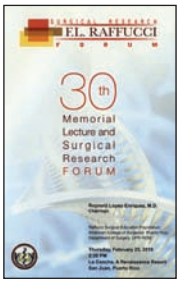
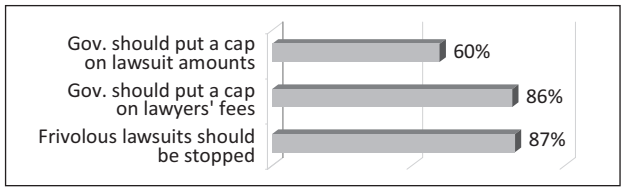



# 30th Memorial Lecture and Surgical Research Forum

- **Public Perception of Medical Liability Issues in Puerto Rico**. Norma I. Cruz, M.D. and Gilberto Castro, B.S. District of San Juan, Puerto Rico College of Physicians and Surgeons and Gaither International

Introduction: The high cost of medical liability increases the expenditure in health care and diminishes health care services. In order to understand the public perception of the medical liability issues in Puerto Rico, a professional survey was performed with the assistance of Gaither International. Method: A total of 500 interviews were conducted in a representative sample of all six US Census demographic regions in Puerto Rico. Respondents were selected randomly by age, gender, socioeconomic group and region of residence. All respondents had visited an Emergency Room in the past two years, either for their own medical needs or that of a close family member. The 24 item questionnaire used in this study requested information on general demographics, use of emergency medical services, insurance coverage, and access to medical care and perception of the medical liability issues. All results have a margin of error of ±4.4 with a 95% confidence level. Results: Respondents' gender and age distribution represented that of the population of Puerto Rico. All interviews were distributed and completed in proportion to the number of households in each of the US Census demographic regions of Puerto Rico. The study indicated that 96% of those interviewed were covered by health care insurance. "Reforma" subscribers represented one third of respondents. When respondents were asked to rate health care services in Puerto Rico, 60% rated services as good or very good, while only 15% rated services as bad or very bad. When rating areas of concern in health care "cost of health insurance and services" was the area of greatest concern. The study indicated that 16% of respondents, one out of every six, claimed to have been sent to "Centro Médico" from another hospital to get health care. The males had twice the rate of transfer to "Centro Médico" probably because of more serious conditions. Finding a specialist was a major concern among respondents. Nearly one-third of respondents said they had experienced difficulty in finding a specialist or failed to obtain one. Orthopedic surgeons were, by a wide margin, at the top of the list (38% of respondents experienced difficulty or could not find an orthopedic surgeon). When asked who benefits most from lawsuits, 63% of the public believe that lawyers benefit most, while only 33% believe that the plaintiff benefits most. In the interviews 87% of the respondents indicated that frivolous lawsuits should be stopped, 86% indicated that they favor government limits on lawyers' fees and 60% favor that government place a cap on lawsuit amounts (table 1). The study found that 84% of the respondents believe that regulating punitive damage awards should result in lower health care costs.

**Table 1**. How people feel about professional liability lawsuits.




Conclusion: Public awareness of how medical liability raises the cost of health care is increasing. These costs are passed on to patients and at the end they are the most affected. This public opinion survey indicates that over 80% of the Puerto Rico population favors limits on lawyers' fees and caps on lawsuit amounts. Establishing some control on medical liability expenses must be a part of Puerto Rico's economic recovery.

- **Is Altered Breast Sensation Responsible for Breastfeeding Changes after Breast Augmentation?** Norma I. Cruz, M.D., and Milagros Fernández, M.D. Plastic Surgery Div., Surgery Department, School of Medicine, University of Puerto Rico, San Juan, PR

Introduction: The success rate of breastfeeding decreases about 25% in young women with hypoplastic breasts following breast augmentation. The hypothesis that altered breast sensation is responsible for the observed breastfeeding changes was tested. Method: Sixty-three patients who underwent bilateral breast augmentation with saline-filled implants and who attempted breastfeeding after their aug-

