TREATMENT OF PEYRONIE'S DISEASE WITH AUTOLOGOUS ADIPOSE DERIVED STROMAL VASCULAR FRACTION RICH IN ADULT STEM CELLS COMBINED WITH PENILE SHOCK WAVE THERAPY

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(Presentation to be made by Dr. Elliot B. Lander)

Objective: The purpose of this pilot study was to evaluate safety and subjective outcomes in a small series of Peyronies patients using a combination of autologous stromal vascular fraction derived from lipo-aspirate and a short series of penile shock wave therapy. All suffered from some degree of associated ED.

Materials and Methods: Eleven patients aged 52-70 with documented stable Peyronies disease were included in this study. Subjective outcomes tests used to evaluate therapeutic success included the Peyronies Disease Questionnaire (questions 1-6) and the Erectile Hardness Grading score at baseline and at 6 months. Patients underwent liposuction under local anesthetic and then intra-operative procurement of SVF stromal vascular fraction (rich in stem cells and growth factors). SVF was immediately deployed by injection into the Peyronies plaque in combination with a series of shock wave treatments (approx. 3-6 treatments separated by two day intervals. A Storz hand held D- Actor device was used with a radial 15mm head.

Results: Clinically significant improvement was seen in all 11 patients at 6 months. There were no adverse events. All patients noted subjective straightening of the penis and some with complete response. All 11 patients reported subjective reduction in plaque size. All 11 patients described subjective improvement in curvature and erectile function. Mean EHGS scores increased from 2.7 to 3.5 and PDQ scores decreased from a mean of 15 down to 8.7.

Conclusions: Penile shock wave therapy may result in a controlled micro-trauma associated with the local release of cytokines that are known to activate stem cells. SVF containing mesenchymal stem cells can be procured in a closed surgical system from lipo-aspirate in a same day setting and deployed directly into Peyronies plaques resulting in plaque mitigation. Although the exact clinical mechanism remains to be delineated, it appears that shock wave therapy softened the plaques and promoted local tissue effects that may have contributed to cell mediated repair. SVF is known to have anti-inflammatory, scar mitigation, immune-modulatory, and regenerative effects and has been used for a variety of conditions on an investigational basis. There were no adverse effects in this study and plaque size clinically diminished with improvement in penile bending and erections in most patients. Although this study was small, the clinical effects support further clinical investigation.

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CONVERSION OF LOW FLOW TO HIGH FLOW PRIAPISM USING T SHUNT WITH TUNNELING

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(Presentation to be made by Neil Mistry)

Objectives: The three types of priapism are stuttering, arterial (high-flow, non-ischemic) and veno-occlusive (ischemic, low-flow). These are usually distinct entities and do not coexist in the same patient. Urgent identification of ischemic priapism is necessary to avoid loss of penile tissue and erectile function. However, some interventions can result in conversion from low-flow to high-flow states. We present two such cases where patients with recurrent ischemic priapism were identified as having high-flow, arterial priapism after intervention. The purpose of this case report is to share a unique presentation of arterial, high-flow priapism with an iatrogenic cause. Additionally, we discuss the mechanisms by which treatment for low-flow priapism can induce a high-flow state and the need for diagnostic testing in cases of priapism.

