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PD26-05 THE DECLINE OF INPATIENT PENILE PROSTHESIS: ANALYSIS OF THE TRENDS AND COMPLICATIONS OF INPATIENT PENILE PROSTHESIS IMPLANTATION USING NATIONAL INPATIENT SAMPLE FROM 2000-2010

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penile prostheses evaluating time to activation, temperature and force generated.

METHODS: Previously fabricated SMA penile prostheses of 22 cm in length with an austenitic activation temperature of 42°C were activated using a mini-ductor II (Induction Innovations, Inc) of 1000 watts and a coil of one inch diameter. Transition forces during inductive activation and resistance to buckling at full activation were measured using an Instron machine.

RESULTS: Using a handheld magnetic inductor, we were able to successfully activate the SMA penile prosthesis with no direct contact. The time necessary to reach a straight/erect conformation using a 1000 watt magnetic inductor was 120±4 seconds. The perpendicular force generated as it transitioned from the flaccid to erect configuration was 0.3±0.015 kgf. The in-axis force generated during transition was 0.95±0.042 kgf. The final temperature reached by the prosthesis at maximum force was 42±3°C. The fully activated device resisted buckling forces of 2.66 kgf±0.045. Due to the inductive nature of the heat transfer, no change in the time to reach the critical temperature was registered when the nitinol exoskeleton was covered with isolating materials such as silicon.

CONCLUSIONS: Magnetic induction is a valid method to activate a SMA penile prosthesis. This method circumvents many of the challenges associated with placement and manipulation of the pump and reservoir. The operating force parameters are consistent with current market devices. Future use of a variable power generator can improve response times.

Source of Funding: American Medical Systems, National Collegiate Inventors and Innovators Alliance Grant

PD26-04 IMPROVED INFECTION OUTCOMES AFTER MULCAHY SALVAGE PROCEDURE AND REPLACEMENT OF INFECTED IPP WITH MALLEABLE PROSTHESIS

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INTRODUCTION AND OBJECTIVES: Since its introduction in 1996, Mulcahy salvage has significantly improved outcomes for removal and replacement of infected IPPs. Long-term follow-up data of Mulcahy salvage shows an infection-free rate of 82%. Since 2002, 58 patients have undergone Mulcahy salvage with IPP removal and replacement with malleable prosthesis at our institutions. Of these patients, 54 (93%) have remained infection free postoperatively. Additionally, 15 of these 54 patients have undergone subsequent malleable replacement with IPP.

METHODS: This is a retrospective multi-institution study of 58 patients who underwent Mulcahy salvage with IPP removal and replacement with malleable prosthesis. Patients' operative notes and charts were extensively reviewed to compile study data.

RESULTS: Between 2002 and 2014, 58 patients underwent infected IPP removal and replacement with malleable prosthesis via Mulcahy salvage. Average age was 57.7, range 26 to 79. Average operative time was 122 minutes, range 47 to 209. Postoperative follow-up ranged from 2 weeks to 84 months. Thirty-nine of 54 patients retained malleable prosthesis, 15 patients subsequently underwent replacement with IPP. This occurred on average 6.9 months after Mulcahy salvage, range from 1 to 29 months. Four patients had persistent infection after Mulcahy salvage with malleable and underwent explant.

CONCLUSIONS: Mulcahy salvage procedure and replacement of IPP with malleable prosthesis has an improved infection-free rate of 93% when compared to the 82% infection-free rate after IPP removal

and replacement. Additionally, 15 of the 54 patients who remained infection free were able to successfully undergo subsequent removal of malleable prosthesis and replacement with IPP an average of 6.9 months later.

Source of Funding: None

PD26-05 THE DECLINE OF INPATIENT PENILE PROSTHESIS: ANALYSIS OF THE TRENDS AND COMPLICATIONS OF INPATIENT PENILE PROSTHESIS IMPLANTATION USING NATIONAL INPATIENT SAMPLE FROM 2000-2010

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INTRODUCTION AND OBJECTIVES: It is well established in market research data that the number of penile prosthesis (PP) placed in the U.S. is increasing with time. Economic pressure is driving increased utilization of outpatient surgery when feasible. Our objective was to analyze national trends in the number and type of PP and to examine patient and hospital characteristics, and immediate perioperative complications of PP performed in the inpatient setting over time

METHODS: The National Inpatient Sample (NIS) from 2000-2010 was queried for patients with PP insertion-associated ICD-9 CM codes. We analyzed trends in the number of PP procedures, type of prosthesis, patient demographics, comorbidities, hospital characteristics, and immediate perioperative complications