**Figure 1**. Semmes-Weinstein monofilaments

mentations were tested for sensibility changes of the nipple and areola with Semmes-Weinstein monofilaments. The group was divided between women who were successful at breastfeeding (n=39) and women who were not successful (n=24). For our study a period of two weeks or more was chosen as the defining duration of a successful breastfeeding attempt. Breast sensibility testing was performed by a single investigator in a distraction-free and temperature-controlled examining room. The subjects were tested bilaterally, in a sitting position with vision occluded, at the nipple and the four quadrants of the areola. Sensibility was measured using 20 Semmes-Weinstein monofilaments (figure 1) following the manufacturer's instructions. The value of the lightest filament that evoked perception of pressure was recorded. All sensibility testing was performed at least six months after cessation of breastfeeding. The data was summarized as mean ± standard deviation. Results: The groups were not significantly different in age: 23±5 vs. 22±4 or implant size: 345±50cc vs. 350±65cc. Of the total group of patients (n=63) we noted that 62% (n=39) were successful at breastfeeding and 38% (n=24) were not successful. Two patients in the non-successful breastfeeding group had significant loss of nipple-areola sensation; no sensation elicited even with a 6.65 monofilament. All patients in the successful breastfeeding group had measurable sensation in the nipple-areola area. The Semmes-Weinstein mean values in women who could successfully breastfeed were 2.86±0.48 for the nipple and 3.28±0.59 for the areola. If the two patients who had no measurable sensation were excluded, the Semmes-Weinstein mean values for women who could not successfully breastfeed were 2.92±0.43 for the nipple and 3.47±0.44 for the areola, not significantly different from the successful group ($p>0.05$). No significant difference was found between the patients with periareolar or inframammary incisions ($p>0.05$). Conclusion: The frequency of absent nipple-areola sensation is higher among women who are not successful at breastfeeding after their augmentation (8%). However, when sensation has been preserved both groups had no significant difference in their Semmes-Weinstein values for the nipple-areola area. The ability to breastfeed depends on multiple factors, and nipple-areola sensibility appears to be only one of the many.

- **Gender and Outcomes in Traumatic Arterial Vascular Injury: A Review of the National Trauma Data Bank**. Fernando L Joglar[1], Palma Shaw[1], Naomi Hamburg[2], Robert Eberhardt[2], Denis Rybin[3], Gheorghe Doros[3], Alik Farber[1]. [1]Section of Vascular and Endovascular Surgery, [2]Section of Cardiovascular Medicine, [3]Biostatistics Department, Boston University Medical Center, Boston, MA

Introduction: Recent studies have shown women have worse outcomes following major vascular surgery; however, the effect of gender following acute arterial injury is unknown. We sought to determine if there are gender-based differences in the outcomes of arterial injury cases in a large national database. Methods: In the National Trauma Data Bank from 2002-2006, we identified patients aged 18-65 with traumatic arterial injury based on ICD-9 codes. Exclusion criteria were declaration of death on arrival, head trauma, burns, or multiple arterial injuries. To evaluate potential determinants of outcomes we collected information regarding patient demographics; injury severity, location and mechanism (blunt or penetrating); hospital characteristics including type and geographic region; and payment source. Outcomes after arterial trauma included interventions performed, intensive care unit (ICU) and hospital lengths of stay (LOS), complication rates, and mortality. Results: We identified 12,041 patients with arterial injuries among the 1,309,311 cases in the dataset. The cohort was 17.4% female with a mean systolic blood pressure of 113±50 mmHg. Women were significantly older (37.3 vs. 33.7 years, p=<0.001), more likely to be white (55.2 vs. 44.4%, p=<0.001), and to have co-morbidities (30.6 vs. 27.3%, p=0.002) compared to males. They were also more likely to have insurance (40.8 vs. 32.1%, p=<0.001), to sustain blunt injury (62.8 vs. 43.8%, p=<.001), and to have higher injury severity scores (17.8 vs. 16.3, p=.00002). Women were less likely to undergo surgical intervention (40.7 vs. 45.2%, p=0.0002) or fasciotomies (4.66 vs. 8.25%, p<0.0001) but had a longer overall length of stay (9.37 vs. 8.71 days, p=0.044). Despite these differences, female gender did not appear to adversely affect unadjusted mortality (13.4 vs. 14.5%, p=0.203) or complication rates (11.8 vs. 12.2%, p=0.565). Multivariate analysis revealed that males with blunt injury were more likely to die if treated at a community hospital OR (11.9, 95% CI 3.74, 37.8, p<0.001). For penetrating injury, males with thoracic (OR 3.30, 95% CI 1.06, 10.26, p = 0.04) and abdominal (OR 4.46, 95% CI 1.13, 17.6, p= 0.003) arterial injuries were more likely to die. Conclusion: There are significant gender differences in the presentation and outcomes of patients with arterial trauma. In blunt arterial trauma, the type of treating hospital modified the effect of gender on mortality with males having a higher risk of death if treated at a community hospital. In penetrating injury, anatomic location of injury modified the effect of gender on mortality with males having a higher risk of death from thoracic and abdominal arterial injuries.