Materials and Results: Case 1: The first case is a 24-year-old Caucasian male weighing 76kg that sought medical attention for priapism 24 hours after his erection began. He has a past medical history of stuttering priapism and idiopathic thrombocytopenic purpura diagnosed three years prior but in remission according to his hematologist. His only previous surgery was a splenectomy. He was taking no medications at the time. In the emergency room he received an intra-corporal aspiration and injection of phenylephrine (500µg/mL - 4mL per side of penis) with no relief. A corporal blood gas was collected which showed: pCO2 – 89 mmHg (normal = 32-43), pO2 – 32 mmHg (normal = 83-108), pH 7.20 (normal = 7.37-7.44). 12 hours from the time of presentation (36 hours after his erection started), he was taken to the operating room where bilateral Al-Ghorab shunts were performed. In the PACU, he had recurrence of his erection. The patient was then transferred to our facility for further management. He received the following medications prior to transfer: and . His physical exam on arrival revealed a persistent erection and only some minor pain and discomfort.. A complete blood count was normal with a hematocrit of 41.3% (normal = 41-53%). His routine chemistry showed a plasma sodium concentration of 140 mmol/L (normal = 134-143), potassium of 4.1 mmol/L (3.4-5.0) and chloride of 109 mmol/L (normal 97-108). Based on both the blood gas values and the clinical presentation of long-standing erection, the patient was counseled on the benefits of surgical intervention and he opted for surgery. In the operating room dark venous blood was drained from his corpora. A corpora cavernosal shunt (T shunt) with tunneling was performed using 10Fr Hegar dilators. Deterumescence was obtained intraoperatively. The procedure was completed and the patient was transferred to the PACU without complication, yet immediately post-operatively he again became erect. A corporal blood gas was taken, with the values consistent with a high-flow state: pCO2 – 47 mmHg (normal = 32-43), pO2 – 106 mmHg (normal = 83-108), pH 7.27 (normal = 7.37-7.44), and 98% O2 saturation. He was observed and discharged, but he continued to have an erection for approximately three weeks without pain. Case 2: The second patient is a 33-year-old African American male with Sickle Cell Disease who presented to the emergency room in methamphetamine-induced psychotic state. While on a psychiatric hold in the ER, he developed an erection with some associated discomfort. Besides sickle cell disease, the patient’s medical history includes hydronephrosis, anxiety, depression, opioid dependence, marijuana, cocaine, amphetamine, benzodiazepine, and opioid abuse, splenic auto-infarction, and lung cancer. He has a 16-pack year smoking history and used illicit drugs twice weekly. His surgical history includes 2 Winter shunts in 2010 and 1 T-Shunt in 2012. His only medications at the time were folic acid and hydroxyurea (500mg 3x daily PO). He was given Ziprasidone for his psychosis in the ER. The patient has suffered from episodes of stuttering and ischemic priapism one to two times monthly for the past two years, but noted a higher frequency of episodes over the past three months. These have usually resolved with intracorporeal injections of phenylephrine. His most recent episode of priapism went untreated for several hours as he declined treatment, electing to observe in the hopes that it would reverse itself. The patient described this erection as uncomfortable and somewhat painful. He finally agreed to receive treatment almost 24 hours later where he an intracorporeal injections of phenylephrine (0.5mg/mL) was performed bilaterally every few minutes. After the injection there was no improvement of his condition. A corporal blood gas was collected and the values were as follows: pCO2 – 84 mmHg (normal = 32-43), pO2 – 39 mmHg (normal = 83-108), pH 7.21 (normal = 7.37-7.44). He was taken to the operating room where a T-Shunt was performed using a 15-blade to make an incision through the glans. There was minimal drainage on incision. A #7 Hegar dilator was used to dilate the corpora, irrigating a small volume of arterial blood with some mild improvement in his erection. Within 10 minutes of finishing the procedure the erection returned. A corporal blood gas was collected at that time and the values were as follows: pCO2 – 45 mmHg (normal = 32-43), pO2 – 105 mmHg (normal = 83-108), pH 7.35 (normal = 7.37-7.44). The patient was taken back to the OR where a bilateral At this point he was transferred to our facility and kept in observation. On physical examination, the patient’s glans and corporal bodies were firm. He was observed for a week in-house while being treated for his other medical issues. His erection improved and softened slightly over time, but was still uncomfortable at the time of discharge. Conclusion: High-flow priapism still remains a poorly understood complication for some patients with idiopathic or recurrent priapism. Both cases highlight the necessity for diagnostic testing before, during, and after the surgical management of a priapism episode alongside the patient’s history and presentation to avoid unnecessary complications and improve outcomes for patients with priapism. Further study into penile trauma associated with various interventions may elucidate the mechanisms by which the corpora are affected and how potential fistulas form.

