



Winter Society for the Study of Male Reproduction 2008



President's Message

Greetings from cold and snowy Milwaukee. As I write this, it's hard



Jay I. Sandlow, MD

not to think about warm weather and sunshine. And where else to get that than Orlando, Florida, the site of this year's AUA and SSMR program. Our program chair, Dr. Ajay Nangia from the University of Kansas, has organized a very useful and practical meeting, entitled, "Vasectomy, What is all the Fuss About?" Details regarding this will be outlined by Ajay later in this newsletter, including meeting needs and objectives and the program schedule. Our annual banquet will be held Tuesday night at B.B. King's

Blues Club. It's sure to be a great time; register before the April 20th deadline so you don't miss out. Also, big news regarding our 2008 SSMR meeting. We have successfully lobbied to move the meeting to Tuesday May 20th, thus putting the meeting the day before the infertility scientific sessions.

The recent ASRM meeting was held in Washington, DC, October 13 - 17, 2007. A synopsis of male infertility talks and events at the ASRM are described in this newsletter. Highlights included the Bruce Stewart AUA lecture given by Dr. Renee Rejio Pera, the Ethicon Endosurgery Endowed Lecture given by Dr. Marc Goldstein, as well as many other interesting talks, posters, and mini-symposia. We're already looking forward to next year's meeting, which will be held in San Francisco, California. The SMRU Postgraduate Course will be run by Dr. Bob Brannigan, and is entitled, "Unraveling the Mysteries of Spermatogenesis: Contemporary Therapies, Stem Cells, and Beyond" with course faculty of Drs. Brannigan, Dolores Lamb, and Paul Turek. We would encourage all those SSMR members attending the ASRM to consider signing up for this course, as it is sure to be educational and useful.

Another upcoming meeting of interest to SSMR members is the American Society of Andrology annual meeting in Albuquerque, New Mexico, this April 12 - 15. Speaking of the ASA, the society is sponsoring the Andrology Literature Self-Assessment Exam. This is an on-line exam that will cover all aspects of andrology, from basic science, laboratory, and clinical science. Applicants sign up for the area of choice and then receive study materials consisting of journal articles from the Journal of Andrology. Please see www.andrologysociety.org/exam/default.aspx for more details.

Our Traveling Fellows program, which is sponsored in conjunction

with the Sexual Medicine Society of North America, has recently selected its traveling fellows. We are also choosing traveling fellows for the Allied Health Professionals Travel Award. We look forward to interacting with all of the traveling fellows, as this has always been beneficial for all involved.

I have enjoyed serving the society over this past year and encourage all members to get involved, whether it's serving on a committee, on the board, or just participating in our meetings and on-line discussions. I look forward to seeing you all in Orlando this spring. Stay warm! ☘

Jay Sandlow, MD
President, SSMR

Thank you once again to our 2007 educational grant providers:

Coast Reproductive
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State-of-the-Art Review: Involvement of Growth Factors in the Process of Post-Vasectomy Micro-Recanalization

By Moshe Wald, MD

The failure rate of bilateral vasectomy is estimated to be about 1 in 1,000. Many failures are attributed to intercourse too soon after vasectomy and late failures are generally felt to be much less common.¹

However, existing data suggest that recanalization may have a significant association with vasectomy failures. Sperm can be found in many vasectomized men using advanced techniques. In 24 men with documented azoospermia who underwent a vasectomy 2 to 31 years previously, sperm was found in the ejaculates from all men and in 62 of 63 total samples collected.² Other investigators found that 10% of vasectomized men (18 of 186) who presented for vasectomy reversals had motile sperm found on centrifuged semen samples.³ A recent study of 1,215 men who participated in a randomized controlled trial for vasectomy techniques showed an overall early recanalization rate of 13% (range 0-25%) based on the technique used.⁴ Complete recanalization of the vas deferens is an established, albeit uncommon, event. Hayashi *et al* reported the case of a 46-year-old man who developed a normal sperm count and motility three years after his vasectomy.⁵ Detailed histology showed complete unilateral epithelial recanalization as well as the presence of multiple blind-ending epithelial-lined tubules.

The formation of microscopic epithelial tubules appears to be a much more common and poorly understood event. Studies of vas deferens removed at the time of vasectomy reversals has demonstrated the presence of epithelial lined micro-canals emanating from the both the abdominal and testicular ends of the vas deferens. These have been found to have sperm either extravasating from them or within the tubules on pathological examination.^{6,7}