- **Minimally Invasive Parathyroidectomy: Efficacy of Gamma Probe Identifying Parathyroid Adenoma in Primary Hyperparathyroidism - Our Experience**. Nilmary Grafals, Mariela Rivera, M.D., Carmen I. Cruz, R.N., Edna M. Mora, M.D., Alberto Cardona, M.D., José Marín, M.D., Cristina Neris, M.D., Frieda Sylva, M.D., Reynold López-Enriquez, M.D. Dept. of Science & Technology, Interamerican University at Arecibo, Surgery Dept., School of Medicine, University of Puerto Rico, Medical Sciences Campus, San Juan, PR.

Introduction: Hyperparathyroidism is a condition where the parathyroid glands secrete excess of Parathyroid Hormone (PTH) which consequently leads to hypercalcemia. Primary Hyperparathyroidism is usually caused by a single adenoma at one of the parathyroid glands. The main treatment for this

condition is surgery, where the parathyroid adenoma is localized and removed. In the era of minimally invasive procedures there has been multiple techniques developed to localize the adenoma before and during surgery. One of these techniques is Parathyroid Radioguided Surgery. This study evaluates the experience at the Oncologic Hospital Dr. Isaac Gonzalez Martinez using the Parathyroid Radioguided technique. Method: Among 44 patients that underwent Parathyroid Radioguided Surgery from 2001 to 2009, a total of 43 patients were included in our study. This technique requires pre surgery injection of radioisotope and intra-operative localization of the adenoma using a Gamma Probe. This surgery took an average of 47 minutes (15min – 90 min). Serum calcium levels of participating patients were recorded before and after surgery (up to 24hrs). Results: Our results showed that 98% (42/43) of the evaluated patients had a significant ($p < 0.001$) decrease in serum calcium levels after the radioguided surgery. Also, 95.35% (41/43) of the specimens removed were reported by pathologist as parathyroid adenoma. Only 5% (2/43) of the patients showed hyperparathyroidism recurrence and were re-explored. Conclusion: The Parathyroid Radioguided Surgery using the Gamma probe identified the parathyroid adenoma in most of the treated patients. With this minimally invasive surgery a high successful rate was observed suggesting that this technique can be an effective treatment for Primary Hyperparathyroidism.

- **Comparative Analysis of Emergent Complications in Patients Treated with NPWT versus Conventional Therapy: A Retrospective Case-Control Study**. Ada L. Rivera Cruz, M.D. Department of Surgery, School of Medicine, University of Puerto Rico, Medical Sciences Campus, San Juan, PR