RESULTS: There was a progressive and dramatic decline in the number of both inflatable (IPP) and non-inflatable (NIPP) inpatient insertions performed from 2000 to 2010 ($p = 0.0001$). Overall rate of inpatient complications for PP insertion was 13.5%. Patients with 3 or more comorbidities were found to have a higher risk of complications (OR = 1.45, 95% CI = 1.18-1.78) ($p = 0.0001$), and comprised a progressively higher percentage of overall inpatient PPs performed (6% in 2000 to 19% in 2010) ($p < 0.0001$). High volume hospitals performing 10 or more PP insertion cases per year were associated with reduced risk of complications (p -value < 0.0001), while being performed progressively less in the inpatient setting over time from 32% in 2000 to 6% in 2010 ($p < 0.0001$). Table 1 summarizes IPP and NIPP NIS data from 2000 to 2010

CONCLUSIONS: The number of inpatient PP procedures has declined over the last decade reflecting a shift towards increasing outpatient procedures. Our data may help identify factors that can be targets for further transition to outpatient PP surgeries that will help decrease overall healthcare costs. It also suggests a better outcome for patients having the procedure done at high volume centers, and a shift in these high volume centers to performing the procedure as an outpatient

Table 1 Correlation between patient and hospital characteristics and type of penile prosthesis performed.

Characteristic	Category	IPP n (95% CI)	IPP (%)	NIPP n (95% CI)	NIPP (%)	p-value
Age	18-45	2179 (1873-2485)	86.6	338 (246-430)	13.4	0.0123
	45-65	19849 (18146-21552)	89.75	2268 (1868-2668)	10.25	
	65+	21659 (19654-23664)	90.65	2235 (1896-2574)	9.35	
Hospital size	Small	3938 (2956-4920)	93	296 (198-394)	7	0.105
	Medium	11424 (9446-13402)	90.54	1194 (931-1457)	9.46	
	Large	28202 (25313-31091)	89.4	3336 (2681-3991)	10.6	
Race	White	23237 (20863-25611)	91.7	2099 (1783-2415)	8.3	<.0001
	Black	5871 (5073-6669)	85.4	1004 (733-1275)	14.6	
	Other	5127 (4243-6011)	87.7	720 (532-908)	12.3	
Co-morbidity index	0	14833 (13267-16399)	89.7	1696 (1404-1988)	10.3	0.242
	1	14816 (13509-16123)	90.9	1489 (1213-1765)	9.1	
	2	9674 (8835-10513)	89.8	1099 (901-1297)	10.2	
	3 or more	4365 (3885-4845)	88.7	557 (416-698)	11.3	
Payer	Medicare	24488 (22332-26644)	90.3	2638 (2256-3020)	9.7	<.0001
	Medicaid	845 (618-1072)	79.1	224 (130-318)	20.9	
	Commercial	16872 (15226-18518)	90.4	1801 (1458-2144)	9.6	
	Other	1483 (1183-1783)	89.3	178 (113-243)	10.7	
Hospital type	Academic	21668 (18818-24518)	92.9	3151 (2496-3806)	7.1	<.0001
	Community	21897 (19637-24157)	87.3	1675 (1393-1957)	12.7	
Volume (PP cases/year)	1	6125 (5615-6635)	87.8	852 (697-1007)	12.2	0.262
	2-9	25842 (23529-28155)	90.7	2636 (2181-3091)	9.3	
	10+	11720 (8617-14823)	89.7	1354 (786-1922)	10.3	
Region	Northeast	8500 (6924-10076)	84.1	1603 (1070-2136)	15.9	<.0001
	Midwest	7704 (6479-8929)	91.8	688 (484-892)	8.2	
	South	18559 (15840-21278)	93.7	1244 (966-1522)	6.3	
	West	8924 (7560-10288)	87.2	1307 (986-1628)	12.8	

Source of Funding: NIH, NIDDK

PD26-06
IMPLANT LENGTH – BASELINE CHARACTERISTIC CORRELATIONS

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INTRODUCTION AND OBJECTIVES: The “Prospective Registry of Outcomes with Penile Prosthesis for Erectile Restoration” (PROPPER) is a large, multi-institutional, prospective clinical study. There is a paucity of data regarding the factors that contribute to penile prosthesis size. Co-morbid conditions and demographic data with implanted penile prosthesis size were correlated.