We have recently conducted a study to examine what molecular and biological processes are occurring at the site of vasectomy. Using a rat model, we demonstrated the presence of microcanals sprouting from the two edges of the severed vas deferens. Tissue levels of selected growth factors were then tested in both edges of the severed vasa deferentia, and compared to the levels at the contralateral, sham-operated side. Real-time PCR of specimens from all animals demonstrated a 9-fold increase of TGF- β mRNA, a 12-fold increase of PDGF- β mRNA, 6-fold increase of PDGF- β receptor, 11-fold increase of PDGF- α mRNA, and 7-fold increase of PDGF- α receptor. All increases were statistically significant ($p < 0.05$) and elevations were seen at all time points (2, 8 and 12 weeks). ELISA demonstrated that the protein levels of TGF- β and PDGF- β were significantly up-regulated in vasectomy sites, and that this is a durable response over time.⁸ Interestingly, all growth factors and receptors that demonstrated an increased level of expression showed a trend towards a higher increase at the testicular end of the vas. This reached statistical significance with PDGF- β . These findings suggest an involvement of growth factors in the process of post-vasectomy micro-recanalization. The identification of which growth factors seem to be most involved has not yet been addressed. Both TGF- β and PDGF- β are known to be involved in wound healing with effects including the proliferation of fibroblasts and smooth muscle cells, chemot-

axis, and the inhibition of macrophage and lymphocyte proliferation. It is not clear yet whether these growth factors are acting separately or in concert, but the induction of PDGF- β by TGF- β has been previously reported.⁹ Furthermore, TGF- β has been suggested to play a role in sperm maturation and maintenance in rats.¹⁰ While further studies will be required to confirm a direct cause and effect relationship between the local increase in TGF- β and PDGF- β levels and the formation of post-vasectomy micro-canals, our current findings suggest a possible mechanism for post-vasectomy ejaculate sperm identification, as well as a possible role for selected growth factors in reconstructive procedures of the male reproductive tract.

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Review of ASRM 2007

MONDAY, OCTOBER 15, 2007

Genetic Testing in Male Infertility Symposium

(Reviewed by Dr. Deepinder)

A significant proportion of men with infertility may have a genetic cause. These men are at increased risk of having recurrent miscarriages with their partner. The development of assisted reproductive technologies, especially intracytoplasmic sperm injection (ICSI) now enables these infertile men to father children. However, ICSI carries a high risk of transmitting genetically determined diseases to the offspring as it bypass all the physiological mechanisms that act as protective barriers against sperm with genetic defects. Hence, it is imperative for the clinicians to discover the cause of infertility before subjecting these patients to ICSI. Primarily, three kinds of genetic testing are available for evaluation of male infertility.

Karyotype Evaluation: One in twenty infertile men bears a chromosomal anomaly; of these 80% involve sex chromosomes and 20% involve autosomes. The most common karyotype abnormality associated with male infertility is Klinefelter syndrome, in which 90% have 46, XXY Karyotype and 10% have mosaic 46XY/47, XXY Karyotype. Some of the other common chromosomal abnormalities associated with infertile men include Robertsonian and reciprocal translocations. Karyotyping should be considered a necessary part of pretreatment screening for all men referred for ICSI.

Yq-chromosome Microdeletions Testing: Yq microdeletions are observed in 10-15% of infertile men with azoospermia or severe oligospermia. Therefore, infertile men with non-obstructive azoospermia or severe oligospermia (sperm density < 5 million/mL) in whom the cause of spermatogenic failure is not apparent should be tested for Yq microdeletions. The test involves detecting Yq microdeletions by PCR-based mapping of several molecular biomarkers or genes located within and outside the AZF (Azoospermia Factor) region of Y-chromosome. High resolution microarrays for chromosome testing are being developed for detection of Y deletions. Although most Yq microdeletions occur de-novo, transmission of Yq microdeletions from father to son through ICSI is known to occur; and hence child's male factor infertility needs to be discussed.

Genetic Mutations associated with Male Infertility: Congenital bilateral absence of the vas deferens is found in 2% of men presenting with infertility. Approximately three fourth of men with congenital absence of vas deferens harbor mutations of the Cystic Fibrosis Transmembrane Conductance Regulator (CFTR) gene. Azoospermic men with at least one absence vas deferens on physical examination or azoospermic men with evidence of normal spermatogenesis should be tested for **CFTR gene mutation**.

Infertile men with post-meiotic germ cell maturation arrest should undergo testing for cAMP response element modulator (**CREM**)-tau mutation. Mutations in the androgen receptor (**AR**) gene have been associated with infertility and undervirilization in phenotypic males. Furthermore, mutations in **anosmin, GnRH receptor, GPR54, DAX-1, SF-1, NELF and FGFR-1 genes** have been associated with idiopathic hypogonadotropic hypogonadism.

Male infertility may also occur as a manifestation of other genetic diseases such as hemochromatosis, sickle cell disease, thalassemia major and myotonic dystrophy.

Male Reproduction and Urology Session

(Reviewed by Joseph Alukal and AJ Nangia)

Identification of Gene Variability Within the Contrin Gene of Azoospermic Patients

Page S21

S. Hammoud, D.M. Dunn, B.R. Emery, R.B. Weiss and D.T. Carrell

The investigators assessed infertile males for polymorphism in the gene expressing contrin, a germ cell specific protein that is responsible for mRNA storage. Importantly, contrin knockout mice demonstrate male infertility. Single nucleotide polymorphisms (SNP) in MSY2 (the gene expressing contrin) were identified using PCR of DNA extracted from peripheral blood from 96 azoospermic men; the identical procedure was repeated on 96 control patients. 2 SNPs identified in the azoospermic population were not identified at all in the control population. In all, a total of 7 SNPs were identified. The authors conclude that some degree of polymorphism of the MSY2 gene exists; this may play a contributory role in some patients with azoospermia.

