

RESULTS: Mean pre-op prostate volume was 101 ml (range 60-247 ml). The average age and ASA class were 70.1 years and 2.2. Mean operative time per procedure was 121 minutes. Anesthesia included IV sedation and prostate block (N=28), spinal anesthesia (N=28), and general anesthesia (N=8). No transfusions were required. Average length of stay was 0.9 days with 12 (19%) patients discharged the same day and 50 (78%) more on post-op day #1. Serum sodium and hematocrit did not change significantly (140.6mmol/L and 40.7% to 140.1 mmol/L and 41.1%). Follow-up was available from 52, 30, 24, and 12 men at 1, 3, 6, and 12 months. IPSS decreased from 18.4 pre-op to 10.2, 8.0, 7.2, and 6.6 at 1, 3, 6, and 12-months. Qmax increased from 7.9 ml/sec pre-op to 15.6, 16.0, 20.0, and 18.1 ml/sec at 1, 3, 6, and 12-months. PVR decreased from 152 ml to 77 and 83 ml at 1 and 3 months. Two patients needed staged procedures, 2 had self-limited post-op urinary retention, 4 developed retrograde ejaculation, and 1 patient developed clot retention post-op that resolved after irrigation. One patient needed reoperation for return of symptoms at 9 months.

CONCLUSIONS: These results demonstrate that PVP is a viable and durable therapy for men with symptomatic BPH and large volume prostates.

Source of Funding: None

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HOW WE LEARN RESECTION SKILLS: ANALYSIS OF DATA FROM THE UNIVERSITY OF WASHINGTON TURP SIMULATOR *Robert M Sweet*, Timothy Kowalewski, Peter Oppenheimer, Jeffrey Berkley, Suzanne Weghorst, Michael Mayo, Seattle, WA*

INTRODUCTION AND OBJECTIVE: In 2002, we established face, content and construct validity for the University of Washington Transurethral Resection of the Prostate (TURP) simulator. In order to establish discriminate validity and gain insight into how we develop and acquire resection skills, we analyzed factors correlated with favorable resection metrics in experts, trainees and novices.

METHODS: 110 subjects completed the study protocol consisting of 72 experts (board certified urologists), 30 trainees (residents) and 19 novices. After a pre-task questionnaire, all subjects viewed an introductory training video and performed a precompiled 5-minute resection task. The simulator logged all features of instrument interaction with the virtual environment. Primary metrics consisted of operative errors, grams resected, blood loss, volume of irrigant, foot pedal use, and differential time spent with orientation, cutting and coagulation. Two-tailed Pearson's correlation analysis was performed to detect tendencies within each of the three groups.

RESULTS: Larger resections correlated with more time cutting and less time coagulating and orienting in the expert group only ($p < .001$). Older experts tended to use the coagulation pedal more sparingly than younger experts ($p = .031$) without differences in blood loss. Experts reporting more TURPs in the last two years tended to hit the cutting pedal more frequently ($p = .029$) but performed no different than other experts on the primary metrics. Trainees reporting more TURPs in the last two years tended to resect more tissue ($p = .043$). Trainees who resected more tissue tended to use more fluid ($p = .024$), and spent less time with coagulation ($p = .027$) than other trainees. These correlations were not observed in novices or experts. Increased coagulation time correlated with more grams resected in novices only ($p = .001$). In trainees and experts exclusively, primary efficiency metrics for resection, fluid use and blood loss correlated with more cuts at tissue and less coagulation and orientation time ($p < .05$). Experts spending more time cutting tended to use less fluid ($p = .045$) while novices used more fluid ($p = .004$).

CONCLUSIONS: These correlations reinforce construct validity, establish discriminate validity and provide insight as to what factors may differentiate "success" at different levels of training. Such data could be used to isolate and train skills subsets in the curriculum and may also eventually determine what truly is the most efficient and safe approach to perform TURP.

Source of Funding: AFUD, ACMI corporation

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BOTULINUM TOXIN A IMPROVES REFRACTORY BENIGN PROSTATIC HYPERPLASIA SYMPTOMS *Yao-Chi Chuang*, Po-Hui Chiang, Chao-Cheng Huang, Kaohsiung Hsien, Taiwan Republic of China; Naoki Yoshimura, Michael B Chancellor, Pittsburgh, PA*

INTRODUCTION AND OBJECTIVE: To investigate the effects of botulinum toxin A in treating patients with refractory benign prostatic hyperplasia.

METHODS: Eleven men (mean age 65.5, range 50 to 82 years) with symptomatic benign prostatic hyperplasia (prostate volume less than 30 gm; peak flow rate less than 12 ml/sec) refractory to medical treatment (at least one month of a blocker) were included. Botulinum toxin A 100 U (Allergan) dissolved in 4 ml saline were injected into prostate using 21-G 20 cm long needle under TRUS surveillance at bilateral sites of the prostate. All of the patients have no prior prostate surgery. The clinical effects were evaluated by comparing the symptom scores, quality of life index, prostate volume, postvoid residual urine volume, and peak urinary flow rates.