METHODS: The PROPPER registry prospectively evaluates outcomes in men undergoing penile prosthesis implantation. Men completed baseline questionnaires prior to prosthesis implantation and at 12 months. Demographic, etiology of ED, duration of ED, co-morbid conditions, and pre-operative penile length (flaccid and stretched), operative technique, implant type and length, duration of surgery were compiled. Pearson correlation coefficient was generated

for length of implanted penile prosthesis vs. comorbid conditions / demographic data.

RESULTS: 849 men underwent implantation of IPP at 11 study sites. One of patient with missing implant length was excluded. All AMS IPP types were included in the analysis. Comorbidities were CV disease (32.1%), DM (13.4%), and PD (11.9%). Primary etiology of ED: RP (29.0%), CV Disease (20.3%), DM (21.4%), Other (16.1%), PD (9.8%), and Priapism (1.2%). Mean duration of ED is 6.8 ± 4.6 years. Pearson Correlation was weakly negatively correlated with White/Caucasian (r = -0.13; p=0.0002), RP (r = -0.13; p=0.0001), concomitant presence of PD (r = -0.08; p=0.0146), venous leak (r = -0.08; p=0.0149), and SUI (r = -0.15; p<0.0001). Implant length was weakly positively correlated with Black/AA men (r = 0.27; p<0.0005), CV disease (r = 0.13; p<0.0005) and stretched penile length (r = 0.26; p<0.0001) There is a moderate positive correlation with flaccid penile length (r = 0.33; p<0.0001).

CONCLUSIONS: Implanted penile cylindrical length is significantly negatively correlated with White/Caucasian ethnicity. History of RP and presence of SUI are also strongly negatively correlated with implant length. Positive correlates include Black/AA ethnicity, CV disease, preoperative stretched penile length, and flaccid penile length. There does not appear to be a significant correlation with diabetes or duration of ED.

Source of Funding: American Medical Systems, Inc.

PD26-07
RACIAL AND AGE DIFFERENCES IN IMPLANTATION OF INFLATABLE PENILE PROSTHESIS FOR ERECTILE DYSFUNCTION (ED) IN THE PROSTATE CANCER SURVIVOR

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INTRODUCTION AND OBJECTIVES: Previous studies in Medicare beneficiaries suggest higher rates of inflatable penile prosthesis (IPP) placement in African-American (AA) men. This study was limited to men older than 65 years. We evaluated prostate cancer survivors undergoing IPP surgery at our institution to establish if these observations hold true for a younger cohort.

METHODS: We conducted an IRB-approved retrospective review of patients undergoing treatment for prostate cancer at a single institution. Our patient data portal (DEDUCE) was used to query for prostate cancer survivors who underwent a radical prostatectomy (RP) or primary radiation therapy (external beam or brachytherapy) from 2004 to 2012. Demographic data and surgical therapy for ED were reviewed. Patients of all ages and payer statuses were included. Student’s T-test was performed.

RESULTS: 4693 men underwent RP and 1540 had primary radiation. Mean age at treatment was 61.7 years (±7.9). 74.3% of men undergoing RP were Caucasian (mean age 62.7 yrs), 21.8% AA (mean age 60 yrs), 0.9% American Indian, 0.6% Asian and 2.3% classified themselves as other or declined. Among men treated with radiation, 62.6% were Caucasian (mean age 67.8 yrs), 33.8% AA (mean age 65.3 yrs), 0.5% American Indian, 0.6% Asian and 2.5% were other or declined.

The IPP utilization for the entire cohort was 1.5%. RP cohort had a higher penile implantation rate compared to men who received radiation (1.8% versus 0.6%, p<0.01). In men treated with primary radiation, higher implantation rates were seen in AA men as compared to Caucasian men (1.1 versus 0.2%, p<0.01). In patients who had a RP, there was a trend toward higher implantation rates in AA men as compared to Caucasians (2.3% versus 1.7%, p= 0.2). Men who received an IPP were younger at the time of primary therapy as compared to men who did not. For the RP cohort, average age was 61.8 ±7.9 versus 60.2 ±7.3 years (p<0.01) and for primary radiation therapy average age was 61.2 ±5.7 versus 67.0 ±9.8 years (p<0.01). There was no difference in IPP utilization based on ethnicity, marital status, or religion.

CONCLUSIONS: We analyzed IPP utilization rates in a younger patient population than those previously reported and find that the overall use of IPP in prostate cancer survivors remains low. IPP utilizers are younger than others. Men after an RP are more likely