remaining 25% (1/4) suffered gunshot injuries. Two patients (67%, n=3) with stab wound injuries developed pseudoaneurysms, which required selective renal artery embolization. All patients in the embolization group had an unremarkable post-procedural hospital course with no complications from the embolization procedure. Conclusion: Selective renal artery embolization is a feasible and less invasive procedure than conventional open surgical approaches in the management of renal trauma in select patients. At present and based on availability, selective renal artery embolization should be considered as first line treatment for high-grade renal lacerations in patients not undergoing exploratory laparotomy for other associated traumatic injuries (Figure 1).

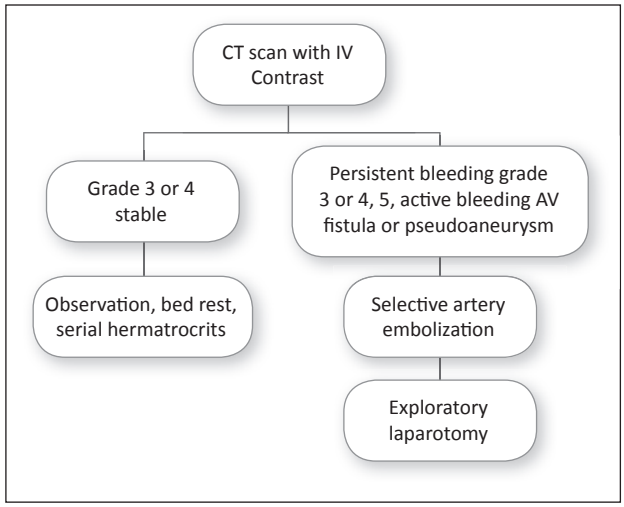

Figure 1.

- **A Novel Approach in the Treatment of a Post-Traumatic Sialocele**

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Parotid sialocoeles are periductal accumulations of saliva within the salivary gland. Sialoceles are classified as cysts if they are caused by partial obstruction of the duct, or as a pseudocyst if they result from duct disruption secondary to trauma or surgery. The anatomic location of the parotid gland makes it particularly prone to injury during surgery or trauma cases. Early treatment techniques such as primary duct repair and reconstruction of duct using a vein graft have been described to divert parotid secretions into the mouth when disruption of the parotid duct is identified early in the management of these patients. However, most parotid sialoceles become evident 8 to 14 days after injury and present as soft, painless swelling involving the extraoral buccal soft tissue. Associated complications include infection and internal/external fistula formation. Clinical diagnosis is confirmed by aspirating clear fluid (high amylase content) and by imaging with ultrasound or CT. Delayed treatment of sialoceles usually includes multiple percutaneous aspiration, incision and drainage, pressure dressing, and antisialogogues. These techniques are uncomfortable to these patients and may have esthetically unpleasant outcomes. In this article we present a case of a 47 year-old female patient with a left parotid sialocele secondary to penetrating trauma to the face that was treated by intraoral drainage using a 16-gauge catheter that was left in place for 4 weeks to create a fistulous tract that replicated the severed parotid duct.

- **Laparoscopic Approach to the Non-Palpable Testis in the Hispanic Population: Timing of Surgery is a Predictor of Success**