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A NOVEL SURGICAL APPROACH TO THE PLANE BETWEEN DENONVILLIER’S FASCIA AND THE PROSTATE FOR VAGINOPLASTY IN MALE-TO-FEMALE GENDER CONFIRMING SURGERY (GCS): A HUMAN CADAVERIC STUDY AND CLINICAL OUTCOMES

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Background: During male to female gender confirming surgery with vaginoplasty, a space is created for the neovagina within the potential space between the prostate anteriorly, and Denonvillier’s Fascia and Rectum posteriorly. Entry to this plane is challenging, and to date, the only surgical approaches to this space describe blunt and sharp dissection along the ventral surface of the urethra. The likely trauma to perirectal vasculature muscle-laden connective associated with this approach may account for the observed recto-vaginal fistula rate associated with vaginoplasty. We describe an alternative, never before published approach using a male urethral sound upon the apex of the prostate to enter this plane with sharp dissection in a reliable and efficient fashion.

Materials and Methods: We describe our surgical technique, wherein we use a male urethral sound during the dissection to help expose Denonvillier’s Fascia over the apex of the prostate. We dissected a block of tissue containing prostate, Denonvillier’s Fascia and rectum from human cadavers, to describe (using IHC) the location and relative abundance of blood vessels (Factor VIII Ab.), nerves (NF & S-100 Ab.), and connective tissue (H&E and Masson’s Trichrome), to support the sharp surgical approach we describe over the traditional approach to this plane. We describe clinical outcomes and the recto-neovaginal fistula rate utilizing this approach in our institutions.

Results: Immunohistochemistry results showed that the sharp dissection we describe is associated with incision through significantly fewer blood vessels and sensory-motor nerves as compared to the traditional surgical approach. Use of the sharp dissection we describe resulted in, at our institutions, a significant decrease in recto-neovaginal fistula in the peri-operative period.

Discussion: The surgical technique we describe for dissection of the plane between prostate and Denonvillier’s Fascia during vaginoplasty is well supported by the anatomic studies we performed, and, is associated with lower morbidity. This surgical approach and technique is also likely useful for gaining access to this same plane for repair of recto-vesical and recto-urethral fistulas.

Disclosures: none
SUB-URETHRAL SLING SURGERY FOR STRESS INCONTINENCE MAY RESULT IN ORGASMIC DYSFUNCTION THROUGH DIRECT INJURY TO ANTERIOR VAGINAL WALL, PERI-URETHRAL PROSTATIC TISSUE

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(Presentation to be made by Dr. Irwin Goldstein)

Introduction: Over 200,000 surgical procedures are completed yearly for stress incontinence, the majority of which are sub-urethral slings, either trans-vaginal tape (TVT) or trans-obturator tape (TOT) procedures. While in men, the male peri-urethral tissues are anatomically separate from male prostate, in women, peri-urethral tissues are contiguous with female prostate tissue. Thus, in women with stress incontinence, surgical placement of a sub-urethral sling will directly injure anterior vaginal wall, peri-urethral prostatic tissue. In some women, the integrity of anterior wall, peri-urethral prostatic tissue may play a critical role during satisfying vaginal orgasm. Motivated by patients who were distressed after losing satisfying orgasmic capabilities following TVT or TOOT procedures, we studied the prevalence of orgasmic dysfunction in women who underwent sub-urethral surgery for stress incontinence.

Methods: A total of 23 manuscripts, consisting of 5 Randomized Controlled Trials, 4 Retrospective Cohorts and 14 Prospective Cohorts, examined a total of 2,350 women from years 2002-2015. The follow-up ranged from 3 months to 24 months after surgery. Most studies involved the TOT or TVT mid-urethral slings, few included the single incision type mid-urethral slings. In these manuscripts, sexual questionnaires included Female Sexual Function Inventory (FSFI) and the Pelvic Organ Prolapse/Urinary Incontinence Sexual Questionnaire (PISQ) that include questions on orgasm outcome.