Increased Risk of Testicular Cancer Among Infertile Men

Page S22

T.J. Walsh, M. Schembri, P.J. Turek and M.S. Croughan

The investigators performed a retrospective registry study utilizing the California Cancer Registry (CCR). 51,000 couples evaluated for infertility at 15 California centers between the years of 1965 and 1998 were considered. Of these, 43,404 male partners could be linked within the CCR. 44 cases of post-infertility testis cancer were identified in this cohort. This translated to a statistically significantly higher incidence of testis cancer in the infertility cohort (standardized incidence ratio 3.6; confidence interval 2.1 to 5.9). This finding is consistent with other studies that have identified a higher incidence of testis cancer in patients with male infertility. The authors conclude that this supports a potential common etiology for infertility and testis cancer.

Soy Food and Soy Isoflavone Intake in Relation to Semen Quality Parameters

Page S22

J.E. Chavarro, S.M. Sadio, T.L. Toth and R. Hauser

The investigators hypothesize that a diet high in soy products could decrease fertility; high dietary intake of isoflavones has been shown to have this effect in animal studies. A questionnaire assessing dietary soy intake was administered to 100 men presenting for infertility; complete semen analysis data was available for all of these men. Higher levels of dietary soy intake correlated with lower sperm density; this relationship remained statistically significant even after accounting for



Review of 2007 ASRM continued

other factors including age, BMI, and smoking status. The authors conclude that high dietary intake of soy foods is associated with lower sperm density.

The Frequency of Epididymal Protein P34H Deficiency in Men Evaluated for Infertility

Page S22

S.I. Moskovtsev, K. Jarvi, C. Legare, R. Sullivan and J.B.M. Mullen

Epididymal protein P34H accumulates on the acrosomal cap of spermatozoa during maturation in the epididymis. This protein enables binding of spermatozoa to the zona pellucida of the oocyte. As such, the authors hypothesize that deficient amounts of this protein could result in male infertility. Western blot for P34H was performed on semen samples obtained both from patients with infertility and known fertile controls; other semen parameters including density, motility, and morphology were also assessed. 14 of 105 men in the infertility cohort were found to have deficient levels of p34H in their semen; this was in comparison to only 1 subject out of 108 in the fertile control cohort. Importantly, P34H deficiency did not correlate with any of the other semen parameters considered. The authors conclude that a significant number of men presenting for evaluation of infertility may be deficient in P34H.

Chronic Exposure to Environmentally-Relevant, Low-Doses of Cadmium (Cd) in a Rat Model Mimics Effects on Spermatogenesis Observed in Infertile Men with Varicoceles

Page S23

S.H. Benoff, K.J. Auborn, D.-Z. Chen, J.L. Marmar and I.R. Hurley

The authors have previously demonstrated that chronic exposure to cadmium (Cd) results in decreased sperm motility in male Wistar rats. This follow up animal study considered intratesticular testosterone, testis histology, apoptosis, and gene expression profile in the testis of Wistar rats exposed to various levels of Cd from ages 5 to 21 weeks. Testosterone levels and germ cell number decreased with increasing levels of Cd exposure; at the same time, levels of apoptosis increased. Gene expression profiles in Cd exposed animals showed increase expression of nitric oxide synthase (NOS) and genes relating to steroid biosynthesis. Decreased expression of genes regulating NOS inhibition and sperm maturation was also observed. The authors conclude that elevated levels of Cd may represent a significant cause of comorbidity in patients with infertility.

Sperm Motility is the Best Predictor of Ejaculatory Duct Obstruction

Page S23

M. Khera, O. Mohamed, B.B. Najari, J.P. Alukal, E.D. Grober and L.I. Lipshultz

The authors retrospectively assessed patients undergoing seminal vesicle aspiration as part of a workup for suspected ejaculatory duct obstruction (EDO). In these patients, they found decreased sperm motility (<15%) to be a more sensitive predictor of a positive SVA than TRUS findings including seminal vesicle size greater than 15mm or presence of a midline cyst (81.8% versus 43.8% and 56.3%, respec-

tively). Sperm motility was not specific for EDO, however. The authors conclude that decreased sperm motility is a meaningful predictor of EDO.

American Urological Association/Bruce Stewart Memorial Lecture

(Summarized by Dorrie Lamb)

Dr. Renee Rejio Pera, who recently accepted the position of Director of the Stanford University Institute for Stem Cell Biology and Regenerative Medicine, presented the annual Bruce Stewart Lecture. Dr. Rejio Pera's work focused on the key molecular and cytoplasmic components that define and regulate stem cells — both primordial germ cells and embryonic stem cells. Indeed, Dr. Rejio Pera's work has shown that the expression of specific genes regulates the differentiation of human embryonic stem cells into primordial germ cells and modification of gene expression can set the cells down different pathways of differentiation. During these studies, the genes *DAZL*, *PUMILIO* and *NANOS* were shown to be expressed at the relatively early stages of germ cell formation in both males and females. The expression of these genes in germ cell development is highly conserved and they also play an important role for germ cell formation in lower organisms. Indeed, the timeline of gene expression during the early events of human embryogenesis may also provide insights into infertility and birth defects. A major research goal of her laboratory is to produce germ cells in vitro that could ultimately be used to assist infertile couples. Dr. Rejio Pera is also working to develop new embryonic stem cell lines, in part through somatic cell nuclear transfer.