RESULTS: The mean prostate volume was 22.1 gm. No stress incontinence, retrograde ejaculation, erectile dysfunction, or systemic side effects were observed in any of the patients. Most patients reported improvement starting approximately one week and achieved maximal effect after one month. The mean symptom score and quality of life index were significantly reduced by 62.3% (from 20.1 ± 3.0 to 7.6 ± 3.0) and 56.5% (from 4.6 ± 0.6 to 2.0 ± 0.6). The irritative component was improved more. The maximal flow rate was significantly increased by 45.1% (8.2 ± 0.9 ml/sec to 11.9 ± 1.9 ml/sec). There was no significant change in residual urine (21.4% decrease, from 80.8 ± 21.7 ml to 63.5 ± 25.0 ml) and prostate size (14.9% decrease, from 22.1 ± 3.0 gm to 18.8 ± 3.4 gm).

CONCLUSIONS: Our preliminary results suggest that botulinum toxin A injected into the prostate seems to be a promising alternative treatment for refractory benign prostatic hyperplasia. Subjectively, patients reported greater improvement in irritative symptoms.

Source of Funding: None

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HISTOLOGICAL CHANGES OF THE PROSTATE GLAND AFTER TRANSURETHRAL ETHANOL ABLATION *Jorge Gutierrez Aceves*, Jesus Rodolfo Favela Camacho, Daniel Franco Carrillo, Esequiel Velez Gomez, Guadalajara, Mexico*

INTRODUCTION AND OBJECTIVE: Transurethral ethanol ablation of the prostate (TEAP) has been recently used in the treatment of BPH. Nevertheless, the exact mechanism of action has not been completely clarified. The purpose of this study was to analyze the histological changes in prostatic tissue after TEAP in BPH patients and determine the possible effects of ethanol on the intraprostatic nerve endings.

METHODS: Transurethral ethanol injection was performed in 5 patients with large prostatic adenomas (>100 cc). Absolute ethanol was injected direct into the prostate. Two weeks following the TEAP procedure, a single pathologist blindly analyzed the five prostatic tissue samples for histological evaluation from open retropubic adenoprostatectomies. Histological sections were stained with hematoxylin-eosine (HE), histochemical stains and immunohistochemical techniques including anti body anti S-100 protein used as specific marker of intraprostatic nerve endings.

RESULTS: Macroscopically, absolute ethanol creates a clearly demarcated line of tissue necrosis with a wide diffusion into the prostatic tissue. The ethanol-induced necrosis did not extend to the capsule or sphincter and the urethra was protected. Microscopically, in all specimens the same pattern was observed: hemorrhagic necrosis and absence of viable glands, destruction of the glandular epithelium basement membrane along with destruction of nerve cells in the treated tissue. All specimens show regeneration tissue with squamous metaplasia and incipient formation of fibrous tissue in the periphery of lesions.

CONCLUSIONS: This study demonstrate ethanol can be an effective in situ chemo ablativ agent for prostate tissue ablation. Absolute ethanol produces tissue necrosis when injected into the prostate. Immunohistochemical techniques show complete destruction of nerve cells and nerve endings. TEAP may improve urinary symptoms related to BPH through tissue ablation and intraprostatic nerve tissue destruction.

Source of Funding: American Medical system

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RESECTION OR ELECTROVAPORIZATION OF THE PROSTATE - COMPARISON OF THE TWO SURGICAL TECHNIQUES *Cesar N Zillo, Wagner E Matheus*, Nivaldo Lavoura, Nelson R Netto, Jr, São Paulo, Brazil*

INTRODUCTION AND OBJECTIVE: To compare both therapeutic modalities in terms of surgical time, results, complications and learning curve

METHODS: A total of 100 patients with benign prostatic hyperplasia and surgical indication were randomized in two groups of 50 patients. One of the groups was treated with electro vaporization and the other with transurethral resection of the prostate. The surgeries were accomplished by the residents of our service, always with an assistant's attendance. The resections were accomplished with common loop and the electrovaporizations with a RessecTrode®. We analyzed the surgical time, catheter time, IPSS and uroflowmetry before and 3 months after the surgery. The analysis of the learning curve was made through a questionnaire that the residents answered after their apprenticeship informing after how many procedures they felt confident to accomplish each surgery.

RESULTS: There was no important complication in none of the groups. The values of IPSS, uroflowmetry and surgical time were better in the resection group and the catheter stay and internment were better in the electro vaporization. The electrovaporization was also better in the learning aspect, as it can be seen in the table below.

CONCLUSIONS: The electrovaporization and the resection of the prostate are safe methods of surgical treatment of HPB. Our opinion is that the residents should begin with the electrovaporization, once this surgery allows a better visualization