Results: Overall, approximately 14-20% of women experienced worsening sexual function after mid-urethral sling placement. A total of 30% of women reported worsening of orgasm frequency and intensity, with statistically significant lowering of pre-op versus post-operative orgasm scores. Meta-analysis for sexual satisfaction using a random effects model revealed a total effect of 0.67, implying that the two-thirds of women showed a statistically significant improvement in sexual satisfaction following the mid-urethral sling surgery. However, the same meta-analysis for orgasm satisfaction revealed an orgasm effect size of only 0.33, implying that 33% of the patients showed a statistically significant improvement in orgasm. Thus, concerning orgasm satisfaction, the meta-analysis revealed approximately 27% of women experienced worsening of orgasm satisfaction while approximately 40% realized no change. We subsequently interviewed healthy women to develop a draft questionnaire to be given pre-operatively to assess orgasmic type, specifically vaginal orgasm. The questionnaire is being tested in women with stress incontinence considering sub-urethral sling surgery, with intent to retest them at specific post-operative periods.

Conclusions: There was a large discrepancy noted in orgasm satisfaction versus overall sexual satisfaction following sub-urethral sling placement. It is hypothesized that women who were pre-operatively experiencing vaginal orgasm are at risk of developing orgasmic dysfunction secondary to direct sub-urethral sling injury to anterior wall, peri-urethral prostatic tissue. Pre-operative identification of women with vaginal orgasm and development of surgical strategies that minimize direct injury to anterior vaginal wall, peri-urethral prostatic tissue may be keys to avoiding post-operative orgasmic dysfunction.
SUCCESSFUL MANAGEMENT OF CLITORODYNIA CLOSED COMPARTMENT SYNDROME
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(Presentation to be made by Dr. Irwin Goldstein)

Objectives: A total of 24.7-36.8% of women complain of pain during sexual activity. Clitorodynia, a localized form of vulvodynia, is an uncommon, distressing, often disabling sexual pain syndrome with burning, stinging, and/or sharp pain confined to the glans clitoris, common clitoral shaft and/or prepuce area. The clitoral pain may be constant, intermittent or occurring only when provoked. The clitoral pain commonly increases with sexual activity, and is generally chronic. Women with clitorodynia are usually managed with the same treatments used for generalized vulvodynia, however such treatments are usually ineffective.

Methods: We retrospectively reviewed the prevalence and clinical management experience of distressing clitorodynia in our multidisciplinary sexual medicine facility in the last 5 years.

Results: We identified 15 (3.5%) women with clitorodynia from 430 total women with vulvodynia. Of these 15 patients the largest cohort was 8 (53%) clitorodynia patients whose corona of the glans could not be identified during magnified examination by vulvoscopy, despite vigorous retraction maneuvers. In these 8 clitorodynia patients, adjacent skin adhesions to the glans clitoris were identified and an oily waxy sebum material exuded through breaks in the adhesions. Under higher magnification, keratin or epithelial pearl structures that formed concentric layers approximately 0.5-2 mm in diameter were visualized under the squamous skin epithelial adhesions. These 8 women underwent exploration, dorsal slit surgery and release of localized adjacent skin adhesions to the glans clitoris. In all 8, more than 50% of the glans was involved with balanitis noted below the glans skin adhesions above the corona. Two of the 8 women also had lichen sclerosis and were concomitantly managed with clobetasol. A total of 6 of the 8 patients (75%) have realized significant improvement of the clitoral pain at least 1 year postoperatively. Of the 7 women who did not have clitorodynia from closed compartment syndrome, 3 had clitoral priapism and responded to adrenergic agonist treatment or shunt surgery, 2 women suffered blunt perineal trauma and were suspected of having pudendal neuropathy, and 2 women had blunt perineal trauma and had clitoral neuromata on surgical exploration.