SMRU Mini Symposium

Epigenetics: What It is and How it Relates to Abnormal Reproductive Outcomes

(Reviewed by Trey Brugh)

Dr. Cortessis presented a review of the emerging discipline of epigenetics. Related to genetics, epigenetics is a process that determines which genes will be expressed, i.e. regulates genetic activity. Regulation of gene expression is achieved through changing chromatin structure. Chromatin is DNA packaged with proteins called histones. The structure of chromatin is changed through methylation and histone modifications. These changes do not alter nucleotides or subsequent proteins and are common and beneficial. On the other hand genetic change, in which a mutation occurs, resulting in a nucleotide, mRNA, and subsequent protein alteration is relatively rare.

Epigenetic reprogramming occurs twice. The first reprogramming event occurs during germ cell development in the germline of a parent. The second event occurs during the early stages of the embryo. During these times there is widespread erasure of demethylation and then stepwise sperm and egg specific de novo DNA methylation. Methylation of DNA results in imprinting, in which one allele, either the paternal or maternal copy, is expressed and the other allele is silenced. The conflict theory of imprinting reflects the differential expression of the maternal and paternal genomes in the developing embryo. Questions have been raised whether IVF, ICSI and embryo culture may affect imprinting. The incidence of two congenital syndromes have been stud-



ied to attempt to determine if defects in imprinting may affect children conceived through ART. Beckwith-Wiedemann and Angelman syndromes are rare conditions, and some cases are the result of epigenetic defects. There is a 6.5 relative risk for children conceived through ART for developing either of these syndromes, when compared to natural conception. Dr. Cortessis warns that this data is gathered from a limited number of studies which have very small patient populations. An alternative explanation for the increased risk for these couples to conceive children with this disorder is the possibility that infertile couples' gametes may be the cause of impaired methylation capacity and therefore, ART may not be the cause.

TUESDAY, OCTOBER 16, 2007

**ASRM Plenary Session IV: Ethicon Endosurgery Endowed Lecture
"Innovations in the Surgery of Male Infertility: Life at the Cutting Edge"**

By Marc Goldstein, MD

(Summary by Tobias Kohler, MD and Robert Brannigan, MD)

Dr Goldstein's plenary session "Innovations in the Surgery of Male Infertility: *Life at the Cutting Edge*" described how the field of male infertility has progressed over the last few decades. Despite IVF/ ICSI, there remain many reasons to evaluate the infertile male: they have a 17-37 times higher incidence of testicular cancer, 30-100 times higher incidence of genetic abnormalities, and are at risk for impaired fertility and androgen deficiency from large varicoceles. The concept of upgrading male fertility status is also crucial, as men who are azoospermic and condemned to using donor sperm may become candidates for use of IVF/ICSI, men requiring IVF/ICSI can become IUI candidates, or IUI candidates may be able to conceive naturally.

Of all causes of male infertility, varicocele is by far the most common etiology, accounting for 41.2% of all male patient factors. This is followed in order of occurrence by obstruction 18%, testis failure 16.4%, idiopathic 8.8 %, hormonal 3.8%, ejaculatory 2.4%, cryptorchidism 2.2%, anti-sperm antibodies 1.8%, testis cancer 1.6%, gonadotoxic treatments 1.2%, infection 0.8%, Klinefelter's syndrome 0.6 % and non testis cancer 0.4%. Of these conditions, the majority are treatable, most with microsurgery. Microsurgeries for male infertility are some of the most challenging of all microsurgeries. **Important sizes to remember are the size of human air, 100 microns and the red blood cell, 6 microns. The epididymal tubule is 200-300 microns and is extremely delicate, the vas deferens is 300 microns, and 10-0 suture is 17 microns.** Thus, systemized training for infertility microsurgery that utilizes rat models and human tissue specimens is essential.

Azoospermia is always due to either obstruction (indicated by large testicles with full epididymis and normal FSH), or lack of sperm production (typically small soft testicles with high FSH). Equivocal cases should be decided with testis biopsy with the ability to cryopreserve sperm at that time. Obstruction can occur anywhere, but vasal obstruction is the most common with 800,000 vasectomies occurring per year. Epididymal obstruction can occur because of infection or secondarily because of pressure in the system, as the testicle produces 50,000 sperm per minute at the onset of puberty. This also accounts for lower success rates with longer periods from vasectomy to time of reversal.

Innovations in vasovasostomy to insure a critical, watertight, anastomosis include the microdot technique for precision suture placement. It has yielded impressive results of 99.5% sperm in the ejaculate, a 54% overall natural pregnancy rate, and 64% natural pregnancy rate excluding female factors. Overall rates of reversal including vasoepididymostomy depend greatly on time from vasectomy with < 15 years yielding an 84% success rate versus 44% > 15 years. Situations in which couples seek to have more than one child, time since vasectomy < 15 years, and where the wife is young favors reversal over IVF/ICSI. Data has shown that reversals are equal to or more cost effective than IVF/ICSI especially with younger female age. Epididymal sperm aspiration for congenital absence of the vas deferens has the highest pregnancy rate (70%) of any reproductive procedure.