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Purpose: To demonstrate that early laparoscopic intervention increases the probability of success in the management of the non–palpable testis in the Hispanic population. Method: From 2007 to 2011, 100 testicular units underwent same surgeon laparoscopic management for non–palpable testis (NPT). All patients were Hispanic in origin. Diagnostic laparoscopy was performed in all NPT and intra–abdominal testes (IAT) were managed by laparoscopic orchiopexy if low, Fowler–Stephens technique if high, and orchiectomy if atrophic. Percutaneous access to the abdomen was performed in almost all cases and laparoscopic management was performed with three 5mm ports. Mean postoperative follow up was 24 months. We compared patient age upon laparoscopic intervention with surgical outcome and reported our results. Results: 100 testicular units (patient mean age: 53.0 months, range 5 to 144 months) underwent diagnostic laparoscopy for non–palpable testis. 55 testicular units (55.0%) were found to be intra-abdominal (48.9% right, 40.0% left, 11.1%bilateral) and were divided into two groups according to surgical intervention. Laparoscopic orchiectomy was performed in 7testicular units due to intra-operative findings of an atrophied IAT (patient mean age: 84 months). Laparoscopic orchiopexy was performed in 48 testicular units (patient mean age: 23 months). Mean postoperative follow up was 24 months. Using Fisher's exact test for two independent proportions, patients 24 months of age or older undergoing diagnostic laparoscopy for NPT had a statistically significant probability of resulting in laparoscopic orchiectomy due to an atrophied IAT as opposed to resulting in successful laparoscopic orchiopexy (n=55 testicular units, $p<0.05$). No laparoscopic related complications were reported. Conclusion: We reported on a large number of Hispanic patients with NPT. More than half of all NPT were found to be intra–abdominal and therefore required subsequent laparoscopic management. We reported statistically significant evidence that patients with intra–abdominal testis should undergo laparoscopic orchiopexy prior to 2 years of age to achieve surgical success. Laparoscopic approach in the management of NPT does not increase operative complications in the cryptorchid patient. In our experience, laparoscopic orchiopexy in patients less than 2 years of age is more technically feasible with excellent results. Patients should undergo early laparoscopic orchiopexy to increase probability of successful management of the intra–abdominal testis.

- **Laparoscopic Single Site Surgery in Pediatric Urology: Initial Experience**

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Purpose: Traditional laparoscopic surgery is performed in many pediatric urology centers with great success. Laparoscopic single site surgery (LESS) has become popular in the adult population with only few reports seen in the pediatric urology literature. We present our initial experience with LESS nephrectomy in pediatric patients with poorly functioning kidneys and LESS varicocelectomy in adolescents with clinically significant varicoceles. Method: A total of 11 pediatric patient (ages 3mo to 17 years, mean of 8 .8 years) underwent LESS procedures using the Gelpoint@ single port through an umbilical incision. The procedures were performed with standard non deflecting laparoscopic instruments for all nephrectomy cases. All perioperative and postoperative clinical parameters were evaluated including age, diagnosis, operative time, hospital stay, early and late complications. Results: 7 patients underwent LESS nephrectomy and 4 patients underwent LESS varicocelectomy. The preoperative diagnosis in the LESS nephrectomy patients was UPJ obstruction in 5 patients and persistent MCDK in 2. All patients with LESS varicocele had clinically significant varicoceles. The mean operative time for nephrectomies was 94 min with a mean hospital stay of 1 day. The mean operative time for the LESS varicocelelctomy was 33 min and all were complicated as ambulatory procedures. No early or late complications were seen in this series. Conclusion: Our study reports our initial experience with LESS procedure in the pediatric urology population. Our results using the Gelpoint@ single port per an umbilical incision showed the technique to be technically feasible with good clinical results. Additional experience and long term follow-up is required to validate this novel technique.

• CORRECTION •

Intrathecal Polymixin B as an Adjunctive Therapy for Ventriculostomy Associated Infections Secondary to Multi-Drug Resistant Gram Negative Bacteria: A Retrospective Study of Cerebrospinal Fluid Sterilization. *Arelis Febles, Sol M. Carrillo, Humberto Guiot*. Infectious Diseases, School of Medicine, University of Puerto Rico Medical Sciences Campus, San Juan, Puerto Rico. P R Health Sci J 2012;31:S67.

The manuscript authors' list was incomplete. Dr. Jorge Bertrán, Director of the Infectious Diseases Program of the University of Puerto Rico School of Medicine, was omitted. Authors should appear in the following order: *Arelis Febles, Sol M. Carrillo, Humberto Guiot, Jorge Bertrán*. The authors' list been corrected in the online version.