Conclusions: Clitorodynia, although rare, appears most commonly to be caused by a closed compartment syndrome of adjacent skin adhesions to the glans clitoris. This leads to underlying unrecognized balanitis, keratin pearl formation and chronic pain. If during physical examination the corona of the glans clitoris cannot be visualized despite vigorous retraction, the closed compartment form of treatable chronic clitoral pain should be suspected.
SCROTAL PAIN AFTER MICROSURGICAL DENERVATION OF THE SPERMATIC CORD
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(Presentation to be made by Jacob R. Basilius, B.S.)

Objectives: Microsurgical spermatic cord denervation (MSCD) is an established treatment for men suffering from chronic scrotal pain that is refractory to medical treatment. We sought to better characterize the scrotal pain that MSCD candidates experience as well as quality of life following MSCD.

Materials and Methods: The records of 54 adult male patients who underwent MSCD at the University of Utah between 2011 and 2015 were retrospectively reviewed. Data collected included: past medical history, etiology of scrotal pain, prior treatments, complications, and quality of life before and after surgical treatment. Patients were contacted by phone and asked about their quality of life by an independent evaluator in order to establish long-term satisfaction.

Results: The average patient was 41.7 (SD 14.3) years old with a BMI of 27.6 (SD 4.9). A history of depression and other chronic pain complaints were present in 38% and 33% of patients respectively. Chronic scrotal pain was of unknown etiology in 44%. Pain was directly attributed to scrotal or inguinal surgery in 30% of patients, although 70% had undergone a prior procedure on review of their history. All patients undergoing MSCD had previously responded to an inguinal or subinguinal nerve block. 67% of patients reported a significant negative affect on their quality of life, with decreased mobility and pain during intercourse being the most common complaints. Ultimately, 67% of patients were satisfied with their pain improvement post-surgery. When stratified by a history of chronic pain complaints, 56% of patients with other pain complaints compared with 72% without were satisfied (p=0.3). Of those who were unsatisfied 24% elected to undergo an orchiectomy of the affected testis or epididymectomy in attempt to further improve pain. The most common complaint following MSCD was skin sensation changes.

Conclusions: MSCD remains a viable option for the majority of patients with chronic scrotal pain, however, satisfaction with the procedure decreases with longer term follow up. Complications are minimal, but there appears to be a not insignificant proportion of patients for whom MSCD is not helpful. Although it did not reach statistical significance, there was a trend towards patients with other non-testicular chronic pain complaints being less satisfied. Orchiectomy remains an option for pain improvement in refractory cases.

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FINANCIAL BURDENS OF FERTILITY CARE: HOW TREATMENT COSTS IMPACT FINANCIAL DIFFICULTY

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(Presentation to be made by Dr. Samuel Washington)

Objectives: The average cost for couples undergoing in-vitro fertilization (IVF) approaches $25,000 with roughly $1.8 billion was spent on fertility treatments. This project aims to characterize how patients’ perception of costs impacts financial decisions and treatment choices surrounding fertility care.

Materials and Methods: Members of a prospective infertility cohort presenting for initial visits at REI clinics. Interviews were conducted at enrollment and 18 months. Subjects were asked about plans to cover anticipated costs of fertility care and how much difficulty was associated with paying for care. Responses were systematically grouped by themes and coded.

Results: Of 414 couples, the majority (70%) planned for covering treatment. Half would use savings or retirement (49%), refinance their home (17%) or accept debt (32). One third (37%) felt that cost or insurance coverage caused delays in treatment (50%) or limited access to providers (22%). Nearly one-fifth (18.5%) reported highest financial difficulty (8-10/10); one-third (38.2%) reported least difficulty (0-3/10). Those with highest difficulty had lower income, no previous children and more plans for debt (p<0.05 for all) Plans to take on debt (p=.002) or a personal loan (p=.004) were associated with significantly higher financial distress at 18 month follow-up; plans to use savings or retirement funds were associated with significantly lower distress (p=.007).

Conclusions: Fertility treatment decisions may be strongly influenced by considerations of cost and insurance coverage and for many, these decisions are associated with significant financial difficulty.
STATE OF THE ART

Transgender Surgery.

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