Summary of Podium Sessions

(Reviewed by Jessie Mills and Trey Brugh)

O-128

Sperm DNA Damage: Is Altered Carbohydrate Metabolism to Blame?
Lane, et al.

This study investigated the relationship between carbohydrate metabolism, ROS and DNA damage as measured by DCFDA and TUNEL assays respectively. The authors incubated motile sperm in ascending concentrations of glucose media and found that, as the glucose concentration increased, the ROS production and DNA damage increased. Conversely, elevated fructose levels appeared to have no effect on ROS production or DNA damage. The clinical implications of this in vitro finding is whether men with high levels of ROS and DNA damage have altered carbohydrate metabolism.

O-129:

A Novel Form of the Whitaker Test for Ejaculatory Duct Obstruction
Turek, et al.

Dr. Turek's group presented their data diagnosing ejaculatory duct obstruction (EDO) via a novel manometric assay of the ejaculatory duct. The control group was derived from men undergoing vasectomy reversal and the diagnostic group was made up of men presenting with infertility or pain with a presumed diagnosis of EDO. Both groups underwent seminal vesicle injection and ejaculatory duct manometry. Men with EDO then underwent TURED and had pressures rechecked. Control patients had opening pressures of 34.3 cmH₂O (n=5.) 9 men with presumed EDO underwent pressure study and had a mean pressure of 116 cmH₂O. After TURED, these men had a mean pressure of 53 cmH₂O. Based on these findings, Dr. Turek concluded that ejaculatory duct manometry is a useful diagnostic tool to define EDO and monitor efficacy of TURED.



Review of 2007 ASRM continued

O-130

Relationship of Pubertal Gynecomastia with Varicocele and Various Parameters of Growth: A Seven Year Prospective Study

Agarwal, et al.

Dr. Agarwal et al presented a study correlating the presence of gynecomastia with varicocele in a longitudinal cohort of 131 boys. These boys were followed for 7 years starting between ages 6-8 through the onset of puberty. The boys were examined for the presence of gynecomastia and varicocele, testicular volume, height, weight, and Tanner stage. This prospective study found an incidence of varicocele and gynecomastia of 15.2 %. Gynecomastia was transient with mean age of onset of just over 12 years and mean age of disappearance of 13 years. Presence of a varicocele was positively correlated with the development of gynecomastia.

O-131

Proliferation and Differentiation of Male Germ-Line Stem Cells From Testes of Non-Obstructive Azoospermia Using Sequential Culture Systems

Kim, et al.

This study presented the feasibility of differentiating male germ-line stem cells into sperm lineage cells. The authors extracted testicular tissue from 35 men with non-obstructive azoospermia confirmed by testis biopsy showing maturation arrest or Sertoli cell only. By placing the tissue in various media, the authors found a dramatic increase in markers for post-meiotic germ cells (c-Kit receptor). These findings suggest that this sequential cell culture protocol could encourage germ-cell differentiation into sperm lineage cells.

O-132

Combined Effects of the Experimental Left Varicocele and Lead or Nicotine on the Rat Testis

Carrell, et al.

This study investigated whether the combined insult of a varicocele with exposure to lead and nicotine is worse for testicular weight and sperm concentration in the rat than varicocele alone. Rats underwent standard varicocele induction via partial ligation of the left spermatic vein at the level of the renal vein. They were then divided into groups fed lead in their water or injected with nicotine or given nothing. Rats in either the lead or nicotine group with varicoceles showed a decrease in testicular volume as well as sperm concentration in the caudal epididymis. These findings suggest that varicocele makes the testis more susceptible to environmental insult.

O-133

Varicolectomy for Infertile Couples With Advanced Paternal Age

Zini, et al.

This study looked at the efficacy of repairing varicoceles in men with paternal age over 40. The retrospective study divided men with varicoceles into four groups: group one was men under 40 who underwent varicocele repair, group two was man under 40 who did not un-

dergo repair, group three was men over 40 who underwent repair, and group four was men over 40 who did not have surgery. The outcome was spontaneous pregnancy rate. There were no statistically significant differences in baseline semen and clinical parameters between groups. The authors did observe that men over 40 who elected repair had a higher spontaneous pregnancy rate than men who did not undergo surgery. The data presented supports surgical repair of varicocele in men over 40.

Poster Review

(Reviewed by Michael Eisenberg and Stanton Honig)

A growing body of evidence has arisen suggesting that varicocele can affect Leydig cell function. Building on this, Tanrikut et al from Cornell retrospectively reviewed their own patient database. Compared to patients undergoing vasectomy reversal, men with varicoceles had significantly lower mean testosterone levels. This is especially striking given the fact that the control patients (those men undergoing vasectomy reversal) were significantly older. Furthermore, the group also documented an increase in testosterone levels in men after varicocele repair. While retrospective in nature, this study provides important information to help counsel patients on how varicoceles may impact male health.

Khera et al from Baylor College of Medicine retrospectively studied the impact of varicoceles on seminal fluid reactive oxygen species (ROS). Following varicolectomy, ROS levels fell significantly, although not to the level of infertile men without varicoceles. This further contributes to our pathophysiologic understanding of varicoceles.