Introduction: Actually there is an increase concern for those patients that develop chronic lower limb ulcers type III and IV, being implicated in complications that involve a threat to the patients' health. Negative Pressure Wound Therapy (NPWT) has been approved as an adjunctive therapy of non-healing wounds promoting skin regeneration and cicatrisation. Complications among the selected patients were evaluated. Method: Patients from the Wound and Ulcer Care Clinic of San Juan were randomly selected retrospectively with a previous diagnosis of Wagner's type III and/or IV lower limb ulcers. They were classified as those who received conventional therapy or NPWT. Both groups were compared to determine the emergence of complications. Factors taken in consideration to evaluate patients were age, number of ulcer recurrences, debridements, concomitant diagnosis, hospitalizations and complications such as sepsis, cellulitis, osteomyelitis and amputation. Results: A total of 71 medical records were evaluated. The Conventional Therapy (CT) group consisted of a total of 30 medical records and the NPWT group was composed of 29 medical records. The mean age for the total population was 67.6 ± 13.0. Complications were outlined in both groups with a 39% for cellulitis ($p = 0.22$) , 18.6% for amputations ($p = 0.022$), 10.2% osteomyelitis ($p = 0.49$), and 3.4% for sepsis($p = 0.023$). Complication emergence compared by group demonstrated in NPWT a 31% for cellulitis versus 46.7% in CT group, 6.9% for NPWT versus 40.0% in CT group for amputation, 0% in NPWT a versus 20% in CT group for osteomyelitis, and 0% in NPWT versus 6.7% in CT group for sepsis. The relation between the complications and the therapy was evaluated using Chi-Square test, degree of freedom = 1, and X2 = 3.841.Conclusion: NPWT is associated with a reduction in the development of complications demonstrated by a p value of 0.006309.

- **A Polymorphism in the DNA Repair Gene XPC is Associated with Differences in the Survival of Puerto Rican Head and Neck Cancer Patients**. Carlos Torre-León[1], Sara S. Strom[2] and Adriana Báez[1]. [1]Department of Otolaryngology-Head and Neck Surgery, Medical Science Campus University of Puerto Rico, San Juan, PR; [2]Department of Epidemiology MD, Anderson Cancer Center, Houston, TX

Introduction: Head and Neck Squamous Cell Carcinoma (HNSCC) is the sixth most common cancer worldwide. Smoking and alcohol are the major risk factors for HNSCC. Despite the different treatment modalities that are available to treat this disease, survival of HNSCC patients continues to be dismal. Genetic polymorphisms of genes coding for enzymes responsible for cell protection against mutagenic agents may alter their function and increase the risk of HNSCC. However, to our understanding no studies have been conducted to show how these genetic variations may affect survival of Head and Neck cancer patients. Method: DNA from blood lymphocytes of 180 Puerto Rican patients with cancer of the oral cavity, larynx, oropharynx, and hypopharynx were analyzed for genetic polymorphisms of DNA repair genes (XRCC1_CT, XRCC1_GA, XPD_ST, XPD_F1, ADH3, and XPC) and carcinogen-metabolizing genes (GSTT1 and GSTM1). The association between polymorphisms of these genes with time to recurrence and survival were analyzed. Results: There was no association between the variants analyzed and time to recurrence. A DNA repair gene XPC polymorphism was associated with differences in patient survival. Patients with a XPC_LL genotype had a longer survival compared to those with XPC_LS and XPC_SS genotypes (mean survival LL= 283 months, LS= 60 months, SS=72 months; log rank p=0.06), especially in men, p=0.047). Conclusion: Our findings suggest that the genetic variant XPC_LL of the DNA repair gene XPC is associated with increased survival of HNSCC in Puerto Ricans. Larger and more comprehensive genetic susceptibility studies are needed to validate these findings.

- **Awake Tracheotomies in Patients with Head and Neck Cancer in Puerto Rico: A Retrospective Review**. Torres-Pagán L, Baez-Bermejo, A, González-Aquino, C. Dept. of Otolaryngology - Head and Neck Surgery, University of Puerto Rico, Medical Sciences Campus, San Juan, PR