While sponsored by the maker of vardenafil, Bayer, Jarvi et al showed no impairment in semen characteristics (sperm concentration, total sperm count, sperm morphology, and sperm motility) after daily treatment with daily phosphodiesterase inhibitors for 6 months.

Another popular topic in the media today is obesity. Fariello et al from Sao Paolo, Brazil showed that with increasing BMI, the total motile sperm count declines for a man with a significant difference between those with BMI <25 (eutrophic) and those with BMI >30 (obese).

Modder et al from Northwestern provided encouraging data for fertility preservation in patients with azoospermia or oligospermia at the time of cancer diagnosis. Overall, all but one of six patients had sperm preserved either by microdissection or cryopreservation prior to cancer therapy.

Encouraging results for patients with obstructive azoospermia undergoing TESA/cryopreservation was published by the group by Garg et al from the Medical College of Wisconsin. Sperm adequate for cryopreservation was found in 94% of patients with a 71% pregnancy rate achieved with IVF.



WEDNESDAY, OCTOBER 17, 2007

The Society for Male Reproduction and Urology Abstracts

Podium Summary: The Society for Male Reproduction and Urology

(Reviewed by David Fenig and Jay Sandlow)

O-198

Successful Cloning of the Male Genome

T. Takeuchi, Q.V. Neri, M. Cheng, Z. Rosenwaks, G.D. Palermo. New York, NY

The authors were able to replicate the male genome through injection of the sperm genome into ooplasts. Androgenic replicates were created from mouse oocytes injected with a single sperm and then transferred to haploid parthenotes. ICSI offspring served as controls. 77% developed into blastocysts compared to 81% of ICSI embryos. However, of 64 blastocysts transferred, 11 offspring (17%) were viable, compared to 43% of controls. The technique was more reproducible than whole genome cloning and did not alter epigenetic imprinting.

O-199

Subtle Changes in Culture Environmental Temperature Appear to Affect Spermatozoan Physiology

L. Penrose, M. Seller, S. Jabara, S. Overley, J. Copeland, S. Prien. Lubbock, TX

Penrose et al evaluated the effect of subtle temperature changes on sperm physiology and activity in order to create a more optimal environment for sperm culture. Porcine ejaculates were incubated for 3 hours at 4 different temperatures within $\pm 2^\circ\text{C}$ of gonad temperature at 0.5°C increments. CASA was performed. A trend towards increased migration of sperm to the chamber and increased motility was noted at approximate gonadal temperatures indicating that incubation at cooler temperatures than currently performed may be warranted. No change in forward progression was noted.

O-200

Efficacy of Clomid, Arimidex, and Androgel in Normalizing Testosterone in Young Hypogonadal Men Presenting with Infertility and Sexual Dysfunction

D.A. Paduch, J. Kiper. New York, NY

In a study by Paduch and Kiper, the effectiveness of different methods of testosterone replacement therapy was evaluated in a cohort of 350 hypogonadal men presenting with infertility or sexual dysfunction. Hypogonadism was defined as testosterone <400 ng/dl in men younger than 40 years and <350 ng/dl in men older than 40 years. Patients treated for sexual dysfunction were replaced with androgel. Infertility patients were replaced with clomid if their estrogen/testosterone ratio was less than 10 or arimidex if greater than 10. Testosterone levels normalized in all patients. Men taking clomid had significantly higher estradiol levels after treatment. Elevated estradiol has been reported to predict the risk of atherosclerosis in young men and although unproven, there may be a causal relationship. Thus clomid use should be monitored closely in men with elevated estradiol.

O-201

Correlation Between Sperm DNA Fragmentation and Morphology and Recurrent Spontaneous Abortion

O.A. Mohamed, M. Khera, J. Alukal, G. Youssef, M. Francis, H.A. Hamed. Houston, TX

The group from Baylor College of Medicine evaluated the effects of semen parameters on recurrent pregnancy loss. In this prospective study by Mohamed et al, semen analysis data, including DNA fragmentation rate, was analyzed in the male partner of couples with = 3 spontaneous abortions, using fertile couples as a control. Higher DNA fragmentation rates were found in the infertile cohort (72.55% vs. 28.37%). Lower strict morphology and motility rates were also found in the infertile cohort vs the fertile cohort (65.5% vs. 37%, 39.5% vs. 62%, respectively).

O-202

Microfluidic Sperm Sorting Device Provides a Novel Method for Selecting Motile Sperm with Higher DNA Integrity

R.T. Schulte, Y.K. Chung, D.A. Ohl, S. Takayama, G.D. Smith. Ann Arbor, MI

A novel method to select sperm with high DNA integrity using a gravity-driven microfluidic sperm sorting device was developed by the group from University of Michigan. A comparison of sperm DNA integrity and motility was made among different semen processing techniques: unprocessed, serial centrifugation, density gradient centrifugation, swim-up, and microfluidic sperm sorting. Sperm DNA integrity was evaluated using TUNEL and SCD analyses. Microfluidic sperm sorting selected a higher number of motile sperm with decreased DNA fragmentation. Compared to the next most effective technique, the swim-up technique, DNA fragmentation was lower (1.9% vs. 5.7) and motility higher (96.2% vs. 85.8%).

O-203

Male Age Negatively Impacts Embryo Development and Reproductive Outcome in Donor Oocyte Art Cycles

J.L. Frattarelli, K.A. Miller, B.T. Miller, K. Elkind-Hirsch, R.T. Scott. Morristown, NJ; Troy MI

The authors demonstrate the impact of male age on IVF outcomes in couples using donor oocytes and fresh ejaculated sperm. Mean age of male patients, female recipients, and oocyte donors was 41.8, 41.4, and 27.1 years, respectively. Advanced paternal age was associated with significant impairment of later embryo development. In men older than 50 years, blastocyst development and live birth rate (41.3% vs. 56.0%) was decreased. An increase in pregnancy loss rate also was found (41.5% vs. 24.4%).



SSMR Elections

Online March 24 - May 1, 2008

Once again, the Society for the Study of Male Reproduction will be holding elections on-line. The ballot will be placed in the Member's Only section of the website (www.ssmr.org). All voting members will be able to vote from March 24 – May 1, 2008.

The positions open for election this year are Treasurer and Member-At-Large. We encourage all voting members to participate in this process. To log in to the Members Only section you will need your Username (which is your last name) as well as your password (which is your member number). You can request your password at the sign-in if you do not have that information available. We hope that this will make it easier to stay involved in our society and make your voice heard. ☞

2008 SSMR Subspecialty Society Program

“Vasectomy – What is All the Fuss About”

Ajay K. Nangia, MD

Vasectomy is one of the “bread and butter” minor surgeries for most urologists, with over 520,000 being performed each year in the U.S. The National Survey for Family Growth reported that vasectomy accounted for 6% of the contraceptive methods used in 2002. Recently a connection between a form of Alzheimer's and vasectomy was published and resulted in a statement being made to address this by the AUA. The AUA is also looking at creating guidelines on vasectomy at the moment. So how is it that such a “minor” operation can cause so much fuss? Why do so many of us get compulsive about the vasectomy — consult to technique to post op instructions and semen analyses? What is the evidence for what we say and do? Is there any evidence? This has led to the topic of the 2008 SSMR Subspecialty Society meeting held at the AUA annual meeting in Orlando. Program Chair, Ajay K. Nangia MD has gathered an enthusiastic and broad faculty, eager to discuss this relevant and common topic. They will cover a myriad of issues including vasectomy technique — evidence for one over another; post op complications and associations, or lack of — to legal ramifications and whether this is what all the fuss is about. The final panel will be a group of leaders from our field that will review the future direction by the AUA to develop guidelines. We hope that the information the faculty provides will help the audience have more evidence to support their current practices or provide new evidence that can help them adapt.

Surely, everyone will have their own opinions and hopefully, will encourage fruitful and lively debate during the question and answer sessions. We invite all members of the Society as well as all attending the 2008 AUA annual meeting to attend this topical presentation, which has wide appeal, as well as significant coverage in the lay media. ☞

2008 SSMR Meeting at the AUA Needs & Objectives

Needs:

What the urologist needs to know about vasectomy – technique and evidence based evaluation of postoperative issues in the United States.

- 1) Demographic distribution of contraception/vasectomy in the United States
- 2) Techniques of vasectomy – does it make a difference
- 3) Post op management and complications – evidence based
- 4) Medico-legal issues

Objectives:

At the conclusion of the session, the participant will:

- 1) Understand the demographics of male contraception in the USA and comparison to abroad
- 2) Examine the evidence based issues with technique, post operative management and complications from vasectomy
- 3) Be aware of future guideline development for vasectomy management
- 4) Be aware of how to avoid the pitfalls with vasectomy and post operative management/medico-legal issues ☞



Society for the Study of Male Reproduction Annual Meeting

Tuesday, May 20, 2008
Orlando, Florida
Rosen Centre, Grand Ballroom D

“Vasectomy: What is All the Fuss About?”
Program Chair: Ajay K. Nangia, MD

12:00 p.m. – 1:00 p.m.	Industry Sponsored Lunch Symposium Economics of Vasectomy and Vasectomy Reversal <i>Neil H. Baum, MD</i>	2:25 p.m. – 2:35 p.m.	Questions and Answers
		2:35 p.m. – 3:00 p.m.	Break
1:00 p.m. – 1:10 p.m.	Introduction <i>Ajay K. Nangia, MBBS</i>	3:00 p.m. – 3:30 p.m.	Legal Ramifications – Is This What All The Fuss Is About? <i>Joe Taraska, JD Orlando FL</i>
1:10 p.m. – 1:40 p.m.	Demographics/Epidemiology <i>David Sokal, MD Associate Director of Family Health International</i>	3:30 p.m. – 3:45 p.m.	International Guidelines – Are There Any the US Can Follow? <i>Gert Dohle, MD Erasmus University Medical Center Rotterdam The Netherlands</i>
	Vasectomy Technique – Does It Really Matter and Is There Any Evidence? <i>David Sokal, MD</i>	3:45 p.m. – 4:00 p.m.	The Future of Vasectomy in the USA – Guidelines <i>Jay I. Sandlow, MD Stanton C. Honig, MD Lawrence S. Ross, MD Ira D. Sharlip, MD Gert Dohle MD</i>
1:40 p.m. – 2:00 p.m.	Post Vasectomy Check Up – What is the Best Practice? <ul style="list-style-type: none">▪ Complete Azoospermia Required <i>Cathy K. Naughton, MD</i>▪ Time and Patient Compliance Most Important <i>J. Stephen Jones, MD</i>▪ Number of Ejaculations Most Important <i>Aaron Spitz, MD</i>	4:00 p.m. – 4:30 p.m.	Questions and Answers
		4:30 p.m. – 5:00 p.m.	SSMR Business Meeting
2:00 p.m. – 2:25 p.m.	Post-Op Issues: What Are The Facts? <ul style="list-style-type: none">▪ Recanalization <i>Moshe Wald, MD</i>▪ Post Vasectomy Pain Syndrome <i>Victor Brugh, MD</i>▪ Any Associated Diseases with Vasectomy? <i>Robert E. Brannigan, MD</i>		