Introduction: Awake tracheotomy is performed for head and neck patients with impending airway obstruction when other maneuvers to secure the airway appear riskier for patients. We ought to describe the clinical characteristics of patients undergoing awake tracheotomies and analyze if the procedure had a detrimental effect in the overall clinical outcome of patients with suspected head and neck malignancies. Method: A retrospective review of operative and anesthesiology records was done of all patients that underwent awake tracheotomies at the Puerto Rico Medical Center from 2005 to 2008. Clinical presentation at time of tracheotomy and follow up information was tabulated. Results: A total of 102 procedures were performed in which 83% percent were males and 19% females. Initial presenting symptoms included palpable neck masses in 58%, hoarseness in 54%, dysphagia in 38%, and stridor in 26%, dyspnea in 19% and hemoptysis in 8% of patients Length of initial presenting symptoms averaged 3.9 months prior to evaluation by the head and neck surgery service. Health insurance was government supported in 65% of patients, privately paid in 21% and self paid in 12% of patients. In 54% of patients the disease was Stage IV, 39% presented patients Stage III tumors, and only 7% had Stage II disease. Conclusion: Survival analysis for each stage group showed decrease disease free interval, increase recurrence rates and decrease overall survival when compared to patients with similar stage disease.

- **Initial Report on the Efficacy of Intravesical BCG in a Cohort of Puerto Rican Patients with Non-Muscle Invasive Bladder Cancer**. Ronald Cadillo, M.D. and Ricardo Sánchez-Ortiz, M.D. University of Puerto Rico, Medical Sciences Campus, San Juan PR

Introduction: Data from SEER have shown that racial disparities exist in bladder cancer incidence and mortality. The clinical response to intravesical BCG has never been evaluated in Puerto Rican patients, a community with a unique heritage of European, African, and Native American influences. Method: In 2005, a prospective database was developed to collect clinical, quality of life, and outcome data for all cancer patients treated at our institution. Herein we describe the characteristics of all consecutive patients referred for the management of non-muscle invasive bladder cancer between 2005 and 2009. Results: The cohort consisted of 58 patients with a mean age of 69 years (range 36 to 95). Sixty-six percent were smokers and 30% were female. Clinical stage was low-grade Ta in 9 patients, high-grade Ta in 8 patients, high-grade T1 in 25 patients, high-grade T1 and CIS in 5 patients, and CIS alone in 11 patients. Re-TUR was performed with high-grade Ta or T1 disease. Two patients upstaged to muscle invasion underwent cystectomy and were excluded. Intravesical BCG was used in 93% (52/56) of patients using the SWOG regimen. The mean time from diagnosis to BCG was 2.8 months. All patients underwent re-biopsy after induction. Dose reduction was required in 5 (9.6%) patients. Of the 52 patients who received BCG, the overall recurrence rate was 28.8% (15/52), of which 40% (6/15) were small or low-grade. Five patients (9.6%) had recurrent CIS or high grade non-T2 disease after 6 months of BCG; 3 went directly to cystectomy and 2 underwent cystectomy after failing salvage intravesical BCG-IFN. Four patients (7.7%) progressed to T2 disease; 2 underwent cystectomy and 2 chemoradiation due to comorbidities. After a median follow-up of 29 months (range 4.5 to 60), the 3-year actuarial progression-free survival was 85%. Of the 52 patients treated with BCG, all patients remained disease-free except 1 patient who died of metastatic disease after cystectomy, for a 5-year actuarial disease-specific survival of 96.7%.

- **BK Virus Infection in Renal Transplantation at The Puerto Rico Transplant Center**. F. Velez-Cubian, J. Márquez-Graciani, M.D., L. Morales Otero, C. Del Coro-Amengual, Z. González-Caraballo, E.A. Santiago Delpín, M.D. Puerto Rico Transplant Center, Auxilio Mutuo Hospital, School of Medicine, University of Puerto Rico, Medical Sciences Campus, San Juan, PR

Introduction: To evaluate possible factors that can lead to a BK virus infection in kidney transplant recipients. Method: In this retrospective study we included patients that were diagnosed with BK virus either by Kidney Biopsy or PCR in plasma and urine. A total of 37 patients were diagnosed with BK virus infection from 1998 to 2009. These patients were compared to a randomly selected control group that has negative PCR results for BK virus infection. They were compared by age, sex, B.M.I type of donor, pre-diagnosis creatinine levels, induction and maintenance immunosuppression dose and levels. In the BK virus infected patients we analyzed treatment, time after transplant for diagnosis, biopsy and PCR results and disease progression. The data was analyzed with parametric and non parametric statistics using the Instat package. Statistical significance was defined as $p<0.05$. Results: There was no significant difference in sex, age, BMI between the two groups. Donor type for the BK virus infected group were 86% cadaveric and 40% living donors compared to 74% and 26%, respectively, in the control group ($p=0.09$). The mean creatinine levels at diagnosis were 2.1 for the BKV positive group and 1.7 for the control group ($p=0.10$). The induction received by the BKV group was 80% Thymoglobulin and 20% Simulect, compared to 65% and 35% respectively for the control group ($p=0.14$). Prograf dose before diagnosis was 8.3 for the BKV group, compared to 7.7 mg for the control group ($p=0.6$). Prograf levels before diagnosis was 11.3 ± 4.4 ng/ml for the BKV group compared to 9.3 ± 3.7for the control group ($p=0.06$). Sirolimus levels before transplant was 5.3 for the BKV group compared to 4.3 for the control group ($p=0.4$). Cyclosporine levels before diagnosis was 234.5 for the BKV group, compared to 128.3 for the control group ($p=0.08$). There was no significant difference between the two groups for dose before diagnosis of sirolimus, cyclosporine, prednisone, mycofenolate and mycophenolic acid. The most common kidney biopsy finding in the BK virus infected group was acute tubulointerstitial nephritis with 32% and acute allograft rejection with 29%. Outcomes

for BKV infected patients are 24% loss of graft, in 8% the infection resolved and 68% continued infected. BKV patients had had more rejections (9) than non BKV (0) (p=0.0044, Chi square). More kidneys were lost in BK virus patients (9) than non BKV (0) (p=0.0044, Chi square). Conclusion: BKV patients appear to be more inmunosuppressed than non-BKV patients. The coincidence of rejection with BKV carries a particularly poor prognosis.

- **Good Results with Kidney Transplantation in Jehovah Witness patients in Puerto Rico**. Y. Alsina-Martín, M.D., J. Márquez-Graciani, C. Del Coro-Amengual, Z. González-Caraballo, L. Morales-Otero, E.A. Santiago-Delpín, M.D. School of Medicine, University of Puerto Rico Medical Sciences Campus, San Juan, PR, Puerto Rico Transplant Center, Auxilio Mutuo Hospital, San Juan, PR

Introduction: To analyze the experience of the Puerto Rico Transplant Center with kidney transplantation in Jehovah Witnesses. Method: In this retrospective study we included all cases of Jehovah Witness patients transplanted from 1987 to 2010, for a total of 20 cases, and compared them to 20 randomly selected cases of non-Jehovah Witness patients (1990-2008). Operative data and post operative courses were reviewed. Information was collected on the patient's body mass index, dialysis modality, post transplant kidney function, estimated blood loss, preoperative and postoperative hemoglobin, preoperative and postoperative creatinine, graft loss and death. Data was analyzed using parametric and non parametric tests with the Instat statistical package. Statistical significance was defined as $p < 0.05$. Result: Mean body mass index for Jehovah Witnesses and control group were 24.8 and 28.1 respectively (p=0.15). Dialysis modality was 77% for hemodialysis and 23% for peritoneal dialysis in Jehovah's Witness compared to 68% and 32% respectively in the control group (p=0.58). Jehovah's Witness grafts were 55% cadaveric and 45% living donor compared to 70% and 30% respectively in the control group (p=0.26). Mean estimated blood loss for Jehovah Witness patients and the control group were 225ml and 358ml respectively (p=0.18). There was no difference in post transplant kidney function between the two groups (see table 2). Overall graft loss in 35% of Jehovah's Witnesses and none on non Jehovah's Witnesses (p=0.009), but 1, 3, 5 years survivals were non significantly different (see table 3). There were 6 deaths in Jehovah's Witnesses with a mean of 51 months post operative for death compared to 0 deaths in post the non Jehovah's Witness patients.