8th Annual SSMR/SMSNA Traveling Fellowship Program

The 8th annual traveling fellowship program will take place in conjunction with the AUA in Orlando, Florida. This year will be the fourth combined fellowship with the Sexual Medicine Society of North America (SMSNA).

These awards are designed to expose young urology residents to the field of sexual medicine, including male infertility and erectile dysfunction, and allow them to participate in many of the events at the AUA.

2008 Men's Health Fellowship Recipients

- Allen Haraway* – University of Mississippi
- Brian Helfand* – Northwestern University
- Aaron Johnson* – Georgetown University
- Eric Laborde* – Louisiana State University
- Stephen Lukascwycz* – University of Minnesota
- Andrew Nisbet* – University of Connecticut
- Peter Stahl* – Weill Cornell Medical College/New York Presbyterian Hospital
- Heidi Stephany* – University of Kansas
- Kristopher Whitehead* – Mayo Clinic, Jacksonville
- Aimee Wiltz* – University of Chicago

2008 Allied Health Fellowship Recipients

- Karen Chamuel* – Jackson Memorial Hospital
- Kevin Flinn* – Men's Health Boston
- Nikunj Gajarawala* – Mayo Clinic, Jacksonville
- Rachel Natale* – Univ. of Pennsylvania Health Sys.
- Monique Wilson* – Cooper Urologic Institute



2008 SSMR Annual Banquet!

Tuesday, May 20, 2008
B.B. King's Blues Club
9101 International Drive
Orlando, Florida

Exercise your RIGHT TO VOTE!

Voting members log on to the SSMR website at www.ssmr.org, to vote for our new treasurer and member-at-large March 24 - May 1, 2008.



You are invited to attend the 2008 SSMR Annual Banquet!

Tuesday, May 20, 2008
B.B. King's Blues Club
9101 International Drive
Orlando, Florida

Register for the banquet quickly and easily online at www.ssmr.org!

B.B. King's Blues Club is located in Pointe Orlando (walking distance from the convention center), and offers a variety of delicious Southern Comfort food fused with flavors from around the globe. The intimate supper club style restaurant & live music venue consists of four full-service bars in three different areas, ranging from an outdoor patio, a mezzanine that looks over the main stage, and a large dining area on the main level.

The "B.B. King All Star Band" — a hand-selected 11-piece house band complete with a full horn section — will have you jamming to music inspired by the King of Blues, the Queen of Motown and the Soul of Funk. The musicians will remind you why Aretha demanded R-E-S-P-E-C-T, why Tina left her good job in the City, why Ray has Georgia on his mind, and what the Temptations are talking about!

Cocktails 7:00 p.m.
Dinner 8:00 p.m.

If you have any dietary needs, please contact the SSMR office at (847) 517-7225 prior to April 20, 2008.

Casual attire is appropriate.

of people attending _____ x \$70.00 per person = \$ _____ (on and before April 20, 2008)

of people attending _____ x \$80.00 per person = \$ _____ (after April 20, 2008)

Name: _____

Spouse/Guest: _____

Address: _____

City: _____ State: _____ Zip: _____

Phone: _____ Fax: _____ Email: _____

Method of Payment:

Check (payable to the SSMR) Visa MasterCard

Card #: _____ Exp. Date: _____

Signature: _____

Please return this form to the SSMR office no later than April 20, 2008.

SSMR
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E-mail: info@ssmr.org
Website: www.ssmr.org



Mark Your Calendars!

Online Voting for SSMR Leadership

From March 24 – May 1, 2008, you will be able to vote for the 2008 – 2009 open SSMR leadership positions on line at www.ssmr.org.

Exercise your RIGHT TO VOTE!

ASA 33rd Annual Conference

April 12 – 15, 2008

Hyatt Regency Albuquerque
Albuquerque, NM

ASA Special Symposium

April 12, 2008

Andrology Lab Workshop

April 12, 2008

AUA 2008 Annual Meeting

May 17 – 22, 2008

Orlando, FL

SSMR Annual Meeting at the AUA Annual Meeting

Tuesday, May 20, 2008

Orlando, FL

Rosen Centre, Grand Ballroom D

The Society for the Study of Male Reproduction (SSMR) encourages organizations and individuals to link to www.ssmr.org.



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