**Hemoglobin Mean**

| | Pre Tx Hgb | 5 days post Tx Hgb | 6 months post Tx Hgb | Current Hgb |
|---|---|---|---|---|
| JW | 11.1 | 9.2 | 11.4 | 12.7 |
| control | 11.7 | 10.1 | 13.3 | 13.0 |
| p value | 0.21 | 0.21 | 0.0016 | 0.68 |

**Creatinine Mean**

| | Pre TX Cr | 5days post Tx Cr | 6mo post Tx Cr | 1yr post Tx Cr |
|---|---|---|---|---|
| JW | 10.4 | 3.3 | 1.6 | 2.0 |
| control | 9.5 | 2.5 | 1.3 | 1.2 |
| p value | 0.56 | 0.39 | 0.06 | 0.16 |

| | 3yrs post Tx Cr | 5yrs post Tx | CrCurrent Cr |
|---|---|---|---|
| JW | 1.6 | 1.6 | 1.1 |
| control | 1.3 | 1.1 | 1.2 |
| p value | 0.43 | 0.20 | 0.67 |

**Graft Survival Percent**

| | JW | Control |
|---|---|---|
| 1 yr | 100% | 100% |
| 3 yr | 95% | 100% |
| 5 yr | 95% | 100% |

**Patient Survival Percent**

| | JW | Control |
|---|---|---|
| 1 yr | 95% | 100% |
| 3 yr | 85% | 100% |
| 5 yr | 80% | 100% |

Conclusion: Jehovah Witness patients may be transplanted safely with good patient and graft survival. Surgery and immunosuppresssion may be tailored to prevent hematologic complications.

- **A Comparison of Hand Assisted Laparoscopic and Open Techniques for Live Donor Nephrectomy in the Puerto Rico Transplant Center**. J. Márquez-Graciani, M.D., C. Del Coro-Amengual, F. Batlle, Z. González-Caraballo, Y. Alsina-Martin, E.A. Santiago-Delpín, M.D. Puerto Rico Transplant Center, Auxilio Mutuo Hospital, San Juan, PR, School of Medicine, University of Puerto Rico, Medical Sciences Campus, San Juan, PR

Introduction: To compare hand-assisted laparoscopic nephrectomy with open nephrectomy techniques in live donor nephrectomy for transplantation. Method: In this retrospective study we included all cases of hand assisted laparoscopic nephrectomy from June 2008 to November 2009 for a total of 21 cases, and compared them to the last 24 cases of open nephrectomy technique (2003-2008). The operative data and post operative courses were reviewed. Information was collected on the donor's body mass index, operative time, estimated blood loss, intraoperative mean arterial pressure, preoperative and postoperative creatinine, post operative complications, length of hospital stay, recipient's renal function, post operative pain (1-10 scale) and time to return to work. The data was analyzed using Student's t test using the Instat package. Statistical significance was defined as $p < 0.05$. Results: Mean donor body mass index for laparoscopic procedure and open procedure were 25.7 and 28.4 respectively (p=0.01). The means for operative time, estimated blood loss and length of hospital stay were 5 hrs, 195 ml, and 4.3 days respectively for laparoscopic procedures, and 4.08hrs, 258 ml and 3.5 days respectively for

open procedures (p= 0.0003, p=0.14, p=0.22). No significant difference was found in intraoperative mean arterial pressure and preoperative or postoperative creatinine between the two procedures. Fewer recipients had delayed graft function in laparoscopic procedure than on open procedure but this was not significant (9.5% vs. 16%, p=0.30),. Post operative complications occurred in 23% of the laparoscopic donors and 9.5% in the open procedures (p=0.09). The mean for post operative pain and time to return to work was 6.7 (1-10 scale), and 26.7 days respectively for the laparoscopic procedure and 7.7 (1-10 scale) and 52 days respectively for the open procedure (p=0.24, p=0.02). Conclusion: In this series, hand assisted laparoscopic donor nephrectomy has significant advantage over open donor nephrectomy in terms of time to return to work but had a longer operative time and a tendency to have more post operative complications. Body mass index could be a confounding factor in this study. There were no differences in other operative and post operative parameters.